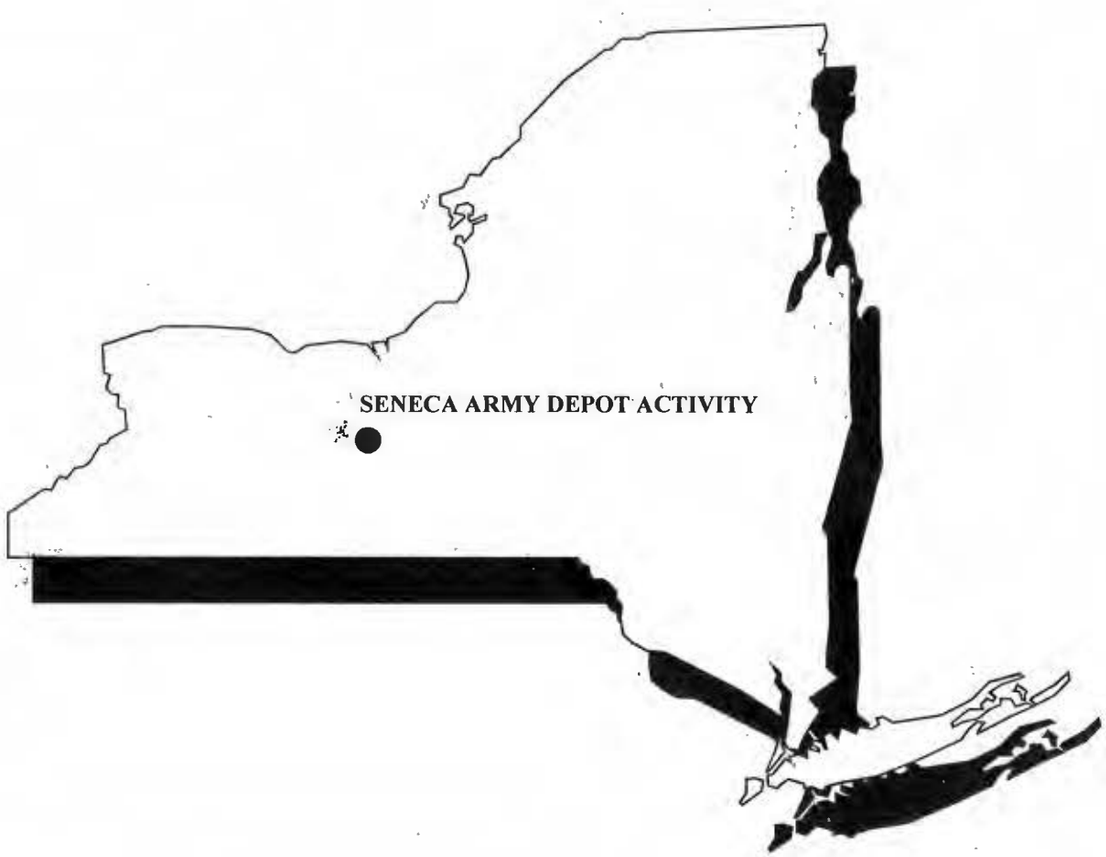
U.S. ARMY ENGINEER DIVISION
HUNTSVILLE, ALABAMA

00750



FINAL

REMEDIAL INVESTIGATION REPORT AT THE RADIOLOGICAL WASTE BURIAL SITES (SEAD-12) VOLUME III OF III - APPENDICES H THROUGH N

CONTRACT NO. DACA87-95-D-0031
DELIVERY ORDER NO. 0005

REVISED AUGUST 2002

LIST OF APPENDICES

APPENDIX H

BACKGROUND , PHASE I RI CHEMICAL AND RADIOLOGICAL DATA-SEDIMENT

- **TABLE H-1: BACKGROUND METALS DATA-SEDIMENT**
- **TABLE H-2: SITE CHEMICAL DATA-SEDIMENT**
- **TABLE H-3: DOWNGRADIENT CHEMICAL DATA-SEDIMENT**
- **TABLE H-4: BACKGROUND RADIOLOGICAL DATA-SEDIMENT**
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SPECIFIC NOTES-

THE SAMPLE DEPTH TO TOP OF SAMPLE AND TO BOTTOM ON ALL TABLES ARE IN FEET.

CRITERIA FOR CHEMICAL DATA IS BASED ON NYSDEC SEDIMENT STDS.

LABORATORY RESULTS FOR URANIUM-233/234 AND –234 WERE COMBINED IN THIS TABLE.

TABLE H-1
BACKGROUND METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								RI Phase		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								67393		SD12-59		SD12-65		SD12-63		SD12-63		SD12-64	
MATRIX								SD12-67		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID								12447		12453		12457		12448		12449		12456	
DEPTH_TOP								SA		0.8		0.2		0.2		0.3		0.6	
DEPTH_BOT								0.2		1		0.5		0.4		0.5		0.8	
SAMP_DATE								0.4		10-Nov-97		11-Nov-97		09-Nov-97		10-Nov-97		11-Nov-97	
QC_CODE								SEDIMEN		SA		SA		SA		SA		SA	
STUDY_ID								9-Nov-97		RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC HEALTH ACC-UMULATION	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES												
Aluminum	MG/KG	17900	100%		0	9	9	12200		10800		10600		12100		7370		4270	
Antimony	MG/KG	0	0%	2	0	0	9	1.8	UJ	1	UJ	2.3	UJ	1.4	UJ	1.6	UJ	3.4	UJ
Arsenic	MG/KG	9.3	67%	6	1	6	9	4.1		2		2.3	U	4.2		1.7	U	3.5	U
Barium	MG/KG	150	100%		0	9	9	87.9		49.6		108		55.5		72.7		74.9	
Beryllium	MG/KG	0.65	89%		0	8	9	0.45		0.42		0.44		0.54		0.34		0.1	U
Cadmium	MG/KG	0	0%	0.6	0	0	9	0.16	U	0.09	U	0.19	U	0.12	U	0.14	U	0.29	U
Calcium	MG/KG	96900	100%		0	9	9	54600		20100		23900		8410		29700		77600	
Chromium	MG/KG	31.6	100%	26	1	9	9	20.2		19.1		16.2		21.4		12.5		7.5	
Cobalt	MG/KG	35	100%		0	9	9	12.2		9.8		8.8		15.1		7.6		4.8	
Copper	MG/KG	49.3	100%	16	6	9	9	20.3		[illegible]		13.7		23.2		14.2		9.1	
Cyanide	MG/KG	0	0%		0	0	9	1.5	UJ	0.92	UJ	2.4	UJ	1.1	UJ	1.6	UJ	3.1	UJ
Iron	MG/KG	45300	100%	20000	6	9	9	24700		32000		14600		28600		13100		7820	
Lead	MG/KG	35.8	100%	31	1	9	9	11.1	J	11.2	J	9.3	J	16.6	J	8.5	J	4.4	J
Magnesium	MG/KG	9840	100%		0	9	9	8600		5100		5910		7370		4780		3140	
Manganese	MG/KG	1200	100%	460	5	9	9	638		381		266		368		243		1200	
Mercury	MG/KG	0.09	11%	0.15	0	1	9	0.11	U	0.09		0.14	U	0.08	U	0.1	U	0.2	U
Nickel	MG/KG	67.9	100%	16	8	9	9	33		30.8		23.2		36.6		20.8		11.7	
Potassium	MG/KG	2100	100%		0	9	9	1760		1610		2100		1390		1410		1270	
Selenium	MG/KG	4.2	89%		0	8	9	2.6		2.3		3.2		3.3		3.5		4.5	U
Silver	MG/KG	0	0%	1	0	0	9	1.1	U	0.61	U	1.4	U	0.84	U	0.99	U	2	U
Sodium	MG/KG	476	100%		0	9	9	438		148		430		249		282		476	
Thallium	MG/KG	2.5	11%		0	1	9	3.3	U	1.8	U	4.1	U	2.5	U	3	U	6.1	U
Vanadium	MG/KG	28.4	100%		0	9	9	20		14.8		16.5		21		11.9		7.8	
Zinc	MG/KG	135	100%	120	1	9	9	80.9		77.8		77.8		98.8		65.8		40.6	

TABLE H-1
BACKGROUND METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12			
LOC_ID								SD12-61		SD12-60		SD12-66			
MATRIX								SEDIMENT		SEDIMENT		SEDIMENT			
SAMP_ID								12455		12454		12458			
DEPTH_TOP								0.7		1		2.5			
DEPTH_BOT								0.9		1.2		2.8			
SAMP_DATE								11-Nov-97		10-Nov-97		11-Nov-97			
QC_CODE								SA		SA		SA			
STUDY_ID								RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1		
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC HEALTH ACC-UMULATION	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES								
Aluminum	MG/KG	17900	100%		0	9	9	17900		9280		15700			
Antimony	MG/KG	0	0%	2	0	0	9	0.87	UJ	1.5	UJ	0.8	UJ		
Arsenic	MG/KG	9.3	67%	6	1	6	9	[illegible]		2.7		4			
Barium	MG/KG	150	100%		0	9	9	150		69.9		116			
Beryllium	MG/KG	0.65	89%		0	8	9	0.65		0.32		0.59			
Cadmium	MG/KG	0	0%	0.6	0	0	9	0.07	U	0.13	U	0.07	U		
Calcium	MG/KG	96900	100%		0	9	9	96900		25600		2590			
Chromium	MG/KG	31.6	100%	26	1	9	9	31.6		15.9		24.5			
Cobalt	MG/KG	35	100%		0	9	9	35		11		13.8			
Copper	MG/KG	49.3	100%	16	6	9	9	49.3		18		16.9			
Cyanide	MG/KG	0	0%		0	0	9	0.7	UJ	1.4	UJ	0.73	UJ		
Iron	MG/KG	45300	100%	20000	6	9	9	45300		20300		[illegible]			
Lead	MG/KG	35.8	100%	31	1	9	9	35.8	J	11.4	J	11.4	J		
Magnesium	MG/KG	9840	100%		0	9	9	9840		5500		5160			
Manganese	MG/KG	1200	100%	460	5	9	9	1150		827		725			
Mercury	MG/KG	0.09	11%	0.15	0	1	9	0.05	U	0.11	U	0.06	U		
Nickel	MG/KG	67.9	100%	16	8	9	9	[illegible]		27.8		35.9			
Potassium	MG/KG	2100	100%		0	9	9	1850		1010		1990			
Selenium	MG/KG	4.2	89%		0	8	9	4.2		3.8		3.5			
Silver	MG/KG	0	0%	1	0	0	9	0.52	U	0.89	U	0.48	U		
Sodium	MG/KG	476	100%		0	9	9	194		160		81			
Thallium	MG/KG	2.5	11%		0	1	9	2.5		2.7	U	1.4	U		
Vanadium	MG/KG	28.4	100%		0	9	9	28.4		13.9		25.3			
Zinc	MG/KG	135	100%	120	1	9	9	135		72.5		84.7			

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		ESI	
LOC_ID									SD12A-1		SD12A-1		SD12A-2		SD12A-3		ESI-12S	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SD12A-4	
SAMP_ID									SD12A-20		SD12A-1		SD12A-2		SD12A-3		SD12A-4	
DEPTH_TOP									0		0		0		0		SA	
DEPTH_BOT									0.2		0.2		0.2		0.2		0	
SAMP_DATE									22-Jun-94		22-Jun-94		11-Jun-94		11-Jun-94		00-Jan-00	
QC_CODE									DU		SA		SA		SA		SEDIMEN	
STUDY_ID									ESI		ESI		ESI		ESI		11-Jun-94	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
VOLATILE ORGANICS																		
1,1,1-Trichloroethane	UG/KG	3	2%			0	1	54	12	U	13	U	20	U	19	U	13	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	NYSDEC HHB	0	0	54	12	U	13	U	20	U	19	U	13	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	NYSDEC HHB	0	0	54	12	U	13	U	20	U	19	U	13	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	NYSDEC HHB	0	0	54	12	U	13	U	20	U	19	U	13	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Acetone	UG/KG	95	37%			0	20	54	12	U	13	U	20	U	24	U	13	U
Benzene	UG/KG	0	0%	1.512	BENTHIC-CHRONIC	0	0	54	12	U	13	U	20	U	19	U	13	U
Bromodichloromethane	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Bromoform	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Carbon disulfide	UG/KG	0	0%		-	0	0	54	12	U	13	U	20	U	19	U	13	U
Carbon tetrachloride	UG/KG	0	0%	32.4	NYSDEC HHB	0	0	54	12	U	13	U	20	U	19	U	13	U
Chlorobenzene	UG/KG	0	0%	189	BENTHIC-CHRONIC	0	0	54	12	U	13	U	20	U	19	U	13	U
Chlorodibromomethane	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Chloroethane	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Chloroform	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Ethyl benzene	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Methyl bromide	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Methyl butyl ketone	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Methyl chloride	UG/KG	17	4%			0	2	54	12	U	13	U	20	U	19	U	13	U
Methyl ethyl ketone	UG/KG	11	2%			0	1	54	12	U	13	U	20	U	19	U	13	U
Methyl isobutyl ketone	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Methylene chloride	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Styrene	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Tetrachloroethene	UG/KG	4	4%	43.2	NYSDEC HHB	0	2	54	12	U	13	U	20	U	19	U	13	U
Toluene	UG/KG	20	9%	2.646	BENTHIC-CHRONIC	5	5	54	12	U	13	U	20	U	19	U	13	U
Total Xylenes	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	12	U	13	U	20	U	19	U	13	U
Trichloroethene	UG/KG	18	7%	108	NYSDEC HHB	0	4	54	12	U	13	U	20	U	19	U	13	U
Vinyl chloride	UG/KG	0	0%	3.78	NYSDEC HHB	0	0	54	12	U	13	U	20	U	19	U	13	U
SEMI VOLATILE ORGANICS																		

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		ESI	
LOC_ID									SD12A-1		SD12A-1		SD12A-2		SD12A-3		ESI-12S	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SD12A-4	
SAMP_ID									SD12A-20		SD12A-1		SD12A-2		SD12A-3		SD12A-4	
DEPTH_TOP									0		0		0		0		SA	
DEPTH_BOT									0.2		0.2		0.2		0.2		0	
SAMP_DATE									22-Jun-94		22-Jun-94		11-Jun-94		11-Jun-94		00-Jan-00	
QC_CODE									DU		SA		SA		SA		SEDIMEN	
STUDY_ID									ESI		ESI		ESI		ESI		11-Jun-94	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
1,2-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	450	U	430	U	610	U	450	U	400	U
1,3-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	450	U	430	U	610	U	450	U	400	U
1,4-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	450	U	430	U	610	U	450	U	400	U
2,2'-oxybis(1-Chloropropan	UG/KG	0	0%			0	0	5	450	U	430	U	610	U	450	U	400	U
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	54	1100	U	1000	U	1500	U	1100	U	960	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	54	1100	U	1000	U	1500	U	1100	U	960	U
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
2-Chlorophenol	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
2-Methylnaphthalene	UG/KG	36	22%			0	12	54	450	U	430	U	610	U	450	U	400	U
2-Methylphenol	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
2-Nitroaniline	UG/KG	0	0%			0	0	54	1100	U	1000	U	1500	U	1100	U	960	U
2-Nitrophenol	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
3-Nitroaniline	UG/KG	0	0%			0	0	54	1100	U	1000	U	1500	U	1100	U	960	U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	54	1100	U	1000	U	1500	U	1100	U	960	U
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
4-Chloroaniline	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
4-Chlorophenyl phenyl eth	UG/KG	6	2%			0	1	54	450	U	430	U	610	U	450	U	400	U
4-Methylphenol	UG/KG	150	9%			0	5	54	450	U	430	U	610	U	450	U	400	U
4-Nitroaniline	UG/KG	0	0%			0	0	54	1100	U	1000	U	1500	U	1100	U	960	U
4-Nitrophenol	UG/KG	0	0%			0	0	54	1100	U	1000	U	1500	U	1100	U	960	U
Acenaphthene	UG/KG	500	41%	7560	BENTHIC-CHRONIC	0	22	54	450	U	430	U	610	U	450	U	400	U
Acenaphthylene	UG/KG	15	6%			0	3	54	450	U	430	U	610	U	450	U	400	U
Anthracene	UG/KG	830	48%	5.778	BENTHIC-CHRONIC	26	26	54	450	U	430	U	610	U	450	U	400	U
Benzo(a)anthracene	UG/KG	3100	72%	0.648	BENTHIC-CHRONIC	39	39	54	450	U	430	U	610	U	450	U	400	U
Benzo(a)pyrene	UG/KG	3300	76%	70.2	NYSDEC HHB	21	41	54	450	U	430	U	610	U	450	U	400	U
Benzo(b)fluoranthene	UG/KG	3200	81%	70.2	NYSDEC HHB	24	44	54	450	U	430	U	610	U	450	U	400	U
Benzo(ghi)perylene	UG/KG	2100	70%			0	38	54	450	U	430	U	610	U	450	U	400	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		ESI	
LOC_ID									SD12A-1		SD12A-1		SD12A-2		SD12A-3		ESI-12S	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SD12A-4	
SAMP_ID									SD12A-20		SD12A-1		SD12A-2		SD12A-3		SD12A-4	
DEPTH_TOP									0		0		0		0		SA	
DEPTH_BOT									0.2		0.2		0.2		0.2		0	
SAMP_DATE									22-Jun-94		22-Jun-94		11-Jun-94		11-Jun-94		00-Jan-00	
QC_CODE									DU		SA		SA		SA		SEDIMEN	
STUDY_ID									ESI		ESI		ESI		ESI		11-Jun-94	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Benzo(k)fluoranthene	UG/KG	2700	54%	70.2	NYSDEC HHB	15	29	54	450	U	430	U	610	U	450	U	400	U
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	49										
Bis(2-Ethylhexyl)phthalate	UG/KG	5000	13%	10800	BENTHIC-CHRONIC	0	7	54	450	U	430	U	610	U	450	U	400	U
Butylbenzylphthalate	UG/KG	42	17%			0	9	54	450	U	430	U	610	U	450	U	400	U
Carbazole	UG/KG	910	52%			0	28	54	450	U	430	U	610	U	450	U	400	U
Chrysene	UG/KG	3200	81%	70.2	NYSDEC HHB	23	44	54	450	U	430	U	610	U	450	U	400	U
Di-n-butylphthalate	UG/KG	53	28%			0	15	54	53	J	430	U	610	U	450	U	400	U
Di-n-octylphthalate	UG/KG	140	20%			0	11	54	450	U	430	U	610	U	450	U	400	U
Dibenz(a,h)anthracene	UG/KG	860	56%			0	30	54	450	U	430	U	610	U	450	U	400	U
Dibenzofuran	UG/KG	64	30%			0	16	54	450	U	430	U	610	U	450	U	400	U
Diethyl phthalate	UG/KG	23	13%			0	7	54	450	U	430	U	610	U	450	U	400	U
Dimethylphthalate	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
Fluoranthene	UG/KG	6200	87%	55080	BENTHIC-CHRONIC	0	47	54	450	U	430	U	610	U	26	J	400	U
Fluorene	UG/KG	340	37%	0.432	BENTHIC-CHRONIC	20	20	54	450	U	430	U	610	U	450	U	400	U
Hexachlorobenzene	UG/KG	6.2	2%	8.1	NYSDEC HHB	0	1	54	450	U	430	U	610	U	450	U	400	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
Hexachloroethane	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
Indeno(1,2,3-cd)pyrene	UG/KG	2000	70%	70.2	NYSDEC HHB	18	38	54	450	U	430	U	610	U	450	U	400	U
Isophorone	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
N-Nitrosodiphenylamine	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
Naphthalene	UG/KG	49	13%	1.62	BENTHIC-CHRONIC	7	7	54	450	U	430	U	610	U	450	U	400	U
Nitrobenzene	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
Pentachlorophenol	UG/KG	0	0%			0	0	54	1100	U	1000	U	1500	U	1100	U	960	U
Phenanthrene	UG/KG	3100	83%	6480	BENTHIC-CHRONIC	0	45	54	450	U	430	U	610	U	450	U	400	U
Phenol	UG/KG	0	0%			0	0	54	450	U	430	U	610	U	450	U	400	U
Pyrene	UG/KG	5400	85%	51.894	BENTHIC-CHRONIC	30	46	54	450	U	430	U	610	U	450	U	400	U
PESTICIDES/PCBS																		
4,4'-DDD	UG/KG	110	11%	0.54	NYSDEC HHB	6	6	54	4.5	U	4.3	U	6.1	U	4.5	U	4	U
4,4'-DDE	UG/KG	76	19%	0.54	NYSDEC HHB	10	10	54	4.5	U	4.3	U	6.1	U	4.5	U	4	U
4,4'-DDT	UG/KG	200	13%	0.54	NYSDEC HHB	7	7	54	4.5	U	4.3	U	6.1	U	4.5	U	4	U
Aldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	2.3	U	2.2	U	3.1	U	2.3	U	2	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		ESI	
LOC_ID									SD12A-1		SD12A-1		SD12A-2		SD12A-3		ESI-12S	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SD12A-4	
SAMP_ID									SD12A-20		SD12A-1		SD12A-2		SD12A-3		SD12A-4	
DEPTH_TOP									0		0		0		0		SA	
DEPTH_BOT									0.2		0.2		0.2		0.2		0	
SAMP_DATE									22-Jun-94		22-Jun-94		11-Jun-94		11-Jun-94		00-Jan-00	
QC_CODE									DU		SA		SA		SA		SEDIMEN	
STUDY_ID									ESI		ESI		ESI		ESI		11-Jun-94	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Alpha-BHC	UG/KG	0	0%			0	0	54	2.3	U	2.2	U	3.1	U	2.3	U	2	U
Alpha-Chlordane	UG/KG	3.2	4%			0	2	54	2.3	U	2.2	U	3.1	U	2.3	U	2	U
Aroclor-1016	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	45	U	43	U	61	U	45	U	40	U
Aroclor-1221	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	91	U	87	U	120	U	92	U	81	U
Aroclor-1232	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	45	U	43	U	61	U	45	U	40	U
Aroclor-1242	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	45	U	43	U	61	U	45	U	40	U
Aroclor-1248	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	45	U	43	U	61	U	45	U	40	U
Aroclor-1254	UG/KG	1200	7%	0.0432	NYSDEC HHB	4	4	54	45	U	43	U	61	U	45	U	40	U
Aroclor-1260	UG/KG	37	4%	0.0432	NYSDEC HHB	2	2	54	45	U	43	U	61	U	45	U	40	U
Beta-BHC	UG/KG	0	0%			0	0	54	2.3	U	2.2	U	3.1	U	2.3	U	2	U
Delta-BHC	UG/KG	0	0%			0	0	54	2.3	U	2.2	U	3.1	U	2.3	U	2	U
Dieldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	4.5	U	4.3	U	6.1	U	4.5	U	4	U
Endosulfan I	UG/KG	3.6	4%	1.62	NYSDEC HHB	2	2	54	2.3	U	2.2	U	3.1	U	2.3	U	2	U
Endosulfan II	UG/KG	0	0%	1.62	BENTHIC-CHRONIC	0	0	54	4.5	U	4.3	U	6.1	U	4.5	U	4	U
Endosulfan sulfate	UG/KG	0	0%			0	0	54	4.5	U	4.3	U	6.1	U	4.5	U	4	U
Endrin	UG/KG	5.6	2%	43.2	BENTHIC-CHRONIC	0	1	54	4.5	U	4.3	U	6.1	U	4.5	U	4	U
Endrin aldehyde	UG/KG	7.6	4%			0	2	54	4.5	U	4.3	U	6.1	U	4.5	U	4	U
Endrin ketone	UG/KG	22	4%			0	2	54	4.5	U	4.3	U	6.1	U	4.5	U	4	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	54	2.3	U	2.2	U	3.1	U	2.3	U	2	U
Gamma-Chlordane	UG/KG	0	0%			0	0	54	2.3	U	2.2	U	3.1	U	2.3	U	2	U
Heptachlor	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	2.3	U	2.2	U	3.1	U	2.3	U	2	U
Heptachlor epoxide	UG/KG	11	6%	0.0432	NYSDEC HHB	3	3	54	2.3	U	2.2	U	3.1	U	2.3	U	2	U
Methoxychlor	UG/KG	0	0%			0	0	54	23	U	22	U	31	U	23	U	20	U
Toxaphene	UG/KG	0	0%			0	0	54	230	U	220	U	310	U	230	U	200	U
METALS																		
Aluminum	MG/KG	38700	100%			0	54	54	16600		17400		11800		13600		11700	
Antimony	MG/KG	2.8	7%	2		1	4	54	0.34	UJ	0.34	UJ	0.3	UJ	0.23	UJ	0.29	UJ
Arsenic	MG/KG	19.1	96%	6		10	52	54	15.8		8		4		5.8		4.1	
Barium	MG/KG	885	100%			0	54	54	848		349		84.1		83.7		108	
Beryllium	MG/KG	1.7	87%			0	47	54	1.2	J	1	J	0.62	J	0.66	J	0.54	J
Cadmium	MG/KG	9	28%	0.6		8	15	54	3.8		1.5		0.62	J	0.65	J	0.9	
Calcium	MG/KG	280000	100%			0	54	54	5560		8060		8630		18200		29800	
Chromium	MG/KG	130	100%	26		9	54	54	26.3		25.2		19.1	J	22.2	J	18.9	J
Cobalt	MG/KG	75.3	80%			0	43	54	71.3		26.1		10.3	J	12.6		9.8	J
Copper	MG/KG	1160	100%	16		49	54	54	17.5		14.1		29.7		28.9		22.3	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		ESI	
LOC_ID									SD12A-1		SD12A-1		SD12A-2		SD12A-3		ESI-12S	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SD12A-4	
SAMP_ID									SD12A-20		SD12A-1		SD12A-2		SD12A-3		SD12A-4	
DEPTH_TOP									0		0		0		0		SA	
DEPTH_BOT									0.2		0.2		0.2		0.2		0	
SAMP_DATE									22-Jun-94		22-Jun-94		11-Jun-94		11-Jun-94		00-Jan-00	
QC_CODE									DU		SA		SA		SA		SEDIMEN	
STUDY_ID									ESI		ESI		ESI		ESI		11-Jun-94	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Cyanide	MG/KG	2.6	4%			0	2	54	0.62	U	0.57	U	0.87	U	0.67	U	0.6	U
Iron	MG/KG	85900	100%	20000		38	54	54	76200		46900		21800		30400		21600	
Lead	MG/KG	215	85%	31		8	46	54	22.9		21.4		18.8	R	15.6	R	14.2	UR
Magnesium	MG/KG	48100	100%			0	54	54	4450		5210		4900		7620		6300	
Manganese	MG/KG	14000	91%	460		25	49	54	13500	J	4200	J	340		[illegible]		408	
Mercury	MG/KG	1.7	33%	0.15		7	18	54	0.05	J	0.07		0.25		0.06	J	0.03	J
Nickel	MG/KG	126	100%	16		51	54	54	62.8		35.7		31.8		38.6		[illegible]	
Potassium	MG/KG	5500	100%			0	54	54	1810	J	1810	J	1450	J	1830	J	1490	J
Selenium	MG/KG	6.2	46%			0	25	54	4.3		3.3		0.82	J	0.89		0.63	J
Silver	MG/KG	1.5	9%	1		1	5	54	0.44	J	0.13	U	0.12	U	0.09	U	0.11	U
Sodium	MG/KG	1550	48%			0	26	54	87.1	J	96.2	J	136	J	139	J	47.9	J
Thallium	MG/KG	4	11%			0	6	54	0.49	U	0.49	U	0.44	U	0.33	U	0.42	U
Vanadium	MG/KG	70.3	100%			0	54	54	40.1		31.7		21.7		23.7		20	
Zinc	MG/KG	2650	91%	120		35	49	54	170		158		172		147		222	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-1		SD12-2		SD12-3		SD12-4		SD12-5	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12439		12002		12472		12438		12436	
DEPTH_TOP									0.3		1		0.2		0.2		0.2	
DEPTH_BOT									0.5		1.2		0.4		0.4		0.4	
SAMP_DATE									09-Nov-97		26-Oct-97		13-Dec-97		09-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
VOLATILE ORGANICS																		
1,1,1-Trichloroethane	UG/KG	3	2%			0	1	54	14	U	18	U	12	U	24	U	24	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	NYSDEC HHB	0	0	54	14	U	18	U	12	U	24	U	24	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	NYSDEC HHB	0	0	54	14	U	18	U	12	U	24	U	24	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	NYSDEC HHB	0	0	54	14	U	18	U	12	U	24	U	24	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Acetone	UG/KG	95	37%			0	20	54	10	J	25		20	J	24	U	81	
Benzene	UG/KG	0	0%	1.512	BENTHIC-CHRONIC	0	0	54	14	U	18	U	12	U	24	U	24	U
Bromodichloromethane	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Bromoform	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Carbon disulfide	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Carbon tetrachloride	UG/KG	0	0%	32.4	NYSDEC HHB	0	0	54	14	U	18	U	12	U	24	U	24	U
Chlorobenzene	UG/KG	0	0%	189	BENTHIC-CHRONIC	0	0	54	14	U	18	U	12	U	24	U	24	U
Chlorodibromomethane	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Chloroethane	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Chloroform	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Ethyl benzene	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Methyl bromide	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Methyl butyl ketone	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Methyl chloride	UG/KG	17	4%			0	2	54	14	U	18	U	12	U	24	U	11	J
Methyl ethyl ketone	UG/KG	11	2%			0	1	54	14	UJ	18	U	12	U	24	UJ	24	U
Methyl isobutyl ketone	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Methylene chloride	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Styrene	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Tetrachloroethene	UG/KG	4	4%	43.2	NYSDEC HHB	0	2	54	14	U	2	J	12	U	24	U	24	U
Toluene	UG/KG	20	9%	2.646	BENTHIC-CHRONIC	5	5	54	14	U	18	U	4	J	24	U	24	U
Total Xylenes	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	14	U	18	U	12	U	24	U	24	U
Trichloroethene	UG/KG	18	7%	108	NYSDEC HHB	0	4	54	14	U	10	J	12	U	24	U	24	U
Vinyl chloride	UG/KG	0	0%	3.78	NYSDEC HHB	0	0	54	14	U	18	U	12	U	24	U	24	U
SEMI VOLATILE ORGANICS																		

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-1		SD12-2		SD12-3		SD12-4		SD12-5	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12439		12002		12472		12438		12436	
DEPTH_TOP									0.3		1		0.2		0.2		0.2	
DEPTH_BOT									0.5		1.2		0.4		0.4		0.4	
SAMP_DATE									09-Nov-97		26-Oct-97		13-Dec-97		09-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
1,2-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	120	U	89	U	100	U	280	U	140	U
1,3-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	120	U	89	U	100	U	280	U	140	U
1,4-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	120	U	89	U	100	U	280	U	140	U
2,2'-oxybis(1-Chloropropan	UG/KG	0	0%			0	0	5										
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	54	280	U	220	U	250	U	670	U	330	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	54	120	UJ	89	U	100	U	280	UJ	140	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	54	280	U	220	U	250	U	670	U	330	U
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
2-Chlorophenol	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
2-Methylnaphthalene	UG/KG	36	22%			0	12	54	120	U	89	U	100	U	280	U	140	U
2-Methylphenol	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
2-Nitroaniline	UG/KG	0	0%			0	0	54	280	U	220	U	250	U	670	U	330	U
2-Nitrophenol	UG/KG	0	0%			0	0	54	120	U	89	U	100	UJ	280	U	140	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	54	120	UJ	89	UJ	100	U	280	UJ	140	U
3-Nitroaniline	UG/KG	0	0%			0	0	54	280	UJ	220	U	250	UJ	670	UJ	330	U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	54	280	U	220	U	250	U	670	U	330	U
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
4-Chloroaniline	UG/KG	0	0%			0	0	54	120	UJ	89	U	100	UJ	280	UJ	140	U
4-Chlorophenyl phenyl eth	UG/KG	6	2%			0	1	54	120	U	89	U	100	U	280	U	140	U
4-Methylphenol	UG/KG	150	9%			0	5	54	120	U	46	J	100	U	280	U	140	U
4-Nitroaniline	UG/KG	0	0%			0	0	54	280	UJ	220	UJ	250	UJ	670	UJ	330	U
4-Nitrophenol	UG/KG	0	0%			0	0	54	280	U	220	U	250	U	670	U	330	U
Acenaphthene	UG/KG	500	41%	7560	BENTHIC-CHRONIC	0	22	54	120	U	89	U	100	U	25	J	140	U
Acenaphthylene	UG/KG	15	6%			0	3	54	120	U	89	U	100	U	280	U	140	U
Anthracene	UG/KG	830	48%	5.778	BENTHIC-CHRONIC	26	26	54	8	J	89	U	100	U	87	J	140	U
Benzo(a)anthracene	UG/KG	3100	72%	0.648	BENTHIC-CHRONIC	39	39	54	48	J	89	U	[illegible]	J	480		12	J
Benzo(a)pyrene	UG/KG	3300	76%	70.2	NYSDEC HHB	21	41	54	53	J	89	U	70	J	750		14	J
Benzo(b)fluoranthene	UG/KG	3200	81%	70.2	NYSDEC HHB	24	44	54	64	J	9.6	J	110		770		17	J
Benzo(ghi)perylene	UG/KG	2100	70%			0	38	54	34	J	4.7	J	66	J	610		140	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-1		SD12-2		SD12-3		SD12-4		SD12-5	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12439		12002		12472		12438		12436	
DEPTH_TOP									0.3		1		0.2		0.2		0.2	
DEPTH_BOT									0.5		1.2		0.4		0.4		0.4	
SAMP_DATE									09-Nov-97		26-Oct-97		13-Dec-97		09-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Benzo(k)fluoranthene	UG/KG	2700	54%	70.2	NYSDEC HHB	15	29	54	50	J	89	U	71	J	850		16	J
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	49	120	U	89	U	100	U	280	U	140	U
Bis(2-Ethylhexyl)phthalate	UG/KG	5000	13%	10800	BENTHIC-CHRONIC	0	7	54	120	U	89	U	100	U	280	U	140	U
Butylbenzylphthalate	UG/KG	42	17%			0	9	54	120	U	89	U	100	U	280	U	140	U
Carbazole	UG/KG	910	52%			0	28	54	120	U	89	U	100	U	280	U	140	U
Chrysene	UG/KG	3200	81%	70.2	NYSDEC HHB	23	44	54	59	J	7.2	J	[illegible]	J	690		19	J
Di-n-butylphthalate	UG/KG	53	28%			0	15	54	120	U	89	U	5.9	J	280	U	140	U
Di-n-octylphthalate	UG/KG	140	20%			0	11	54	120	U	89	U	100	U	280	U	8.1	J
Dibenz(a,h)anthracene	UG/KG	860	56%			0	30	54	13	J	89	U	18	J	170	J	140	U
Dibenzofuran	UG/KG	64	30%			0	16	54	120	U	89	U	100	U	18	J	140	U
Diethyl phthalate	UG/KG	23	13%			0	7	54	120	U	89	U	8.5	J	280	U	140	U
Dimethylphthalate	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
Fluoranthene	UG/KG	6200	87%	55080	BENTHIC-CHRONIC	0	47	54	98	J	8.4	J	90	J	1300		30	J
Fluorene	UG/KG	340	37%	0.432	BENTHIC-CHRONIC	20	20	54	120	U	89	U	100	U	[illegible]	J	140	U
Hexachlorobenzene	UG/KG	6.2	2%	8.1	NYSDEC HHB	0	1	54	120	U	89	U	100	U	280	U	140	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	54	120	U	89	U	100	UJ	280	U	140	U
Hexachloroethane	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
Indeno(1,2,3-cd)pyrene	UG/KG	2000	70%	70.2	NYSDEC HHB	18	38	54	34	J	89	U	46	J	[illegible]		14	J
Isophorone	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
N-Nitrosodiphenylamine	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
Naphthalene	UG/KG	49	13%	1.62	BENTHIC-CHRONIC	7	7	54	120	U	89	U	100	U	280	U	140	U
Nitrobenzene	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
Pentachlorophenol	UG/KG	0	0%			0	0	54	280	U	220	U	250	U	670	U	330	U
Phenanthrene	UG/KG	3100	83%	6480	BENTHIC-CHRONIC	0	45	54	40	J	5.3	J	16	J	520		19	J
Phenol	UG/KG	0	0%			0	0	54	120	U	89	U	100	U	280	U	140	U
Pyrene	UG/KG	5400	85%	51.894	BENTHIC-CHRONIC	30	46	54	[illegible]	J	7.4	J	[illegible]	J	[illegible]		24	J
PESTICIDES/PCBS																		
4,4'-DDD	UG/KG	110	11%	0.54	NYSDEC HHB	6	6	54	5.9	U	4.4	U	5.2	U	8.2	U	6.9	U
4,4'-DDE	UG/KG	76	19%	0.54	NYSDEC HHB	10	10	54	5.9	U	4.4	U	5.2	U	8.2	U	6.9	U
4,4'-DDT	UG/KG	200	13%	0.54	NYSDEC HHB	7	7	54	5.9	U	4.4	U	5.2	U	8.2	U	6.9	U
Aldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	3	U	2.3	U	2.6	U	4.2	U	3.5	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-1		SD12-2		SD12-3		SD12-4		SD12-5	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12439		12002		12472		12438		12436	
DEPTH_TOP									0.3		1		0.2		0.2		0.2	
DEPTH_BOT									0.5		1.2		0.4		0.4		0.4	
SAMP_DATE									09-Nov-97		26-Oct-97		13-Dec-97		09-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Alpha-BHC	UG/KG	0	0%			0	0	54	3	U	2.3	U	2.6	U	4.2	U	3.5	U
Alpha-Chlordane	UG/KG	3.2	4%			0	2	54	3	U	2.3	U	2.6	U	4.2	U	3.5	U
Aroclor-1016	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	59	U	44	U	52	U	82	U	69	U
Aroclor-1221	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	120	U	90	U	100	U	170	U	140	U
Aroclor-1232	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	59	U	44	U	52	U	82	U	69	U
Aroclor-1242	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	59	U	44	U	52	U	82	U	69	U
Aroclor-1248	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	59	U	44	U	52	U	82	U	69	U
Aroclor-1254	UG/KG	1200	7%	0.0432	NYSDEC HHB	4	4	54	59	U	44	U	52	U	82	U	69	U
Aroclor-1260	UG/KG	37	4%	0.0432	NYSDEC HHB	2	2	54	59	U	44	U	52	U	82	U	69	U
Beta-BHC	UG/KG	0	0%			0	0	54	3	U	2.3	U	2.6	U	4.2	U	3.5	U
Delta-BHC	UG/KG	0	0%			0	0	54	3	U	2.3	U	2.6	U	4.2	U	3.5	U
Dieldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	5.9	U	4.4	U	5.2	U	8.2	U	6.9	U
Endosulfan I	UG/KG	3.6	4%	1.62	NYSDEC HHB	2	2	54	3	U	2.3	U	2.6	U	4.2	U	3.5	U
Endosulfan II	UG/KG	0	0%	1.62	BENTHIC-CHRONIC	0	0	54	5.9	U	4.4	U	5.2	U	8.2	U	6.9	U
Endosulfan sulfate	UG/KG	0	0%			0	0	54	5.9	U	4.4	U	5.2	U	8.2	U	6.9	U
Endrin	UG/KG	5.6	2%	43.2	BENTHIC-CHRONIC	0	1	54	5.9	U	4.4	U	5.2	U	8.2	U	6.9	U
Endrin aldehyde	UG/KG	7.6	4%			0	2	54	5.9	U	4.4	U	5.2	U	8.2	U	6.9	U
Endrin ketone	UG/KG	22	4%			0	2	54	5.9	U	4.4	U	5.2	U	8.2	U	6.9	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	54	3	U	2.3	U	2.6	U	4.2	U	3.5	U
Gamma-Chlordane	UG/KG	0	0%			0	0	54	3	U	2.3	U	2.6	U	4.2	U	3.5	U
Heptachlor	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	3	U	2.3	U	2.6	U	4.2	U	3.5	U
Heptachlor epoxide	UG/KG	11	6%	0.0432	NYSDEC HHB	3	3	54	3	U	2.3	U	2.6	U	4.2	U	3.5	U
Methoxychlor	UG/KG	0	0%			0	0	54	30	U	23	U	26	U	42	U	35	U
Toxaphene	UG/KG	0	0%			0	0	54	300	U	230	U	260	U	420	U	350	U
METALS																		
Aluminum	MG/KG	38700	100%			0	54	54	16700		10500	J	8300		12400		7830	
Antimony	MG/KG	2.8	7%	2		1	4	54	1.7	J	0.68	UJ	0.83	UJ	1.6	UJ	0.97	J
Arsenic	MG/KG	19.1	96%	6		10	52	54	[illegible]		4.4		3.9		3.9		3.7	
Barium	MG/KG	885	100%			0	54	54	95.5		64.1		47.8		114		63.9	
Beryllium	MG/KG	1.7	87%			0	47	54	0.58	J	0.1	U	0.3		0.28	J	0.19	
Cadmium	MG/KG	9	28%	0.6		8	15	54	0.1	U	0.09	U	0.07	U	0.14	U	0.08	U
Calcium	MG/KG	280000	100%			0	54	54	49000		40600	J	35000		63100		43800	
Chromium	MG/KG	130	100%	26		9	54	54	29		18.5	J	16.1		19.4		12.8	
Cobalt	MG/KG	75.3	80%			0	43	54	17		1.3	U	7.6		10.9		9.2	
Copper	MG/KG	1160	100%	16		49	54	54	45.6		22.9	J	13.8		26.8		18.2	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-1		SD12-2		SD12-3		SD12-4		SD12-5	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12439		12002		12472		12438		12436	
DEPTH_TOP									0.3		1		0.2		0.2		0.2	
DEPTH_BOT									0.5		1.2		0.4		0.4		0.4	
SAMP_DATE									09-Nov-97		26-Oct-97		13-Dec-97		09-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Cyanide	MG/KG	2.6	4%			0	2	54	0.91	U	0.67	UJ	0.9	UJ	1.5	U	1.2	U
Iron	MG/KG	85900	100%	20000		38	54	54	36200		21800	J			24100		16700	
Lead	MG/KG	215	85%	31		8	46	54	35.2		12.8	UJ	18.5		27.6		11.2	
Magnesium	MG/KG	48100	100%			0	54	54	10200		7350	J	9920		7540		8230	
Manganese	MG/KG	14000	91%	460		25	49	54	889		417	UJ	449	J	1150		648	
Mercury	MG/KG	1.7	33%	0.15		7	18	54	0.07	U	0.1	U	0.08	U	0.12	U	0.1	U
Nickel	MG/KG	126	100%	16		51	54	54	55.2		35	J	19.3		31.7		24.8	
Potassium	MG/KG	5500	100%			0	54	54	2160	J	1560		894		1910	J	986	J
Selenium	MG/KG	6.2	46%			0	25	54	1.6	U	0.94	UJ	1.6		2.1		1.3	UJ
Silver	MG/KG	1.5	9%	1		1	5	54	0.7	U	0.26	U	0.5	U	0.95	U	0.57	U
Sodium	MG/KG	1550	48%			0	26	54	207		115	U	214		275	U	166	U
Thallium	MG/KG	4	11%			0	6	54	2.1	U	1.4	U	2.5		2.8	U	1.7	U
Vanadium	MG/KG	70.3	100%			0	54	54	27.2		16.8		14.9		23.1		13	
Zinc	MG/KG	2650	91%	120		35	49	54	145	J	85.6	UJ	470		142	J	72.7	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-6		SD12-7		SD12-8		SD12-9		SD12-10	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12422		12421		12402		12437		12425	
DEPTH_TOP									0.2		0.3		0.2		0.3		0.2	
DEPTH_BOT									0.4		0.5		0.4		0.5		0.4	
SAMP_DATE									09-Nov-97		09-Nov-97		27-Oct-97		07-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
VOLATILE ORGANICS																		
1,1,1-Trichloroethane	UG/KG	3	2%			0	1	54	15	U	21	U	14	U	16	U	15	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	NYSDEC HHB	0	0	54	15	U	21	U	14	U	16	U	15	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	NYSDEC HHB	0	0	54	15	U	21	U	14	U	16	U	15	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	NYSDEC HHB	0	0	54	15	U	21	U	14	U	16	U	15	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Acetone	UG/KG	95	37%			0	20	54	31		25		14	U	16	U	10	J
Benzene	UG/KG	0	0%	1.512	BENTHIC-CHRONIC	0	0	54	15	U	21	U	14	U	16	U	15	U
Bromodichloromethane	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Bromoform	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Carbon disulfide	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Carbon tetrachloride	UG/KG	0	0%	32.4	NYSDEC HHB	0	0	54	15	U	21	U	14	U	16	U	15	U
Chlorobenzene	UG/KG	0	0%	189	BENTHIC-CHRONIC	0	0	54	15	U	21	U	14	U	16	U	15	U
Chlorodibromomethane	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Chloroethane	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Chloroform	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Ethyl benzene	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Methyl bromide	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Methyl butyl ketone	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Methyl chloride	UG/KG	17	4%			0	2	54	15	U	21	U	14	U	16	U	15	U
Methyl ethyl ketone	UG/KG	11	2%			0	1	54	15	UJ	21	UJ	14	U	16	U	15	U
Methyl isobutyl ketone	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Methylene chloride	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Styrene	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Tetrachloroethene	UG/KG	4	4%	43.2	NYSDEC HHB	0	2	54	15	U	21	U	14	U	16	U	15	U
Toluene	UG/KG	20	9%	2.646	BENTHIC-CHRONIC	5	5	54	15	U	21	U	14	U	16	U	15	U
Total Xylenes	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	15	U	21	U	14	U	16	U	15	U
Trichloroethene	UG/KG	18	7%	108	NYSDEC HHB	0	4	54	15	U	21	U	14	U	16	U	15	U
Vinyl chloride	UG/KG	0	0%	3.78	NYSDEC HHB	0	0	54	15	U	21	U	14	U	16	U	15	U
SEMI VOLATILE ORGANICS																		

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-6		SD12-7		SD12-8		SD12-9		SD12-10	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12422		12421		12402		12437		12425	
DEPTH_TOP									0.2		0.3		0.2		0.3		0.2	
DEPTH_BOT									0.4		0.5		0.4		0.5		0.4	
SAMP_DATE									09-Nov-97		09-Nov-97		27-Oct-97		07-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
1,2-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	110	U	87	U	130	U	120	U	100	U
1,3-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	110	U	87	U	130	U	120	U	100	U
1,4-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	110	U	87	U	130	U	120	U	100	U
2,2'-oxybis(1-Chloropropan	UG/KG	0	0%			0	0	5										
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	54	260	U	210	U	310	U	280	U	240	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	54	260	UJ	210	UJ	310	U	280	U	240	U
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
2-Chlorophenol	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
2-Methylnaphthalene	UG/KG	36	22%			0	12	54	110	U	87	U	130	U	120	U	100	U
2-Methylphenol	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
2-Nitroaniline	UG/KG	0	0%			0	0	54	260	U	210	U	310	U	280	U	240	U
2-Nitrophenol	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	54	110	UJ	87	UJ	130	UJ	120	U	100	U
3-Nitroaniline	UG/KG	0	0%			0	0	54	260	UJ	210	UJ	310	U	280	U	240	U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	54	260	U	210	U	310	U	280	U	240	U
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
4-Chloroaniline	UG/KG	0	0%			0	0	54	110	UJ	87	UJ	130	UJ	120	U	100	U
4-Chlorophenyl phenyl eth	UG/KG	6	2%			0	1	54	110	U	87	U	130	U	120	U	100	U
4-Methylphenol	UG/KG	150	9%			0	5	54	110	U	87	U	130	U	120	U	100	U
4-Nitroaniline	UG/KG	0	0%			0	0	54	260	UJ	210	UJ	310	U	280	U	240	U
4-Nitrophenol	UG/KG	0	0%			0	0	54	260	U	210	U	310	U	280	U	240	U
Acenaphthene	UG/KG	500	41%	7560	BENTHIC-CHRONIC	0	22	54	110	U	87	U	130	U	120	U	100	U
Acenaphthylene	UG/KG	15	6%			0	3	54	110	U	87	U	7.5	J	120	U	100	U
Anthracene	UG/KG	830	48%	5.778	BENTHIC-CHRONIC	26	26	54	110	U	87	U	11	J	120	U	100	U
Benzo(a)anthracene	UG/KG	3100	72%	0.648	BENTHIC-CHRONIC	39	39	54	15	J	87	U	65	J	13	J	22	J
Benzo(a)pyrene	UG/KG	3300	76%	70.2	NYSDEC HHB	21	41	54	14	J	87	U	92	J	20	J	20	J
Benzo(b)fluoranthene	UG/KG	3200	81%	70.2	NYSDEC HHB	24	44	54	33	J	87	U	70	J	46	J	56	J
Benzo(ghi)perylene	UG/KG	2100	70%			0	38	54	19	J	87	U	81	J	21	J	21	J

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY																		
LOC_ID									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
MATRIX									SD12-6		SD12-7		SD12-8		SD12-9		SD12-10	
SAMP_ID									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
DEPTH_TOP									12422		12421		12402		12437		12425	
DEPTH_BOT									0.2		0.3		0.2		0.3		0.2	
SAMP_DATE									0.4		0.5		0.4		0.5		0.4	
QC_CODE									09-Nov-97		09-Nov-97		27-Oct-97		07-Nov-97		07-Nov-97	
STUDY_ID									SA		SA		SA		SA		SA	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
Benzo(k)fluoranthene	UG/KG	2700	54%	70.2	NYSDEC HHB	15	29	54	11	J	87	U	[illegible]	J	120	U	100	U
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	49	110	U	87	U	130	U	120	U	100	U
Bis(2-Ethylhexyl)phthalate	UG/KG	5000	13%	10800	BENTHIC-CHRONIC	0	7	54	110	U	87	U	130	U	120		100	U
Butylbenzylphthalate	UG/KG	42	17%			0	9	54	110	U	87	U	130	U	120	U	100	U
Carbazole	UG/KG	910	52%			0	28	54	110	U	87	U	19	J	9.4	J	13	J
Chrysene	UG/KG	3200	81%	70.2	NYSDEC HHB	23	44	54	28	J	87	U	91	J	32	J	49	J
Di-n-butylphthalate	UG/KG	53	28%			0	15	54	110	U	87	U	130	U	120	U	100	U
Di-n-octylphthalate	UG/KG	140	20%			0	11	54	110	U	87	U	130	U	120	U	100	U
Dibenz(a,h)anthracene	UG/KG	860	56%			0	30	54	110	U	87	U	27	J	120	U	100	U
Dibenzofuran	UG/KG	64	30%			0	16	54	110	U	87	U	130	U	120	U	100	U
Diethyl phthalate	UG/KG	23	13%			0	7	54	110	U	87	U	130	U	13	J	9.2	J
Dimethylphthalate	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
Fluoranthene	UG/KG	6200	87%	55080	BENTHIC-CHRONIC	0	47	54	35	J	5.2	J	110	J	42	J	78	J
Fluorene	UG/KG	340	37%	0.432	BENTHIC-CHRONIC	20	20	54	110	U	87	U	130	U	120	U	100	U
Hexachlorobenzene	UG/KG	6.2	2%	8.1	NYSDEC HHB	0	1	54	110	U	87	U	130	U	120	U	100	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
Hexachloroethane	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
Indeno(1,2,3-cd)pyrene	UG/KG	2000	70%	70.2	NYSDEC HHB	18	38	54	11	J	87	U	69	J	12	J	17	J
Isophorone	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
N-Nitrosodiphenylamine	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
Naphthalene	UG/KG	49	13%	1.62	BENTHIC-CHRONIC	7	7	54	110	U	87	U	130	U	120	U	100	U
Nitrobenzene	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
Pentachlorophenol	UG/KG	0	0%			0	0	54	260	U	210	U	310	U	280	U	240	U
Phenanthrene	UG/KG	3100	83%	6480	BENTHIC-CHRONIC	0	45	54	17	J	87	U	57	J	18	J	32	J
Phenol	UG/KG	0	0%			0	0	54	110	U	87	U	130	U	120	U	100	U
Pyrene	UG/KG	5400	85%	51.894	BENTHIC-CHRONIC	30	46	54	30	J	4.9	J	130		36	J	[illegible]	J
PESTICIDES/PCBS																		
4,4'-DDD	UG/KG	110	11%	0.54	NYSDEC HHB	6	6	54	5.4	U	4.3	U	6.3	U	5.9	U	5	U
4,4'-DDE	UG/KG	76	19%	0.54	NYSDEC HHB	10	10	54	5.4	U	4.3	U	6.3	U	5.9	U	3.3	J
4,4'-DDT	UG/KG	200	13%	0.54	NYSDEC HHB	7	7	54	5.4	U	4.3	U	6.3	U	5.9	U	5	U
Aldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	2.8	U	2.2	U	3.3	U	3	U	2.6	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-6		SD12-7		SD12-8		SD12-9		SD12-10	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12422		12421		12402		12437		12425	
DEPTH_TOP									0.2		0.3		0.2		0.3		0.2	
DEPTH_BOT									0.4		0.5		0.4		0.5		0.4	
SAMP_DATE									09-Nov-97		09-Nov-97		27-Oct-97		07-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Alpha-BHC	UG/KG	0	0%			0	0	54	2.8	U	2.2	U	3.3	U	3	U	2.6	U
Alpha-Chlordane	UG/KG	3.2	4%			0	2	54	2.8	U	2.2	U	3.3	U	3	U	2.6	U
Aroclor-1016	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	54	U	43	U	63	U	59	U	50	U
Aroclor-1221	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	110	U	88	U	130	U	120	U	100	U
Aroclor-1232	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	54	U	43	U	63	U	59	U	50	U
Aroclor-1242	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	54	U	43	U	63	U	59	U	50	U
Aroclor-1248	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	54	U	43	U	63	U	59	U	50	U
Aroclor-1254	UG/KG	1200	7%	0.0432	NYSDEC HHB	4	4	54	54	U	43	U	50	J	59	U	50	U
Aroclor-1260	UG/KG	37	4%	0.0432	NYSDEC HHB	2	2	54	54	U	43	U	63	U	59	U	50	U
Beta-BHC	UG/KG	0	0%			0	0	54	2.8	U	2.2	U	3.3	U	3	U	2.6	U
Delta-BHC	UG/KG	0	0%			0	0	54	2.8	U	2.2	U	3.3	U	3	U	2.6	U
Dieldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	5.4	U	4.3	U	6.3	U	5.9	U	5	U
Endosulfan I	UG/KG	3.6	4%	1.62	NYSDEC HHB	2	2	54	2.8	U	2.2	U	3.3	U	3	U	2.6	U
Endosulfan II	UG/KG	0	0%	1.62	BENTHIC-CHRONIC	0	0	54	5.4	U	4.3	U	6.3	U	5.9	U	5	U
Endosulfan sulfate	UG/KG	0	0%			0	0	54	5.4	U	4.3	U	6.3	U	5.9	U	5	U
Endrin	UG/KG	5.6	2%	43.2	BENTHIC-CHRONIC	0	1	54	5.4	U	4.3	U	6.3	U	5.9	U	5	U
Endrin aldehyde	UG/KG	7.6	4%			0	2	54	5.4	U	4.3	U	6.3	U	5.9	U	5	U
Endrin ketone	UG/KG	22	4%			0	2	54	5.4	U	4.3	U	6.3	U	5.9	U	5	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	54	2.8	U	2.2	U	3.3	U	3	U	2.6	U
Gamma-Chlordane	UG/KG	0	0%			0	0	54	2.8	U	2.2	U	3.3	U	3	U	2.6	U
Heptachlor	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	2.8	U	2.2	U	3.3	U	3	U	2.6	U
Heptachlor epoxide	UG/KG	11	6%	0.0432	NYSDEC HHB	3	3	54	2.8	U	2.2	U	3.3	U	3	U	2.6	U
Methoxychlor	UG/KG	0	0%			0	0	54	28	U	22	U	33	U	30	U	26	U
Toxaphene	UG/KG	0	0%			0	0	54	280	U	220	U	330	U	300	U	260	U
METALS																		
Aluminum	MG/KG	38700	100%			0	54	54	9050		13900		13800	J	13300		11500	
Antimony	MG/KG	2.8	7%	2		1	4	54	0.81	UJ	0.77	UJ	0.85	UJ	1.2	UJ	0.88	UJ
Arsenic	MG/KG	19.1	96%	6		10	52	54	4.1		4.6		4.5		5.8		4.2	
Barium	MG/KG	885	100%			0	54	54	55.3		64.2		78.8		83.2		65	
Beryllium	MG/KG	1.7	87%			0	47	54	0.34	J	0.49	J	0.1	U	0.61		0.48	
Cadmium	MG/KG	9	28%	0.6		8	15	54	0.07	U	0.07	U	0.12	U	0.1	U	0.08	U
Calcium	MG/KG	280000	100%			0	54	54	138000		12900		49200	J	71800		90200	
Chromium	MG/KG	130	100%	26		9	54	54	13.4		24.1		22.1	J	19.5		17.3	
Cobalt	MG/KG	75.3	80%			0	43	54	11.3		15.4		1.3	U	9.3		8.8	
Copper	MG/KG	1160	100%	16		49	54	54	19.2		21.4		29.6	J	29.2		22.9	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-6		SD12-7		SD12-8		SD12-9		SD12-10	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12422		12421		12402		12437		12425	
DEPTH_TOP									0.2		0.3		0.2		0.3		0.2	
DEPTH_BOT									0.4		0.5		0.4		0.5		0.4	
SAMP_DATE									09-Nov-97		09-Nov-97		27-Oct-97		07-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Cyanide	MG/KG	2.6	4%			0	2	54	0.89	U	0.74	U	1	UJ	1	U	0.84	U
Iron	MG/KG	85900	100%	20000		38	54	54	15800		33900		22600	J	[illegible]		20200	
Lead	MG/KG	215	85%	31		8	46	54	13.2		12.6		20.3	UJ	17.6		41.5	
Magnesium	MG/KG	48100	100%			0	54	54	12100		5800		11700	J	10700		8420	
Manganese	MG/KG	14000	91%	460		25	49	54	393		280		394	UJ	240		356	
Mercury	MG/KG	1.7	33%	0.15		7	18	54	0.07	U	0.06	U	0.15		0.07	U	0.08	U
Nickel	MG/KG	126	100%	16		51	54	54	24.8		44.8		39	J	25.9		[illegible]	
Potassium	MG/KG	5500	100%			0	54	54	1020	J	903	J	2520		2350	J	1690	J
Selenium	MG/KG	6.2	46%			0	25	54	1.1	U	1	U	1.2	UJ	1.6	UJ	1.9	J
Silver	MG/KG	1.5	9%	1		1	5	54	0.48	U	0.46	U	0.32	U	0.72	U	0.53	U
Sodium	MG/KG	1550	48%			0	26	54	153		133	U	126	U	209	U	153	U
Thallium	MG/KG	4	11%			0	6	54	1.4	U	1.4	U	1.8	U	2.2	U	1.6	U
Vanadium	MG/KG	70.3	100%			0	54	54	17.1		19.8		28.9		23.6		21.4	
Zinc	MG/KG	2650	91%	120		35	49	54	72.1	J	136	J	96.3	UJ	286		179	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-11		SD12-12		SD12-13		SD12-14		SD12-15	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12473		12442		12441		12435		12434	
DEPTH_TOP									0.2		0.3		0.3		0.5		0.4	
DEPTH_BOT									0.4		0.5		0.5		0.7		0.6	
SAMP_DATE									13-Dec-97		09-Nov-97		09-Nov-97		09-Nov-97		09-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
VOLATILE ORGANICS																		
1,1,1-Trichloroethane	UG/KG	3	2%			0	1	54	16	U	16	U	22	U	12	U	14	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	NYSDEC HHB	0	0	54	16	U	16	U	22	U	12	U	14	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	NYSDEC HHB	0	0	54	16	U	16	U	22	U	12	U	14	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	NYSDEC HHB	0	0	54	16	U	16	U	22	U	12	U	14	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Acetone	UG/KG	95	37%			0	20	54	27	J	34		22	U	12	U	14	U
Benzene	UG/KG	0	0%	1.512	BENTHIC-CHRONIC	0	0	54	16	U	16	U	22	U	12	U	14	U
Bromodichloromethane	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Bromoform	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Carbon disulfide	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Carbon tetrachloride	UG/KG	0	0%	32.4	NYSDEC HHB	0	0	54	16	U	16	U	22	U	12	U	14	U
Chlorobenzene	UG/KG	0	0%	189	BENTHIC-CHRONIC	0	0	54	16	U	16	U	22	U	12	U	14	U
Chlorodibromomethane	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Chloroethane	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Chloroform	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Ethyl benzene	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Methyl bromide	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Methyl butyl ketone	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Methyl chloride	UG/KG	17	4%			0	2	54	16	U	16	U	22	U	12	U	14	U
Methyl ethyl ketone	UG/KG	11	2%			0	1	54	16	U	16	U	22	UJ	12	UJ	14	UJ
Methyl isobutyl ketone	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Methylene chloride	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Styrene	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Tetrachloroethene	UG/KG	4	4%	43.2	NYSDEC HHB	0	2	54	16	U	16	U	22	U	12	U	14	U
Toluene	UG/KG	20	9%	2.646	BENTHIC-CHRONIC	5	5	54	9	J	16	U	22	U	12	U	14	U
Total Xylenes	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	16	U	16	U	22	U	12	U	14	U
Trichloroethene	UG/KG	18	7%	108	NYSDEC HHB	0	4	54	16	U	16	U	22	U	12	U	14	U
Vinyl chloride	UG/KG	0	0%	3.78	NYSDEC HHB	0	0	54	16	U	16	U	22	U	12	U	14	U
SEMI VOLATILE ORGANICS																		

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-11		SD12-12		SD12-13		SD12-14		SD12-15	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12473		12442		12441		12435		12434	
DEPTH_TOP									0.2		0.3		0.3		0.5		0.4	
DEPTH_BOT									0.4		0.5		0.5		0.7		0.6	
SAMP_DATE									13-Dec-97		09-Nov-97		09-Nov-97		09-Nov-97		09-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
1,2-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	190	U	110	U	100	U	86	U	100	U
1,3-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	190	U	110	U	100	U	86	U	100	U
1,4-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	190	U	110	U	100	U	86	U	100	U
2,2'-oxybis(1-Chloropropan	UG/KG	0	0%			0	0	5										
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	54	470	U	280	U	250	U	210	U	250	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	UJ	100	UJ
2,4-Dimethylphenol	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	54	470	U	280	U	250	UJ	210	U	250	U
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
2-Chlorophenol	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
2-Methylnaphthalene	UG/KG	36	22%			0	12	54	190	U	6.3	J	100	U	86	U	100	U
2-Methylphenol	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
2-Nitroaniline	UG/KG	0	0%			0	0	54	470	U	280	U	250	U	210	U	250	U
2-Nitrophenol	UG/KG	0	0%			0	0	54	190	UJ	110	U	100	U	86	U	100	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	54	190	U	110	U	100	UJ	86	UJ	100	UJ
3-Nitroaniline	UG/KG	0	0%			0	0	54	470	UJ	280	U	250	UJ	210	UJ	250	UJ
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	54	470	U	280	U	250	U	210	U	250	U
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
4-Chloroaniline	UG/KG	0	0%			0	0	54	190	UJ	110	U	100	UJ	86	UJ	100	UJ
4-Chlorophenyl phenyl eth	UG/KG	6	2%			0	1	54	190	U	110	U	6	J	86	U	100	U
4-Methylphenol	UG/KG	150	9%			0	5	54	190	U	110	U	100	U	86	U	100	U
4-Nitroaniline	UG/KG	0	0%			0	0	54	470	UJ	280	U	250	UJ	210	UJ	250	UJ
4-Nitrophenol	UG/KG	0	0%			0	0	54	470	U	280	U	250	U	210	U	250	U
Acenaphthene	UG/KG	500	41%	7560	BENTHIC-CHRONIC	0	22	54	190	U	110	U	6.4	J	86	U	100	U
Acenaphthylene	UG/KG	15	6%			0	3	54	190	U	110	U	100	U	86	U	100	U
Anthracene	UG/KG	830	48%	5.778	BENTHIC-CHRONIC	26	26	54	190	U	6.9	J	6.4	J	86	U	100	U
Benzo(a)anthracene	UG/KG	3100	72%	0.648	BENTHIC-CHRONIC	39	39	54	[illegible]	J	25	J	14	J	86	U	100	U
Benzo(a)pyrene	UG/KG	3300	76%	70.2	NYSDEC HHB	21	41	54	69	J	28	J	16	J	86	U	100	U
Benzo(b)fluoranthene	UG/KG	3200	81%	70.2	NYSDEC HHB	24	44	54	160	J	47	J	18	J	12	J	100	U
Benzo(ghi)perylene	UG/KG	2100	70%			0	38	54	71	J	32	J	26	J	86	U	100	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-11		SD12-12		SD12-13		SD12-14		SD12-15	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12473		12442		12441		12435		12434	
DEPTH_TOP									0.2		0.3		0.3		0.5		0.4	
DEPTH_BOT									0.4		0.5		0.5		0.7		0.6	
SAMP_DATE									13-Dec-97		09-Nov-97		09-Nov-97		09-Nov-97		09-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Benzo(k)fluoranthene	UG/KG	2700	54%	70.2	NYSDEC HHB	15	29	54	190	U	22	J	21	J	86	U	100	U
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	49	190	U	110	U	100	U	86	U	100	U
Bis(2-Ethylhexyl)phthalate	UG/KG	5000	13%	10800	BENTHIC-CHRONIC	0	7	54	190	U	110	U	100	U	86	U	100	U
Butylbenzylphthalate	UG/KG	42	17%			0	9	54	12	J	9	J	11	J	86	U	100	U
Carbazole	UG/KG	910	52%			0	28	54	24	J	20	J	100	U	86	U	100	U
Chrysene	UG/KG	3200	81%	70.2	NYSDEC HHB	23	44	54	58	J	45	J	19	J	86	U	100	U
Di-n-butylphthalate	UG/KG	53	28%			0	15	54	190	U	10	J	100	U	86	U	100	U
Di-n-octylphthalate	UG/KG	140	20%			0	11	54	190	U	110	U	7.5	J	86	U	100	U
Dibenz(a,h)anthracene	UG/KG	860	56%			0	30	54	190	U	11	J	12	J	86	U	100	U
Dibenzofuran	UG/KG	64	30%			0	16	54	190	U	110	U	100	U	86	U	100	U
Diethyl phthalate	UG/KG	23	13%			0	7	54	190	U	110	U	100	U	86	U	100	U
Dimethylphthalate	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
Fluoranthene	UG/KG	6200	87%	55080	BENTHIC-CHRONIC	0	47	54	150	J	55	J	17	J	6.5	J	100	U
Fluorene	UG/KG	340	37%	0.432	BENTHIC-CHRONIC	20	20	54	190	U	110	U	6.6	J	86	U	100	U
Hexachlorobenzene	UG/KG	6.2	2%	8.1	NYSDEC HHB	0	1	54	190	U	110	U	6.2	J	86	U	100	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	54	190	UJ	110	U	100	U	86	U	100	U
Hexachloroethane	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
Indeno(1,2,3-cd)pyrene	UG/KG	2000	70%	70.2	NYSDEC HHB	18	38	54	46	J	23	J	14	J	86	U	100	U
Isophorone	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
N-Nitrosodiphenylamine	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
Naphthalene	UG/KG	49	13%	1.62	BENTHIC-CHRONIC	7	7	54	190	U	110	U	100	U	86	U	100	U
Nitrobenzene	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
Pentachlorophenol	UG/KG	0	0%			0	0	54	470	U	280	U	250	U	210	U	250	U
Phenanthrene	UG/KG	3100	83%	6480	BENTHIC-CHRONIC	0	45	54	64	J	33	J	12	J	5.7	J	100	U
Phenol	UG/KG	0	0%			0	0	54	190	U	110	U	100	U	86	U	100	U
Pyrene	UG/KG	5400	85%	51.894	BENTHIC-CHRONIC	30	46	54	100	J	45	J	18	J	6	J	100	U
PESTICIDES/PCBS																		
4,4'-DDD	UG/KG	110	11%	0.54	NYSDEC HHB	6	6	54	4.8	U	5.7	U	5.2	U	4.3	U	5.1	U
4,4'-DDE	UG/KG	76	19%	0.54	NYSDEC HHB	10	10	54	3.5	J	5.7	U	5.2	U	4.3	U	5.1	U
4,4'-DDT	UG/KG	200	13%	0.54	NYSDEC HHB	7	7	54	4.8	U	5.7	U	5.2	U	4.3	U	5.1	U
Aldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	2.5	U	2.9	U	2.7	U	2.2	U	2.6	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-11		SD12-12		SD12-13		SD12-14		SD12-15	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12473		12442		12441		12435		12434	
DEPTH_TOP									0.2		0.3		0.3		0.5		0.4	
DEPTH_BOT									0.4		0.5		0.5		0.7		0.6	
SAMP_DATE									13-Dec-97		09-Nov-97		09-Nov-97		09-Nov-97		09-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Alpha-BHC	UG/KG	0	0%			0	0	54	2.5	U	2.9	U	2.7	U	2.2	U	2.6	U
Alpha-Chlordane	UG/KG	3.2	4%			0	2	54	2.5	U	2.9	U	2.7	U	2.2	U	2.6	U
Aroclor-1016	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	48	U	57	U	52	U	43	U	51	U
Aroclor-1221	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	98	U	120	U	110	U	87	U	100	U
Aroclor-1232	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	48	U	57	U	52	U	43	U	51	U
Aroclor-1242	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	48	U	57	U	52	U	43	U	51	U
Aroclor-1248	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	48	U	57	U	52	U	43	U	51	U
Aroclor-1254	UG/KG	1200	7%	0.0432	NYSDEC HHB	4	4	54	48	U	57	U	52	U	43	U	51	U
Aroclor-1260	UG/KG	37	4%	0.0432	NYSDEC HHB	2	2	54	48	U	57	U	52	U	43	U	51	U
Beta-BHC	UG/KG	0	0%			0	0	54	2.5	U	2.9	U	2.7	U	2.2	U	2.6	U
Delta-BHC	UG/KG	0	0%			0	0	54	2.5	U	2.9	U	2.7	U	2.2	U	2.6	U
Dieldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	4.8	U	5.7	U	5.2	U	4.3	U	5.1	U
Endosulfan I	UG/KG	3.6	4%	1.62	NYSDEC HHB	2	2	54	2.5	U	2.9	U	2.7	U	2.2	U	2.6	U
Endosulfan II	UG/KG	0	0%	1.62	BENTHIC-CHRONIC	0	0	54	4.8	U	5.7	U	5.2	U	4.3	U	5.1	U
Endosulfan sulfate	UG/KG	0	0%			0	0	54	4.8	U	5.7	U	5.2	U	4.3	U	5.1	U
Endrin	UG/KG	5.6	2%	43.2	BENTHIC-CHRONIC	0	1	54	4.8	U	5.7	U	5.2	U	4.3	U	5.1	U
Endrin aldehyde	UG/KG	7.6	4%			0	2	54	4.8	U	5.7	U	5.2	U	4.3	U	5.1	U
Endrin ketone	UG/KG	22	4%			0	2	54	4.8	U	5.7	U	5.2	U	4.3	U	5.1	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	54	2.5	U	2.9	U	2.7	U	2.2	U	2.6	U
Gamma-Chlordane	UG/KG	0	0%			0	0	54	2.5	U	2.9	U	2.7	U	2.2	U	2.6	U
Heptachlor	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	2.5	U	2.9	U	2.7	U	2.2	U	2.6	U
Heptachlor epoxide	UG/KG	11	6%	0.0432	NYSDEC HHB	3	3	54	2.5	U	2.9	U	2.7	U	2.2	U	2.6	U
Methoxychlor	UG/KG	0	0%			0	0	54	25	U	29	U	27	U	22	U	26	U
Toxaphene	UG/KG	0	0%			0	0	54	250	U	290	U	270	U	220	U	260	U
METALS																		
Aluminum	MG/KG	38700	100%			0	54	54	5930		10900		13700		4290		16200	
Antimony	MG/KG	2.8	7%	2		1	4	54	0.88	UJ	1.1	UJ	1	UJ	0.69	UJ	0.83	UJ
Arsenic	MG/KG	19.1	96%	6		10	52	54	3.6		3.1		6.5		5.8		16.9	
Barium	MG/KG	885	100%			0	54	54	38.9		65.8		64.2		18.5		885	
Beryllium	MG/KG	1.7	87%			0	47	54	0.18		0.5		0.61	J	0.18	J	0.02	UJ
Cadmium	MG/KG	9	28%	0.6		8	15	54	0.08	U	0.09	U	0.09	U	0.06	U	0.07	U
Calcium	MG/KG	280000	100%			0	54	54	136000		118000		33800		160000		5080	
Chromium	MG/KG	130	100%	26		9	54	54	11.5		17.4		22.7		8.7		25.7	
Cobalt	MG/KG	75.3	80%			0	43	54	7.7		12.2		13.2		9.3		75.3	
Copper	MG/KG	1160	100%	16		49	54	54	16.1		21.1		19.5		24		18.6	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-11		SD12-12		SD12-13		SD12-14		SD12-15	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12473		12442		12441		12435		12434	
DEPTH_TOP									0.2		0.3		0.3		0.5		0.4	
DEPTH_BOT									0.4		0.5		0.5		0.7		0.6	
SAMP_DATE									13-Dec-97		09-Nov-97		09-Nov-97		09-Nov-97		09-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Cyanide	MG/KG	2.6	4%			0	2	54	0.78	UJ	0.97	UJ	0.87	U	0.78		0.82	U
Iron	MG/KG	85900	100%	20000		38	54	54	14200		20200		30600		22800		[illegible]	
Lead	MG/KG	215	85%	31		8	46	54	[illegible]		14.1	J	11		21.3		30.8	
Magnesium	MG/KG	48100	100%			0	54	54	26200		11100		7900		25300		4360	
Manganese	MG/KG	14000	91%	460		25	49	54	828	J	433		467		384		14000	
Mercury	MG/KG	1.7	33%	0.15		7	18	54	0.07	U	0.07	U	0.06	U	0.04	U	0.07	U
Nickel	MG/KG	126	100%	16		51	54	54	17.6		31.6		35.4		36.4		[illegible]	
Potassium	MG/KG	5500	100%			0	54	54	936		1600		1200	J	875	J	1840	J
Selenium	MG/KG	6.2	46%			0	25	54	1.4		2.4		1.4	U	0.93	U	6.2	
Silver	MG/KG	1.5	9%	1		1	5	54	0.53	U	0.63	U	0.62	U	0.42	U	0.5	U
Sodium	MG/KG	1550	48%			0	26	54	152	U	263		178	U	229		144	U
Thallium	MG/KG	4	11%			0	6	54	1.6	U	1.9	U	1.8	U	1.2	U	1.5	U
Vanadium	MG/KG	70.3	100%			0	54	54	24.1		24.4		24		11.2		39.9	
Zinc	MG/KG	2650	91%	120		35	49	54	71.2		82		74.8	J	560	J	192	J

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-16		SD12-17		SD12-18		SD12-19		SD12-20A	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12428		12432		12452		12440		12445	
DEPTH_TOP									0.3		0.2		0.2		0.2		0.3	
DEPTH_BOT									0.5		0.4		0.4		0.4		0.5	
SAMP_DATE									08-Nov-97		08-Nov-97		10-Nov-97		06-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
VOLATILE ORGANICS																		
1,1,1-Trichloroethane	UG/KG	3	2%			0	1	54	15	U	31	U	18	U	17	U	16	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	NYSDEC HHB	0	0	54	15	U	31	U	18	U	17	U	16	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	NYSDEC HHB	0	0	54	15	U	31	U	18	U	17	U	16	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	NYSDEC HHB	0	0	54	15	U	31	U	18	U	17	U	16	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
Acetone	UG/KG	95	37%			0	20	54	15	U	31	U	18	U	17	UJ	16	UJ
Benzene	UG/KG	0	0%	1.512	BENTHIC-CHRONIC	0	0	54	15	U	31	U	18	UJ	17	U	16	U
Bromodichloromethane	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
Bromoform	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
Carbon disulfide	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
Carbon tetrachloride	UG/KG	0	0%	32.4	NYSDEC HHB	0	0	54	15	U	31	U	18	UJ	17	U	16	U
Chlorobenzene	UG/KG	0	0%	189	BENTHIC-CHRONIC	0	0	54	15	U	31	U	18	U	17	U	16	U
Chlorodibromomethane	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
Chloroethane	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
Chloroform	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	15	U	31	U	18	UJ	17	U	16	U
Ethyl benzene	UG/KG	0	0%			0	0	54	15	U	31	U	18	UJ	17	U	16	U
Methyl bromide	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
Methyl butyl ketone	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
Methyl chloride	UG/KG	17	4%			0	2	54	15	U	31	U	18	U	17	U	16	U
Methyl ethyl ketone	UG/KG	11	2%			0	1	54	15	U	31	U	18	U	17	U	16	U
Methyl isobutyl ketone	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
Methylene chloride	UG/KG	0	0%			0	0	54	15	U	31	U	18	U	17	U	16	U
Styrene	UG/KG	0	0%			0	0	54	15	U	31	U	18	UJ	17	U	16	U
Tetrachloroethene	UG/KG	4	4%	43.2	NYSDEC HHB	0	2	54	15	U	31	U	18	UJ	17	U	16	U
Toluene	UG/KG	20	9%	2.646	BENTHIC-CHRONIC	5	5	54	15	U	31	U	18	UJ	17	U	16	U
Total Xylenes	UG/KG	0	0%			0	0	54	15	U	31	U	18	UJ	17	U	16	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	15	U	31	U	18	UJ	17	U	16	U
Trichloroethene	UG/KG	18	7%	108	NYSDEC HHB	0	4	54	15	U	31	U	18	UJ	17	U	16	U
Vinyl chloride	UG/KG	0	0%	3.78	NYSDEC HHB	0	0	54	15	U	31	U	18	U	17	U	16	U
SEMI VOLATILE ORGANICS																		

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-16		SD12-17		SD12-18		SD12-19		SD12-20A	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12428		12432		12452		12440		12445	
DEPTH_TOP									0.3		0.2		0.2		0.2		0.3	
DEPTH_BOT									0.5		0.4		0.4		0.4		0.5	
SAMP_DATE									08-Nov-97		08-Nov-97		10-Nov-97		06-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
1,2-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	110	U	210	U	110	U	93	U	100	U
1,3-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	110	U	210	U	110	U	93	U	100	U
1,4-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	110	U	210	U	110	U	93	U	100	U
2,2'-oxybis(1-Chloropropan	UG/KG	0	0%			0	0	5										
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	54	270	U	520	U	270	U	220	U	250	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	54	270	U	520	U	270	U	220	U	250	U
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
2-Chlorophenol	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
2-Methylnaphthalene	UG/KG	36	22%			0	12	54	110	U	210	U	110	U	93	U	100	U
2-Methylphenol	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
2-Nitroaniline	UG/KG	0	0%			0	0	54	270	U	520	U	270	U	220	U	250	U
2-Nitrophenol	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	UJ	100	UJ
3-Nitroaniline	UG/KG	0	0%			0	0	54	270	U	520	U	270	U	220	U	250	U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	54	270	U	520	U	270	U	220	U	250	U
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
4-Chloroaniline	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	UJ
4-Chlorophenyl phenyl eth	UG/KG	6	2%			0	1	54	110	U	210	U	110	U	93	U	100	U
4-Methylphenol	UG/KG	150	9%			0	5	54	110	U	210	U	110	U	93	U	100	U
4-Nitroaniline	UG/KG	0	0%			0	0	54	270	U	520	U	270	U	220	UJ	250	U
4-Nitrophenol	UG/KG	0	0%			0	0	54	270	U	520	U	270	U	220	U	250	U
Acenaphthene	UG/KG	500	41%	7560	BENTHIC-CHRONIC	0	22	54	110	U	210	U	110	U	93	U	8.2	J
Acenaphthylene	UG/KG	15	6%			0	3	54	110	U	210	U	110	U	93	U	100	U
Anthracene	UG/KG	830	48%	5.778	BENTHIC-CHRONIC	26	26	54	110	U	210	U	110	U	93	U	14	J
Benzo(a)anthracene	UG/KG	3100	72%	0.648	BENTHIC-CHRONIC	39	39	54	110	U	210	U	82	J	5.2	J	100	J
Benzo(a)pyrene	UG/KG	3300	76%	70.2	NYSDEC HHB	21	41	54	110	U	15	J	40	J	93	U	120	
Benzo(b)fluoranthene	UG/KG	3200	81%	70.2	NYSDEC HHB	24	44	54	110	U	18	J	51	J	93	U	120	
Benzo(ghi)perylene	UG/KG	2100	70%			0	38	54	110	U	210	U	31	J	93	U	110	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-16		SD12-17		SD12-18		SD12-19		SD12-20A	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12428		12432		12452		12440		12445	
DEPTH_TOP									0.3		0.2		0.2		0.2		0.3	
DEPTH_BOT									0.5		0.4		0.4		0.4		0.5	
SAMP_DATE									08-Nov-97		08-Nov-97		10-Nov-97		06-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Benzo(k)fluoranthene	UG/KG	2700	54%	70.2	NYSDEC HHB	15	29	54	110	U	19	J	110	U	93	U	110	
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	49	110	U	210	U	110	U	93	U	100	U
Bis(2-Ethylhexyl)phthalate	UG/KG	5000	13%	10800	BENTHIC-CHRONIC	0	7	54	110	U	210	U	110	U	93	U	100	U
Butylbenzylphthalate	UG/KG	42	17%			0	9	54	110	U	210	U	110	U	93	U	100	U
Carbazole	UG/KG	910	52%			0	28	54	110	U	210	U	110	U	93	U	20	J
Chrysene	UG/KG	3200	81%	70.2	NYSDEC HHB	23	44	54	110	U	20	J	38	J	26	J	[illegible]	
Di-n-butylphthalate	UG/KG	53	28%			0	15	54	110	U	210	U	15	J	93	U	100	U
Di-n-octylphthalate	UG/KG	140	20%			0	11	54	110	U	210	U	110	U	93	U	100	U
Dibenz(a,h)anthracene	UG/KG	860	56%			0	30	54	110	U	210	U	110	U	93	U	29	J
Dibenzofuran	UG/KG	64	30%			0	16	54	110	U	210	U	110	U	93	U	100	U
Diethyl phthalate	UG/KG	23	13%			0	7	54	110	U	210	U	110	U	93	U	100	U
Dimethylphthalate	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
Fluoranthene	UG/KG	6200	87%	55080	BENTHIC-CHRONIC	0	47	54	110	U	27	J	33	J	10	J	200	
Fluorene	UG/KG	340	37%	0.432	BENTHIC-CHRONIC	20	20	54	110	U	210	U	110	U	93	U	[illegible]	J
Hexachlorobenzene	UG/KG	6.2	2%	8.1	NYSDEC HHB	0	1	54	110	U	210	U	110	U	93	U	100	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
Hexachloroethane	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
Indeno(1,2,3-cd)pyrene	UG/KG	2000	70%	70.2	NYSDEC HHB	18	38	54	110	U	210	U	22	J	93	U	[illegible]	J
Isophorone	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
N-Nitrosodiphenylamine	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
Naphthalene	UG/KG	49	13%	1.62	BENTHIC-CHRONIC	7	7	54	110	U	210	U	110	U	93	U	100	U
Nitrobenzene	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
Pentachlorophenol	UG/KG	0	0%			0	0	54	270	U	520	U	270	U	220	U	250	U
Phenanthrene	UG/KG	3100	83%	6480	BENTHIC-CHRONIC	0	45	54	110	U	18	J	18	J	8	J	86	J
Phenol	UG/KG	0	0%			0	0	54	110	U	210	U	110	U	93	U	100	U
Pyrene	UG/KG	5400	85%	51.894	BENTHIC-CHRONIC	30	46	54	110	U	28	J	29	J	11	J	[illegible]	
PESTICIDES/PCBS																		
4,4'-DDD	UG/KG	110	11%	0.54	NYSDEC HHB	6	6	54	5.6	U	11	U	5.6	U	4.6	U	5.2	U
4,4'-DDE	UG/KG	76	19%	0.54	NYSDEC HHB	10	10	54	5.6	U	11	U	5.6	U	4.6	U	5.2	U
4,4'-DDT	UG/KG	200	13%	0.54	NYSDEC HHB	7	7	54	5.6	U	11	U	5.6	U	4.6	U	5.2	U
Aldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	2.9	U	5.5	U	2.9	U	2.4	U	2.7	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-16		SD12-17		SD12-18		SD12-19		SD12-20A	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12428		12432		12452		12440		12445	
DEPTH_TOP									0.3		0.2		0.2		0.2		0.3	
DEPTH_BOT									0.5		0.4		0.4		0.4		0.5	
SAMP_DATE									08-Nov-97		08-Nov-97		10-Nov-97		06-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Alpha-BHC	UG/KG	0	0%			0	0	54	2.9	U	5.5	U	0		2.4	U	2.7	U
Alpha-Chlordane	UG/KG	3.2	4%			0	2	54	2.9	U	5.5	U	2.9	U	2.4	U	2.7	U
Aroclor-1016	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	56	U	110	U	56	U	46	U	52	U
Aroclor-1221	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	110	U	220	U	110	U	94	U	110	U
Aroclor-1232	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	56	U	110	U	56	U	46	U	52	U
Aroclor-1242	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	56	U	110	U	56	U	46	U	52	U
Aroclor-1248	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	56	U	110	U	56	U	46	U	52	U
Aroclor-1254	UG/KG	1200	7%	0.0432	NYSDEC HHB	4	4	54	56	U	110	U	56	U	46	U	52	U
Aroclor-1260	UG/KG	37	4%	0.0432	NYSDEC HHB	2	2	54	56	U	110	U	56	U	46	U	52	U
Beta-BHC	UG/KG	0	0%			0	0	54	2.9	U	5.5	U	2.9	U	2.4	U	2.7	U
Delta-BHC	UG/KG	0	0%			0	0	54	2.9	U	5.5	U	2.9	U	2.4	U	2.7	U
Dieldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	5.6	U	11	U	5.6	U	4.6	U	5.2	U
Endosulfan I	UG/KG	3.6	4%	1.62	NYSDEC HHB	2	2	54	2.9	U	5.5	U	2.9	U	2.4	U	2.7	U
Endosulfan II	UG/KG	0	0%	1.62	BENTHIC-CHRONIC	0	0	54	5.6	U	11	U	5.6	U	4.6	U	5.2	U
Endosulfan sulfate	UG/KG	0	0%			0	0	54	5.6	U	11	U	5.6	U	4.6	U	5.2	U
Endrin	UG/KG	5.6	2%	43.2	BENTHIC-CHRONIC	0	1	54	5.6	U	11	U	5.6	U	4.6	U	5.2	U
Endrin aldehyde	UG/KG	7.6	4%			0	2	54	5.6	U	11	U	5.6	U	4.6	U	5.2	U
Endrin ketone	UG/KG	22	4%			0	2	54	5.6	U	11	U	5.6	U	4.6	U	5.2	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	54	2.9	U	5.5	U	2.9	U	2.4	U	2.7	U
Gamma-Chlordane	UG/KG	0	0%			0	0	54	2.9	U	5.5	U	2.9	U	2.4	U	2.7	U
Heptachlor	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	2.9	U	5.5	U	2.9	U	2.4	U	2.7	U
Heptachlor epoxide	UG/KG	11	6%	0.0432	NYSDEC HHB	3	3	54	2.9	U	5.5	U	2.9	U	2.4	U	2.7	U
Methoxychlor	UG/KG	0	0%			0	0	54	29	U	55	U	29	U	24	U	27	U
Toxaphene	UG/KG	0	0%			0	0	54	290	U	550	U	290	U	240	U	270	U
METALS																		
Aluminum	MG/KG	38700	100%			0	54	54	15900		18300		11000		4690	J	8660	J
Antimony	MG/KG	2.8	7%	2		1	4	54	0.88	UJ	2.2	UJ	0.94	UJ	0.7	UJ	0.79	UJ
Arsenic	MG/KG	19.1	96%	6		10	52	54	[illegible]		2.7		4.5		3		4.6	
Barium	MG/KG	885	100%			0	54	54	410		172		61.6		35.9		78.7	
Beryllium	MG/KG	1.7	87%			0	47	54	0.03	U	0.81		0.49		0.25		0.39	
Cadmium	MG/KG	9	28%	0.6		8	15	54	0.08	U	0.19	U	0.08	U	0.1	U	0.12	
Calcium	MG/KG	280000	100%			0	54	54	6230		6600		84600		133000	J	67500	J
Chromium	MG/KG	130	100%	26		9	54	54	24.4		21.2		17.9		7.5	J	14	J
Cobalt	MG/KG	75.3	80%			0	43	54	44.6		9.5		12.9		4.9		6.3	
Copper	MG/KG	1160	100%	16		49	54	54	20.6		22.8		25		12.2	J	17.5	J

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-16		SD12-17		SD12-18		SD12-19		SD12-20A	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12428		12432		12452		12440		12445	
DEPTH_TOP									0.3		0.2		0.2		0.2		0.3	
DEPTH_BOT									0.5		0.4		0.4		0.4		0.5	
SAMP_DATE									08-Nov-97		08-Nov-97		10-Nov-97		06-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Cyanide	MG/KG	2.6	4%			0	2	54	0.85	U	1.8	U	0.84	UJ	0.8	UJ	0.91	UJ
Iron	MG/KG	85900	100%	20000		38	54	54	53400		23900		[illegible]		8540	J	14000	J
Lead	MG/KG	215	85%	31		8	46	54	30.9		28.9		16.2	J	7	J	20.4	J
Magnesium	MG/KG	48100	100%			0	54	54	4910		3800		11700		12800	J	8090	J
Manganese	MG/KG	14000	91%	460		25	49	54	6700		844		[illegible]		258	J	307	J
Mercury	MG/KG	1.7	33%	0.15		7	18	54	0.08	U	0.27		0.08	U	0.06	U	0.07	U
Nickel	MG/KG	126	100%	16		51	54	54	[illegible]		29.3		34.1		14.6	J	38.2	J
Potassium	MG/KG	5500	100%			0	54	54	1750		2720	J	2030		1060		1880	
Selenium	MG/KG	6.2	46%			0	25	54	3.1	J	3	UJ	2.9		1.1	J	2.1	J
Silver	MG/KG	1.5	9%	1		1	5	54	0.53	J	1.3	U	0.56	U	0.27	U	0.3	U
Sodium	MG/KG	1550	48%			0	26	54	152	U	384	U	196		105	U	198	
Thallium	MG/KG	4	11%			0	6	54	4		4	U	1.8		1.5	U	2	
Vanadium	MG/KG	70.3	100%			0	54	54	35.8		25.9		26.6		19.6		21.6	
Zinc	MG/KG	2650	91%	120		35	49	54	169		137		78.4		64.7	J	138	J

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-22		SD12-23		SD12-24		SD12-25		SD12-26	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12424		12420		12419		12401		12400	
DEPTH_TOP									0.5		0.15		0.2		0.3		0.2	
DEPTH_BOT									0.7		0.3		0.4		0.5		0.3	
SAMP_DATE									07-Nov-97		07-Nov-97		07-Nov-97		27-Oct-97		27-Oct-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
VOLATILE ORGANICS																		
1,1,1-Trichloroethane	UG/KG	3	2%			0	1	54	26	U	14	U	20	U	25	U	17	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	NYSDEC HHB	0	0	54	26	U	14	U	20	U	25	U	17	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	NYSDEC HHB	0	0	54	26	U	14	U	20	U	25	U	17	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	NYSDEC HHB	0	0	54	26	U	14	U	20	U	25	U	17	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Acetone	UG/KG	95	37%			0	20	54	65	J	14	U	20	UJ	30		41	
Benzene	UG/KG	0	0%	1.512	BENTHIC-CHRONIC	0	0	54	26	U	14	U	20	U	25	U	17	U
Bromodichloromethane	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Bromoform	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Carbon disulfide	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Carbon tetrachloride	UG/KG	0	0%	32.4	NYSDEC HHB	0	0	54	26	U	14	U	20	U	25	U	17	U
Chlorobenzene	UG/KG	0	0%	189	BENTHIC-CHRONIC	0	0	54	26	U	14	U	20	U	25	U	17	U
Chlorodibromomethane	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Chloroethane	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Chloroform	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Ethyl benzene	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Methyl bromide	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Methyl butyl ketone	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Methyl chloride	UG/KG	17	4%			0	2	54	26	U	14	U	20	U	25	U	17	U
Methyl ethyl ketone	UG/KG	11	2%			0	1	54	26	UJ	14	U	20	U	25	U	17	U
Methyl isobutyl ketone	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Methylene chloride	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Styrene	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Tetrachloroethene	UG/KG	4	4%	43.2	NYSDEC HHB	0	2	54	26	U	14	U	20	U	25	U	17	U
Toluene	UG/KG	20	9%	2.646	BENTHIC-CHRONIC	5	5	54	26	U	14	U	20	U	25	U	17	U
Total Xylenes	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	26	U	14	U	20	U	25	U	17	U
Trichloroethene	UG/KG	18	7%	108	NYSDEC HHB	0	4	54	26	U	14	U	20	U	25	U	17	U
Vinyl chloride	UG/KG	0	0%	3.78	NYSDEC HHB	0	0	54	26	U	14	U	20	U	25	U	17	U
SEMI VOLATILE ORGANICS																		

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-22		SD12-23		SD12-24		SD12-25		SD12-26	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12424		12420		12419		12401		12400	
DEPTH_TOP									0.5		0.15		0.2		0.3		0.2	
DEPTH_BOT									0.7		0.3		0.4		0.5		0.3	
SAMP_DATE									07-Nov-97		07-Nov-97		07-Nov-97		27-Oct-97		27-Oct-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
1,2-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	120	U	97	U	130	U	240	U	120	U
1,3-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	120	U	97	U	130	U	240	U	120	U
1,4-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	120	U	97	U	130	U	240	U	120	U
2,2'-oxybis(1-Chloropropan	UG/KG	0	0%			0	0	5										
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	54	280	U	240	U	310	U	570	U	300	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	54	280	U	240	U	310	U	570	U	300	U
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
2-Chlorophenol	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
2-Methylnaphthalene	UG/KG	36	22%			0	12	54	120	U	7.3	J	17	J	16	J	120	U
2-Methylphenol	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
2-Nitroaniline	UG/KG	0	0%			0	0	54	280	U	240	U	310	U	570	U	300	U
2-Nitrophenol	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	54	120	U	97	UJ	130	UJ	240	UJ	120	UJ
3-Nitroaniline	UG/KG	0	0%			0	0	54	280	U	240	U	310	U	570	U	300	U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	54	280	U	240	U	310	U	570	U	300	U
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
4-Chloroaniline	UG/KG	0	0%			0	0	54	120	U	97	UJ	130	UJ	240	UJ	120	UJ
4-Chlorophenyl phenyl eth	UG/KG	6	2%			0	1	54	120	U	97	U	130	U	240	U	120	U
4-Methylphenol	UG/KG	150	9%			0	5	54	120	U	97	U	130	U	240	U	22	J
4-Nitroaniline	UG/KG	0	0%			0	0	54	280	U	240	U	310	U	570	U	300	U
4-Nitrophenol	UG/KG	0	0%			0	0	54	280	U	240	U	310	U	570	U	300	U
Acenaphthene	UG/KG	500	41%	7560	BENTHIC-CHRONIC	0	22	54	11	J	19	J	18	J	140	J	120	U
Acenaphthylene	UG/KG	15	6%			0	3	54	120	U	8	J	15	J	240	U	120	U
Anthracene	UG/KG	830	48%	5.778	BENTHIC-CHRONIC	26	26	54	14	J	36	J	27	J	160	J	120	U
Benzo(a)anthracene	UG/KG	3100	72%	0.648	BENTHIC-CHRONIC	39	39	54	97	J	210		170		690		36	J
Benzo(a)pyrene	UG/KG	3300	76%	70.2	NYSDEC HHB	21	41	54	120		260		200		730		46	J
Benzo(b)fluoranthene	UG/KG	3200	81%	70.2	NYSDEC HHB	24	44	54	170		430		410		750		55	J
Benzo(ghi)perylene	UG/KG	2100	70%			0	38	54	89	J	170		220		580		38	J

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-22		SD12-23		SD12-24		SD12-25		SD12-26	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12424		12420		12419		12401		12400	
DEPTH_TOP									0.5		0.15		0.2		0.3		0.2	
DEPTH_BOT									0.7		0.3		0.4		0.5		0.3	
SAMP_DATE									07-Nov-97		07-Nov-97		07-Nov-97		27-Oct-97		27-Oct-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Benzo(k)fluoranthene	UG/KG	2700	54%	70.2	NYSDEC HHB	15	29	54	110	J	97	U	130	U	600		42	J
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	49	120	U	97	U	130	U	240	U	120	U
Bis(2-Ethylhexyl)phthalate	UG/KG	5000	13%	10800	BENTHIC-CHRONIC	0	7	54	130	U	97	U	130	U	240	U	120	U
Butylbenzylphthalate	UG/KG	42	17%			0	9	54	120	U	97	U	130	U	240	U	120	U
Carbazole	UG/KG	910	52%			0	28	54	37	J	60	J	68	J	330		20	J
Chrysene	UG/KG	3200	81%	70.2	NYSDEC HHB	23	44	54	190		240		[illegible]		[illegible]		57	J
Di-n-butylphthalate	UG/KG	53	28%			0	15	54	130	U	97	U	130	U	240	U	6.9	J
Di-n-octylphthalate	UG/KG	140	20%			0	11	54	120	U	97	U	130	U	240	U	120	U
Dibenz(a,h)anthracene	UG/KG	860	56%			0	30	54	31	J	75	J	93	J	220	J	14	J
Dibenzofuran	UG/KG	64	30%			0	16	54	120	U	7.4	J	8.4	J	54	J	120	U
Diethyl phthalate	UG/KG	23	13%			0	7	54	120	U	5.6	J	130	U	240	U	120	U
Dimethylphthalate	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
Fluoranthene	UG/KG	6200	87%	55080	BENTHIC-CHRONIC	0	47	54	280		420		340		1600		85	J
Fluorene	UG/KG	340	37%	0.432	BENTHIC-CHRONIC	20	20	54	7.9	J	18	J	14	J	90	J	120	U
Hexachlorobenzene	UG/KG	6.2	2%	8.1	NYSDEC HHB	0	1	54	120	U	97	U	130	U	240	U	120	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
Hexachloroethane	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
Indeno(1,2,3-cd)pyrene	UG/KG	2000	70%	70.2	NYSDEC HHB	18	38	54	[illegible]	J	[illegible]		[illegible]		540		33	J
Isophorone	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
N-Nitrosodiphenylamine	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
Naphthalene	UG/KG	49	13%	1.62	BENTHIC-CHRONIC	7	7	54	120	U	97	U	130	U	28	J	120	U
Nitrobenzene	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
Pentachlorophenol	UG/KG	0	0%			0	0	54	280	U	240	U	310	U	570	U	300	U
Phenanthrene	UG/KG	3100	83%	6480	BENTHIC-CHRONIC	0	45	54	110	J	190		170		1100		56	J
Phenol	UG/KG	0	0%			0	0	54	120	U	97	U	130	U	240	U	120	U
Pyrene	UG/KG	5400	85%	51.894	BENTHIC-CHRONIC	30	46	54	[illegible]		340		[illegible]		[illegible]		[illegible]	J
PESTICIDES/PCBS																		
4,4'-DDD	UG/KG	110	11%	0.54	NYSDEC HHB	6	6	54	11	J	2.9	J	6.5	U	74		6.2	U
4,4'-DDE	UG/KG	76	19%	0.54	NYSDEC HHB	10	10	54	55		3.2	J	4.3	J	30		6.2	U
4,4'-DDT	UG/KG	200	13%	0.54	NYSDEC HHB	7	7	54	9.6		3.4	J	6.5	U	15		6.2	U
Aldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	3	U	2.5	U	3.3	U	3.2	U	3.2	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-22		SD12-23		SD12-24		SD12-25		SD12-26	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12424		12420		12419		12401		12400	
DEPTH_TOP									0.5		0.15		0.2		0.3		0.2	
DEPTH_BOT									0.7		0.3		0.4		0.5		0.3	
SAMP_DATE									07-Nov-97		07-Nov-97		07-Nov-97		27-Oct-97		27-Oct-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Alpha-BHC	UG/KG	0	0%			0	0	54	3	U	2.5	U	3.3	U	3.2	U	3.2	U
Alpha-Chlordane	UG/KG	3.2	4%			0	2	54	2.6	J	2.5	U	3.3	U	3.2	U	3.2	U
Aroclor-1016	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	59	U	48	U	65	U	62	U	62	U
Aroclor-1221	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	120	U	98	U	130	U	120	U	120	U
Aroclor-1232	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	59	U	48	U	65	U	62	U	62	U
Aroclor-1242	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	59	U	48	U	65	U	62	U	62	U
Aroclor-1248	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	59	U	48	U	65	U	62	U	62	U
Aroclor-1254	UG/KG	1200	7%	0.0432	NYSDEC HHB	4	4	54	59	U	48	U	65	U	62	U	62	U
Aroclor-1260	UG/KG	37	4%	0.0432	NYSDEC HHB	2	2	54	59	U	48	U	65	U	62	U	62	U
Beta-BHC	UG/KG	0	0%			0	0	54	3	U	2.5	U	3.3	U	3.2	U	3.2	U
Delta-BHC	UG/KG	0	0%			0	0	54	3	U	2.5	U	3.3	U	3.2	U	3.2	U
Dieldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	5.9	U	4.8	U	6.5	U	6.2	U	6.2	U
Endosulfan I	UG/KG	3.6	4%	1.62	NYSDEC HHB	2	2	54	3	U	2.5	U	3.3	U	[illegible]		3.2	U
Endosulfan II	UG/KG	0	0%	1.62	BENTHIC-CHRONIC	0	0	54	5.9	U	4.8	U	6.5	U	6.2	U	6.2	U
Endosulfan sulfate	UG/KG	0	0%			0	0	54	5.9	U	4.8	U	6.5	U	6.2	U	6.2	U
Endrin	UG/KG	5.6	2%	43.2	BENTHIC-CHRONIC	0	1	54	5.9	U	4.8	U	6.5	U	5.6	J	6.2	U
Endrin aldehyde	UG/KG	7.6	4%			0	2	54	5.9	U	4.8	U	6.5	U	7.6		6.2	U
Endrin ketone	UG/KG	22	4%			0	2	54	5.9	U	6.5		6.5	U	22		6.2	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	54	3	U	2.5	U	3.3	U	3.2	U	3.2	U
Gamma-Chlordane	UG/KG	0	0%			0	0	54	3	U	2.5	U	3.3	U	3.2	U	3.2	U
Heptachlor	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	3	U	2.5	U	3.3	U	3.2	U	3.2	U
Heptachlor epoxide	UG/KG	11	6%	0.0432	NYSDEC HHB	3	3	54	[illegible]		2.5	U	3.3	U	[illegible]		3.2	U
Methoxychlor	UG/KG	0	0%			0	0	54	30	U	25	U	33	U	32	U	32	U
Toxaphene	UG/KG	0	0%			0	0	54	300	U	250	U	330	U	320	U	320	U
METALS																		
Aluminum	MG/KG	38700	100%			0	54	54	12800		12800	J	15800	J	15200	J	15400	J
Antimony	MG/KG	2.8	7%	2		1	4	54	1.3	J	0.74	UJ	0.93	UJ	0.83	UJ	0.86	UJ
Arsenic	MG/KG	19.1	96%	6		10	52	54	3.8		5.6		[illegible]		4.2		3.1	
Barium	MG/KG	885	100%			0	54	54	69.5		94.5		81.5		109		104	
Beryllium	MG/KG	1.7	87%			0	47	54	0.54		0.45		0.65		0.1	U	0.1	U
Cadmium	MG/KG	9	28%	0.6		8	15	54	0.08	U	0.1	U	0.13	U	[illegible]		0.12	U
Calcium	MG/KG	280000	100%			0	54	54	7400		28600	J	65100	J	7670	J	33900	J
Chromium	MG/KG	130	100%	26		9	54	54	19.2		20.3	J	[illegible]	J	45.1	J	22.4	J
Cobalt	MG/KG	75.3	80%			0	43	54	9.5		11.5		14.1		1.3	U	1.3	U
Copper	MG/KG	1160	100%	16		49	54	54	[illegible]		29.4	J	32.7	J	190	J	19.1	J

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-22		SD12-23		SD12-24		SD12-25		SD12-26	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12424		12420		12419		12401		12400	
DEPTH_TOP									0.5		0.15		0.2		0.3		0.2	
DEPTH_BOT									0.7		0.3		0.4		0.5		0.3	
SAMP_DATE									07-Nov-97		07-Nov-97		07-Nov-97		27-Oct-97		27-Oct-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Cyanide	MG/KG	2.6	4%			0	2	54	1.1	U	0.8	UJ	1.1	UJ	0.94	UJ	0.94	UJ
Iron	MG/KG	85900	100%	20000		38	54	54	[illegible]		[illegible]	J	[illegible]	J	34200	J	32400	J
Lead	MG/KG	215	85%	31		8	46	54	23.9		17.6	J	27.6	J	116	UJ	14.9	UJ
Magnesium	MG/KG	48100	100%			0	54	54	5090		6360	J	10500	J	5260	J	4950	J
Manganese	MG/KG	14000	91%	460		25	49	54	260		607	J	443	J	321	UJ	404	UJ
Mercury	MG/KG	1.7	33%	0.15		7	18	54	0.12		0.06	U	0.08	U	0.62		0.16	
Nickel	MG/KG	126	100%	16		51	54	54	[illegible]		33.6	J	48.9	J	33.8	J	32.2	J
Potassium	MG/KG	5500	100%			0	54	54	2400	J	2000		2300		2030		2050	
Selenium	MG/KG	6.2	46%			0	25	54	1.3	UJ	1.2	J	1.8	J	1.8	J	1.2	UJ
Silver	MG/KG	1.5	9%	1		1	5	54	0.56	U	0.28	U	0.35	U	1		0.33	U
Sodium	MG/KG	1550	48%			0	26	54	163	U	150		138	U	157	U	128	U
Thallium	MG/KG	4	11%			0	6	54	1.7	U	1.5	U	1.9	U	1.9		1.8	U
Vanadium	MG/KG	70.3	100%			0	54	54	22.4		21.6		44.3		27.1		24	
Zinc	MG/KG	2650	91%	120		35	49	54	188		135	J	142	J	547	UJ	95.3	UJ

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-27		SD12-28		SD12-28		SD12-29		SD12-30	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12423		12410		12409		12463		12408	
DEPTH_TOP									0.3		0.4		0.4		0.5		0.5	
DEPTH_BOT									0.5		0.6		0.6		0.7		0.7	
SAMP_DATE									07-Nov-97		29-Oct-97		29-Oct-97		04-Dec-97		28-Oct-97	
QC_CODE									SA		DU		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
VOLATILE ORGANICS																		
1,1,1-Trichloroethane	UG/KG	3	2%			0	1	54	21	U	24	U	24	U	18	U	17	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	NYSDEC HHB	0	0	54	21	U	24	U	24	U	18	U	17	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	NYSDEC HHB	0	0	54	21	U	24	U	24	U	18	U	17	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	NYSDEC HHB	0	0	54	21	U	24	U	24	U	18	U	17	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Acetone	UG/KG	95	37%			0	20	54	15	J	24	U	24	U	40	J	17	U
Benzene	UG/KG	0	0%	1.512	BENTHIC-CHRONIC	0	0	54	21	U	24	U	24	U	18	U	17	U
Bromodichloromethane	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Bromoform	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Carbon disulfide	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Carbon tetrachloride	UG/KG	0	0%	32.4	NYSDEC HHB	0	0	54	21	U	24	U	24	U	18	U	17	U
Chlorobenzene	UG/KG	0	0%	189	BENTHIC-CHRONIC	0	0	54	21	U	24	U	24	U	18	U	17	U
Chlorodibromomethane	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Chloroethane	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Chloroform	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Ethyl benzene	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Methyl bromide	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Methyl butyl ketone	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Methyl chloride	UG/KG	17	4%			0	2	54	21	U	24	U	24	U	18	U	17	U
Methyl ethyl ketone	UG/KG	11	2%			0	1	54	21	UJ	24	U	24	U	18	UJ	17	U
Methyl isobutyl ketone	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Methylene chloride	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Styrene	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Tetrachloroethene	UG/KG	4	4%	43.2	NYSDEC HHB	0	2	54	21	U	24	U	24	U	18	U	17	U
Toluene	UG/KG	20	9%	2.646	BENTHIC-CHRONIC	5	5	54	21	U	24	U	24	U	18	U	17	U
Total Xylenes	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	21	U	24	U	24	U	18	U	17	U
Trichloroethene	UG/KG	18	7%	108	NYSDEC HHB	0	4	54	21	U	24	U	24	U	18	U	2	J
Vinyl chloride	UG/KG	0	0%	3.78	NYSDEC HHB	0	0	54	21	U	24	U	24	U	18	U	17	U
SEMI VOLATILE ORGANICS																		

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-27		SD12-28		SD12-28		SD12-29		SD12-30	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12423		12410		12409		12463		12408	
DEPTH_TOP									0.3		0.4		0.4		0.5		0.5	
DEPTH_BOT									0.5		0.6		0.6		0.7		0.7	
SAMP_DATE									07-Nov-97		29-Oct-97		29-Oct-97		04-Dec-97		28-Oct-97	
QC_CODE									SA		DU		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
1,2-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	130	U	150	U	170	U	210	U	89	U
1,3-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	130	U	150	U	170	U	210	U	89	U
1,4-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	130	U	150	U	170	U	210	U	89	U
2,2'-oxybis(1-Chloropropan	UG/KG	0	0%			0	0	5										
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	54	310	U	370	U	420	U	520	U	220	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	54	310	U	370	U	420	U	520	UJ	220	U
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
2-Chlorophenol	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
2-Methylnaphthalene	UG/KG	36	22%			0	12	54	130	U	10	J	9.4	J	36	J	5.3	J
2-Methylphenol	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
2-Nitroaniline	UG/KG	0	0%			0	0	54	310	U	370	U	420	U	520	U	220	U
2-Nitrophenol	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	54	130	U	150	UJ	170	UJ	210	U	89	UJ
3-Nitroaniline	UG/KG	0	0%			0	0	54	310	U	370	U	420	U	520	UJ	220	U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	54	310	U	370	U	420	U	520	UJ	220	U
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
4-Chloroaniline	UG/KG	0	0%			0	0	54	130	U	150	UJ	170	UJ	210	UJ	89	UJ
4-Chlorophenyl phenyl eth	UG/KG	6	2%			0	1	54	130	U	150	U	170	U	210	U	89	U
4-Methylphenol	UG/KG	150	9%			0	5	54	130	U	150	U	170	U	210	U	89	U
4-Nitroaniline	UG/KG	0	0%			0	0	54	310	U	370	U	420	U	520	U	220	U
4-Nitrophenol	UG/KG	0	0%			0	0	54	310	U	370	U	420	U	520	UJ	220	U
Acenaphthene	UG/KG	500	41%	7560	BENTHIC-CHRONIC	0	22	54	61	J	31	J	25	J	100	J	7.2	J
Acenaphthylene	UG/KG	15	6%			0	3	54	130	U	150	U	170	U	210	U	89	U
Anthracene	UG/KG	830	48%	5.778	BENTHIC-CHRONIC	26	26	54	61	J	45	J	42	J	[illegible]	J	7.7	J
Benzo(a)anthracene	UG/KG	3100	72%	0.648	BENTHIC-CHRONIC	39	39	54	340		220		200		670		30	J
Benzo(a)pyrene	UG/KG	3300	76%	70.2	NYSDEC HHB	21	41	54	360		260		240		520		38	J
Benzo(b)fluoranthene	UG/KG	3200	81%	70.2	NYSDEC HHB	24	44	54	390		240		220		700		42	J
Benzo(ghi)perylene	UG/KG	2100	70%			0	38	54	230		160		160	J	350		40	J

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-27		SD12-28		SD12-28		SD12-29		SD12-30	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12423		12410		12409		12463		12408	
DEPTH_TOP									0.3		0.4		0.4		0.5		0.5	
DEPTH_BOT									0.5		0.6		0.6		0.7		0.7	
SAMP_DATE									07-Nov-97		29-Oct-97		29-Oct-97		04-Dec-97		28-Oct-97	
QC_CODE									SA		DU		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Benzo(k)fluoranthene	UG/KG	2700	54%	70.2	NYSDEC HHB	15	29	54	[illegible]		260		240		340		39	J
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	49	130	U	150	U	170	U	210	U	89	U
Bis(2-Ethylhexyl)phthalate	UG/KG	5000	13%	10800	BENTHIC-CHRONIC	0	7	54	130	U	150	U	170	U	46	J	89	U
Butylbenzylphthalate	UG/KG	42	17%			0	9	54	130	U	158	U	170	U	36	J	89	U
Carbazole	UG/KG	910	52%			0	28	54	140		120	J	100	J	200	J	89	U
Chrysene	UG/KG	3200	81%	70.2	NYSDEC HHB	23	44	54	[illegible]		290		270		[illegible]		44	J
Di-n-butylphthalate	UG/KG	53	28%			0	15	54	130	U	150	U	9.8	J	22	J	89	U
Di-n-octylphthalate	UG/KG	140	20%			0	11	54	130	U	11	J	13	J	210	U	20	J
Dibenz(a,h)anthracene	UG/KG	860	56%			0	30	54	74	J	52	J	54	J	140	J	12	J
Dibenzofuran	UG/KG	64	30%			0	16	54	23	J	17	J	15	J	64	J	89	U
Diethyl phthalate	UG/KG	23	13%			0	7	54	11	J	150	U	170	U	210	U	89	U
Dimethylphthalate	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
Fluoranthene	UG/KG	6200	87%	55080	BENTHIC-CHRONIC	0	47	54	910		500		440		1500		77	J
Fluorene	UG/KG	340	37%	0.432	BENTHIC-CHRONIC	20	20	54	[illegible]	J	33	J	36	J	110	J	89	U
Hexachlorobenzene	UG/KG	6.2	2%	8.1	NYSDEC HHB	0	1	54	130	U	150	U	170	U	210	U	89	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	UJ	89	U
Hexachloroethane	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
Indeno(1,2,3-cd)pyrene	UG/KG	2000	70%	70.2	NYSDEC HHB	18	38	54	[illegible]		150	J	[illegible]	J	300		28	J
Isophorone	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
N-Nitrosodiphenylamine	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
Naphthalene	UG/KG	49	13%	1.62	BENTHIC-CHRONIC	7	7	54	130	U	12	J	[illegible]	J	49	J	89	U
Nitrobenzene	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
Pentachlorophenol	UG/KG	0	0%			0	0	54	310	U	370	U	420	U	520	UJ	220	U
Phenanthrene	UG/KG	3100	83%	6480	BENTHIC-CHRONIC	0	45	54	520		280		250		1000		54	J
Phenol	UG/KG	0	0%			0	0	54	130	U	150	U	170	U	210	U	89	U
Pyrene	UG/KG	5400	85%	51.894	BENTHIC-CHRONIC	30	46	54	790		440		410		1100		[illegible]	J
PESTICIDES/PCBS																		
4,4'-DDD	UG/KG	110	11%	0.54	NYSDEC HHB	6	6	54	8.6	U	7.7	U	8.7	U	11	U	14	
4,4'-DDE	UG/KG	76	19%	0.54	NYSDEC HHB	10	10	54	46		7.7	U	8.7	U	11	U	3.2	J
4,4'-DDT	UG/KG	200	13%	0.54	NYSDEC HHB	7	7	54	13		7.7	U	8.7	U	11	U	3.3	J
Aldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	3.3	U	4	U	4.5	U	5.5	U	2.3	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-27		SD12-28		SD12-28		SD12-29		SD12-30	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12423		12410		12409		12463		12408	
DEPTH_TOP									0.3		0.4		0.4		0.5		0.5	
DEPTH_BOT									0.5		0.6		0.6		0.7		0.7	
SAMP_DATE									07-Nov-97		29-Oct-97		29-Oct-97		04-Dec-97		28-Oct-97	
QC_CODE									SA		DU		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Alpha-BHC	UG/KG	0	0%			0	0	54	3.3	U	4	U	4.5	U	5.5	U	2.3	U
Alpha-Chlordane	UG/KG	3.2	4%			0	2	54	3.3	U	4	U	4.5	U	5.5	U	2.3	U
Aroclor-1016	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	63	U	77	U	87	U	110	U	44	U
Aroclor-1221	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	130	U	160	U	180	U	220	U	90	U
Aroclor-1232	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	63	U	77	U	87	U	110	U	44	U
Aroclor-1242	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	63	U	77	U	87	U	110	U	44	U
Aroclor-1248	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	63	U	77	U	87	U	110	U	44	U
Aroclor-1254	UG/KG	1200	7%	0.0432	NYSDEC HHB	4	4	54	63	U	77	U	87	U	110	U	44	U
Aroclor-1260	UG/KG	37	4%	0.0432	NYSDEC HHB	2	2	54	63	U	77	U	87	U	110	U	44	U
Beta-BHC	UG/KG	0	0%			0	0	54	3.3	U	4	U	4.5	U	5.5	U	2.3	U
Delta-BHC	UG/KG	0	0%			0	0	54	3.3	U	4	U	4.5	U	5.5	U	2.3	U
Dieldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	6.3	U	7.7	U	8.7	U	11	U	4.4	U
Endosulfan I	UG/KG	3.6	4%	1.62	NYSDEC HHB	2	2	54	3.3	U	4	U	4.5	U	5.5	U	2.3	U
Endosulfan II	UG/KG	0	0%	1.62	BENTHIC-CHRONIC	0	0	54	6.3	U	7.7	U	8.7	U	11	U	4.4	U
Endosulfan sulfate	UG/KG	0	0%			0	0	54	6.3	U	7.7	U	8.7	U	11	U	4.4	U
Endrin	UG/KG	5.6	2%	43.2	BENTHIC-CHRONIC	0	1	54	6.3	U	7.7	U	8.7	U	11	U	4.4	U
Endrin aldehyde	UG/KG	7.6	4%			0	2	54	6.3	U	7.7	U	8.7	U	11	U	4.4	U
Endrin ketone	UG/KG	22	4%			0	2	54	6.3	U	7.7	U	8.7	U	11	U	4.4	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	54	3.3	U	4	U	4.5	U	5.5	U	2.3	U
Gamma-Chlordane	UG/KG	0	0%			0	0	54	3.3	U	4	U	4.5	U	5.5	U	2.3	U
Heptachlor	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	3.3	U	4	U	4.5	U	5.5	U	2.3	U
Heptachlor epoxide	UG/KG	11	6%	0.0432	NYSDEC HHB	3	3	54	3.3	U	4	U	4.5	U	5.5	U	2.3	U
Methoxychlor	UG/KG	0	0%			0	0	54	33	U	40	U	45	U	55	U	23	U
Toxaphene	UG/KG	0	0%			0	0	54	330	U	400	U	450	U	550	U	230	U
METALS																		
Aluminum	MG/KG	38700	100%			0	54	54	12300		15100	J	8800	J	20000		8100	J
Antimony	MG/KG	2.8	7%	2		1	4	54	1.1	UJ	1	UJ	1.1	UJ	2.1	UJ	0.66	UJ
Arsenic	MG/KG	19.1	96%	6		10	52	54	2.6		2.8		2.5		8.6		4.8	
Barium	MG/KG	885	100%			0	54	54	91.7		127		77.3		98.7	J	32.9	
Beryllium	MG/KG	1.7	87%			0	47	54	0.5		0.63		0.41		0.85	J	0.31	
Cadmium	MG/KG	9	28%	0.6		8	15	54	0.09	U	0.3		0.16	U	0.18	U	5.9	
Calcium	MG/KG	280000	100%			0	54	54	57000		50200	J	31900	J	59200		107000	J
Chromium	MG/KG	130	100%	26		9	54	54	18.3		[illegible]	J	16.5	J	34.7		17.3	J
Cobalt	MG/KG	75.3	80%			0	43	54	10.5		14.2		1.3	U	19.3	J	1.3	U
Copper	MG/KG	1160	100%	16		49	54	54	26.6		29.9	J	20.7	J	42.5		25.1	J

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY																		
LOC_ID									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
MATRIX									SD12-27		SD12-28		SD12-28		SD12-29		SD12-30	
SAMP_ID									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
DEPTH_TOP									12423		12410		12409		12463		12408	
DEPTH_BOT									0.3		0.4		0.4		0.5		0.5	
SAMP_DATE									0.5		0.6		0.6		0.7		0.7	
QC_CODE									07-Nov-97		29-Oct-97		29-Oct-97		04-Dec-97		28-Oct-97	
STUDY_ID									SA		DU		SA		SA		SA	
									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Cyanide	MG/KG	2.6	4%			0	2	54	1.2	U	1.2	UJ	1.4	UJ	2	UJ	0.68	UJ
Iron	MG/KG	85900	100%	20000		38	54	54	20000		23[illegible]	J	14300	J	39900		16300	J
Lead	MG/KG	215	85%	31		8	46	54	20		32.9	J	19.7	J	15.9	J	22.5	J
Magnesium	MG/KG	48100	100%			0	54	54	7350		8090	J	5270	J	10900		48100	J
Manganese	MG/KG	14000	91%	460		25	49	54	424		412	J	272	J	574		290	J
Mercury	MG/KG	1.7	33%	0.15		7	18	54	0.1	U	0.17		0.12		0.11	UJ	0.14	
Nickel	MG/KG	126	100%	16		51	54	54	30		41.1	J	24.3	J	56.8		[illegible]	J
Potassium	MG/KG	5500	100%			0	54	54	1970	J	1970		1290		2390	J	1210	
Selenium	MG/KG	6.2	46%			0	25	54	1.5	UJ	1.6	J	1.6	UJ	2.8	U	0.9	UJ
Silver	MG/KG	1.5	9%	1		1	5	54	0.66	U	0.38	U	0.43	U	1.5	J	0.25	U
Sodium	MG/KG	1550	48%			0	26	54	190	U	182	J	168	U	635	J	334	
Thallium	MG/KG	4	11%			0	6	54	2	U	2.1	U	2.3	U	3.7	UJ	1.4	U
Vanadium	MG/KG	70.3	100%			0	54	54	20.7		29.8		17.5		30.8		15.1	
Zinc	MG/KG	2650	91%	120		35	49	54	113		145	J	87.8	J	155	J	659	J

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		RI Phase		RI Phase	
LOC_ID									SD12-31		SD12-32		SD12-33		67356		67356	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SD12-34		SD12-34	
SAMP_ID									12407		12406		12405		12202		12418	
DEPTH_TOP									0.3		0.2		0.3		DU		SA	
DEPTH_BOT									0.5		0.4		0.5		0.6		0.6	
SAMP_DATE									28-Oct-97		28-Oct-97		28-Oct-97		00-Jan-00		00-Jan-00	
QC_CODE									SA		SA		SA		SEDIMEN		SEDIMEN	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	8-Nov-97		8-Nov-97	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
VOLATILE ORGANICS																		
1,1,1-Trichloroethane	UG/KG	3	2%			0	1	54	48	U	3	J	14	U	19	U	16	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	NYSDEC HHB	0	0	54	48	U	22	U	14	U	19	U	16	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	NYSDEC HHB	0	0	54	48	U	22	U	14	U	19	U	16	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	NYSDEC HHB	0	0	54	48	U	22	U	14	U	19	U	16	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Acetone	UG/KG	95	37%			0	20	54	95		22	U	32		19	U	16	U
Benzene	UG/KG	0	0%	1.512	BENTHIC-CHRONIC	0	0	54	48	U	22	U	14	U	19	U	16	U
Bromodichloromethane	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Bromoform	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Carbon disulfide	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Carbon tetrachloride	UG/KG	0	0%	32.4	NYSDEC HHB	0	0	54	48	U	22	U	14	U	19	U	16	U
Chlorobenzene	UG/KG	0	0%	189	BENTHIC-CHRONIC	0	0	54	48	U	22	U	14	U	19	U	16	U
Chlorodibromomethane	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Chloroethane	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Chloroform	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Ethyl benzene	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Methyl bromide	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Methyl butyl ketone	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Methyl chloride	UG/KG	17	4%			0	2	54	17	J	22	U	14	U	19	U	16	U
Methyl ethyl ketone	UG/KG	11	2%			0	1	54	48	U	22	U	14	U	19	U	16	U
Methyl isobutyl ketone	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Methylene chloride	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Styrene	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Tetrachloroethene	UG/KG	4	4%	43.2	NYSDEC HHB	0	2	54	48	U	4	J	14	U	19	U	16	U
Toluene	UG/KG	20	9%	2.646	BENTHIC-CHRONIC	5	5	54	48	U	22	U	14	U	19	U	16	U
Total Xylenes	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	48	U	22	U	14	U	19	U	16	U
Trichloroethene	UG/KG	18	7%	108	NYSDEC HHB	0	4	54	48	U	18	J	2	J	19	U	16	U
Vinyl chloride	UG/KG	0	0%	3.78	NYSDEC HHB	0	0	54	48	U	22	U	14	U	19	U	16	U
SEMI VOLATILE ORGANICS																		

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		RI Phase		RI Phase	
LOC_ID									SD12-31		SD12-32		SD12-33		67356		67356	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SD12-34		SD12-34	
SAMP_ID									12407		12406		12405		12202		12418	
DEPTH_TOP									0.3		0.2		0.3		DU		SA	
DEPTH_BOT									0.5		0.4		0.5		0.6		0.6	
SAMP_DATE									28-Oct-97		28-Oct-97		28-Oct-97		00-Jan-00		00-Jan-00	
QC_CODE									SA		SA		SA		SEDIMEN		SEDIMEN	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	8-Nov-97		8-Nov-97	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
1,2-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	80	U	870	U	110	U	110	U	120	U
1,3-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	80	U	870	U	110	U	110	U	120	U
1,4-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	80	U	870	U	110	U	110	U	120	U
2,2'-oxybis(1-Chloropropan	UG/KG	0	0%			0	0	5										
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	54	190	U	2100	U	270	U	260	U	300	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	54	190	U	2100	U	270	U	260	U	300	U
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
2-Chlorophenol	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
2-Methylnaphthalene	UG/KG	36	22%			0	12	54	6.2	J	870	U	110	U	110	U	120	U
2-Methylphenol	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
2-Nitroaniline	UG/KG	0	0%			0	0	54	190	U	2100	U	270	U	260	U	300	U
2-Nitrophenol	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	54	80	UJ	870	UJ	110	UJ	110	U	120	U
3-Nitroaniline	UG/KG	0	0%			0	0	54	190	U	2100	U	270	U	260	U	300	U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	54	190	U	2100	U	270	U	260	U	300	U
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
4-Chloroaniline	UG/KG	0	0%			0	0	54	80	UJ	870	UJ	110	UJ	110	U	120	U
4-Chlorophenyl phenyl eth	UG/KG	6	2%			0	1	54	80	U	870	U	110	U	110	U	120	U
4-Methylphenol	UG/KG	150	9%			0	5	54	80	U	870	U	8.4	J	110	U	120	U
4-Nitroaniline	UG/KG	0	0%			0	0	54	190	U	2100	U	270	U	260	U	300	U
4-Nitrophenol	UG/KG	0	0%			0	0	54	190	U	2100	U	270	U	260	U	300	U
Acenaphthene	UG/KG	500	41%	7560	BENTHIC-CHRONIC	0	22	54	21	J	500	J	110	U	110	U	120	U
Acenaphthylene	UG/KG	15	6%			0	3	54	80	U	870	U	110	U	110	U	120	U
Anthracene	UG/KG	830	48%	5.778	BENTHIC-CHRONIC	26	26	54	37	J	830	J	110	U	110	U	120	U
Benzo(a)anthracene	UG/KG	3100	72%	0.648	BENTHIC-CHRONIC	39	39	54	73	J	3100		18	J	44	J	32	J
Benzo(a)pyrene	UG/KG	3300	76%	70.2	NYSDEC HHB	21	41	54	74	J	3300		23	J	57	J	41	J
Benzo(b)fluoranthene	UG/KG	3200	81%	70.2	NYSDEC HHB	24	44	54	68	J	3300		26	J	73	J	78	J
Benzo(ghi)perylene	UG/KG	2100	70%			0	38	54	52	J	2100		22	J	60	J	50	J

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		RI Phase		RI Phase	
LOC_ID									SD12-31		SD12-32		SD12-33		67356		67356	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SD12-34		SD12-34	
SAMP_ID									12407		12406		12405		12202		12418	
DEPTH_TOP									0.3		0.2		0.3		DU		SA	
DEPTH_BOT									0.5		0.4		0.5		0.6		0.6	
SAMP_DATE									28-Oct-97		28-Oct-97		28-Oct-97		00-Jan-00		00-Jan-00	
QC_CODE									SA		SA		SA		SEDIMEN		SEDIMEN	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	8-Nov-97		8-Nov-97	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Benzo(k)fluoranthene	UG/KG	2700	54%	70.2	NYSDEC HHB	15	29	54	59	J	2700		21	J	46	J	120	U
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	49	80	U	870	U	110	U	110	U	120	U
Bis(2-Ethylhexyl)phthalate	UG/KG	5000	13%	10800	BENTHIC-CHRONIC	0	7	54	80	U	5000		110	U	76	J	120	U
Butylbenzylphthalate	UG/KG	42	17%			0	9	54	80	U	870	U	110	U	11	J	120	U
Carbazole	UG/KG	910	52%			0	28	54	37	J	910		110	U	11	J	7.8	J
Chrysene	UG/KG	3200	81%	70.2	NYSDEC HHB	23	44	54	[illegible]		3200		30	J	71	J	55	J
Di-n-butylphthalate	UG/KG	53	28%			0	15	54	80	U	870	U	10	J	9.5	J	120	U
Di-n-octylphthalate	UG/KG	140	20%			0	11	54	6.4	J	140	J	7.2	J	110	U	120	U
Dibenz(a,h)anthracene	UG/KG	860	56%			0	30	54	15	J	860	J	110	U	15	J	19	J
Dibenzofuran	UG/KG	64	30%			0	16	54	10	J	870	U	110	U	110	U	120	U
Diethyl phthalate	UG/KG	23	13%			0	7	54	80	U	870	U	110	U	20	J	120	U
Dimethylphthalate	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
Fluoranthene	UG/KG	6200	87%	55080	BENTHIC-CHRONIC	0	47	54	160		6200		40	J	93	J	71	J
Fluorene	UG/KG	340	37%	0.432	BENTHIC-CHRONIC	20	20	54	[illegible]	J	340	J	110	U	110	U	120	U
Hexachlorobenzene	UG/KG	6.2	2%	8.1	NYSDEC HHB	0	1	54	80	U	870	U	110	U	110	U	120	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
Hexachloroethane	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
Indeno(1,2,3-cd)pyrene	UG/KG	2000	70%	70.2	NYSDEC HHB	18	38	54	50	J	2000		20	J	40	J	34	J
Isophorone	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
N-Nitrosodiphenylamine	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
Naphthalene	UG/KG	49	13%	1.62	BENTHIC-CHRONIC	7	7	54	7	J	870	U	110	U	110	U	120	U
Nitrobenzene	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
Pentachlorophenol	UG/KG	0	0%			0	0	54	190	U	2100	U	270	U	260	U	300	U
Phenanthrene	UG/KG	3100	83%	6480	BENTHIC-CHRONIC	0	45	54	120		3100		22	J	48	J	32	J
Phenol	UG/KG	0	0%			0	0	54	80	U	870	U	110	U	110	U	120	U
Pyrene	UG/KG	5400	85%	51.894	BENTHIC-CHRONIC	30	46	54	140		5400		37	J	93	J	62	J
PESTICIDES/PCBS																		
4,4'-DDD	UG/KG	110	11%	0.54	NYSDEC HHB	6	6	54	3.3	J	17	U	5.5	U	5.4	U	6.2	U
4,4'-DDE	UG/KG	76	19%	0.54	NYSDEC HHB	10	10	54	4	U	17	U	5.5	U	5.4	U	6.2	U
4,4'-DDT	UG/KG	200	13%	0.54	NYSDEC HHB	7	7	54	4	U	17	U	5.5	U	5.4	U	6.2	U
Aldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	2	U	8.9	U	2.8	U	2.8	U	3.2	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		RI Phase		RI Phase	
LOC_ID									SD12-31		SD12-32		SD12-33		67356		67356	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SD12-34		SD12-34	
SAMP_ID									12407		12406		12405		12202		12418	
DEPTH_TOP									0.3		0.2		0.3		DU		SA	
DEPTH_BOT									0.5		0.4		0.5		0.6		0.6	
SAMP_DATE									28-Oct-97		28-Oct-97		28-Oct-97		00-Jan-00		00-Jan-00	
QC_CODE									SA		SA		SA		SEDIMEN		SEDIMEN	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	8-Nov-97		8-Nov-97	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Alpha-BHC	UG/KG	0	0%			0	0	54	2	U	8.9	U	2.8	U	2.8	U	3.2	U
Alpha-Chlordane	UG/KG	3.2	4%			0	2	54	2	U	8.9	U	2.8	U	2.8	U	3.2	U
Aroclor-1016	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	40	U	170	U	55	U	54	U	62	U
Aroclor-1221	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	81	U	350	U	110	U	110	U	130	U
Aroclor-1232	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	40	U	170	U	55	U	54	U	62	U
Aroclor-1242	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	40	U	170	U	55	U	54	U	62	U
Aroclor-1248	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	40	U	170	U	55	U	54	U	62	U
Aroclor-1254	UG/KG	1200	7%	0.0432	NYSDEC HHB	4	4	54	40	U	150	J	55	U	54	U	62	U
Aroclor-1260	UG/KG	37	4%	0.0432	NYSDEC HHB	2	2	54	40	U	170	U	55	U	54	U	[illegible]	J
Beta-BHC	UG/KG	0	0%			0	0	54	2	U	8.9	U	2.8	U	2.8	U	3.2	U
Delta-BHC	UG/KG	0	0%			0	0	54	2	U	8.9	U	2.8	U	2.8	U	3.2	U
Dieldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	4	U	17	U	5.5	U	5.4	U	6.2	U
Endosulfan I	UG/KG	3.6	4%	1.62	NYSDEC HHB	2	2	54	2	U	8.9	U	2.8	U	2.8	U	3.2	U
Endosulfan II	UG/KG	0	0%	1.62	BENTHIC-CHRONIC	0	0	54	4	U	17	U	5.5	U	5.4	U	6.2	U
Endosulfan sulfate	UG/KG	0	0%			0	0	54	4	U	17	U	5.5	U	5.4	U	6.2	U
Endrin	UG/KG	5.6	2%	43.2	BENTHIC-CHRONIC	0	1	54	4	U	17	U	5.5	U	5.4	U	6.2	U
Endrin aldehyde	UG/KG	7.6	4%			0	2	54	4	U	17	U	5.5	U	5.4	U	6.2	U
Endrin ketone	UG/KG	22	4%			0	2	54	4	U	17	U	5.5	U	5.4	U	6.2	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	54	2	U	8.9	U	2.8	U	2.8	U	3.2	U
Gamma-Chlordane	UG/KG	0	0%			0	0	54	2	U	8.9	U	2.8	U	2.8	U	3.2	U
Heptachlor	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	2	U	8.9	U	2.8	U	2.8	U	3.2	U
Heptachlor epoxide	UG/KG	11	6%	0.0432	NYSDEC HHB	3	3	54	2	U	8.9	U	2.8	U	2.8	U	3.2	U
Methoxychlor	UG/KG	0	0%			0	0	54	20	U	89	U	28	U	28	U	32	U
Toxaphene	UG/KG	0	0%			0	0	54	200	U	890	U	280	U	280	U	320	U
METALS																		
Aluminum	MG/KG	38700	100%			0	54	54	1670	J	38700	J	12600	J	9670		13000	
Antimony	MG/KG	2.8	7%	2		1	4	54	0.61	UJ	2.8		0.76	UJ	0.78	UJ	1.2	UJ
Arsenic	MG/KG	19.1	96%	6		10	52	54	0.53	U	19.1		4.8		3.4		5.3	
Barium	MG/KG	885	100%			0	54	54	13.3		303		77.4		45.1		58.8	
Beryllium	MG/KG	1.7	87%			0	47	54	0.1		1.7		0.56		0.45		0.55	
Cadmium	MG/KG	9	28%	0.6		8	15	54	0.17		9		0.11	U	0.07	U	0.11	U
Calcium	MG/KG	280000	100%			0	54	54	6180	J	199000	J	74700	J	78800		81300	
Chromium	MG/KG	130	100%	26		9	54	54	3.4	J	130	J	25.5	J	17.3		22.9	
Cobalt	MG/KG	75.3	80%			0	43	54	1.3	U	1.3	U	1.3	U	8.8		12.3	
Copper	MG/KG	1160	100%	16		49	54	54	4.3	J	1160	J	3	J	35.3		42.8	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		RI Phase		RI Phase	
LOC_ID									SD12-31		SD12-32		SD12-33		67356		67356	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SD12-34		SD12-34	
SAMP_ID									12407		12406		12405		12202		12418	
DEPTH_TOP									0.3		0.2		0.3		DU		SA	
DEPTH_BOT									0.5		0.4		0.5		0.6		0.6	
SAMP_DATE									28-Oct-97		28-Oct-97		28-Oct-97		00-Jan-00		00-Jan-00	
QC_CODE									SA		SA		SA		SEDIMEN		SEDIMEN	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		8-Nov-97		8-Nov-97	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Cyanide	MG/KG	2.6	4%			0	2	54	0.64	UJ	3	UJ	0.93	UJ	0.98	U	1.1	U
Iron	MG/KG	85900	100%	20000		38	54	54	2690	J	[illegible]	J	24300	J	19300		28300	
Lead	MG/KG	215	85%	31		8	46	54	3.8	J	215	J	20.7	J	20.7		26.4	
Magnesium	MG/KG	48100	100%			0	54	54	814	J	35300	J	10700	J	12600		13300	
Manganese	MG/KG	14000	91%	460		25	49	54	43.2	J	1300	J	385	J	261		487	
Mercury	MG/KG	1.7	33%	0.15		7	18	54	0.05	U	1.7		0.08		0.06	U	0.08	U
Nickel	MG/KG	126	100%	16		51	54	54	4.3	J	126	J	40.8	J	29.2		40.6	
Potassium	MG/KG	5500	100%			0	54	54	349		5500		1970		1890	J	2380	J
Selenium	MG/KG	6.2	46%			0	25	54	0.85	UJ	3.8	UJ	2.1	J	1.1	UJ	1.7	UJ
Silver	MG/KG	1.5	9%	1		1	5	54	0.23	U	1	U	0.29	U	0.47	U	0.74	U
Sodium	MG/KG	1550	48%			0	26	54	91.9		1550		304		158		215	U
Thallium	MG/KG	4	11%			0	6	54	1.3	U	5.7	U	1.6	U	1.4	U	2.2	U
Vanadium	MG/KG	70.3	100%			0	54	54	2.8		70.3		22.4		21.8		25.5	
Zinc	MG/KG	2650	91%	120		35	49	54	18.9	J	2650	J	380	J	144		157	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-35		SD12-36		SD12-36		SD12-37		SD12-38	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12433		12431		12430		12429		12427	
DEPTH_TOP									0.2		0.4		0.4		0.2		0.4	
DEPTH_BOT									0.4		0.6		0.6		0.4		0.6	
SAMP_DATE									08-Nov-97		09-Nov-97		09-Nov-97		08-Nov-97		08-Nov-97	
QC_CODE									SA		DU		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
VOLATILE ORGANICS																		
1,1,1-Trichloroethane	UG/KG	3	2%			0	1	54	45	U	13	U	16	U	16	U	17	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	NYSDEC HHB	0	0	54	45	U	13	U	16	U	16	U	17	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	NYSDEC HHB	0	0	54	45	U	13	U	16	U	16	U	17	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	NYSDEC HHB	0	0	54	45	U	13	U	16	U	16	U	17	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Acetone	UG/KG	95	37%			0	20	54	53		13	U	16	U	16	U	17	U
Benzene	UG/KG	0	0%	1.512	BENTHIC-CHRONIC	0	0	54	45	U	13	U	16	U	16	U	17	U
Bromodichloromethane	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Bromoform	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Carbon disulfide	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Carbon tetrachloride	UG/KG	0	0%	32.4	NYSDEC HHB	0	0	54	45	U	13	U	16	U	16	U	17	U
Chlorobenzene	UG/KG	0	0%	189	BENTHIC-CHRONIC	0	0	54	45	U	13	U	16	U	16	U	17	U
Chlorodibromomethane	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Chloroethane	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Chloroform	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Ethyl benzene	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Methyl bromide	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Methyl butyl ketone	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Methyl chloride	UG/KG	17	4%			0	2	54	45	U	13	U	16	U	16	U	17	U
Methyl ethyl ketone	UG/KG	11	2%			0	1	54	45	U	13	UJ	16	UJ	16	U	17	U
Methyl isobutyl ketone	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Methylene chloride	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Styrene	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Tetrachloroethene	UG/KG	4	4%	43.2	NYSDEC HHB	0	2	54	45	U	13	U	16	U	16	U	17	U
Toluene	UG/KG	20	9%	2.646	BENTHIC-CHRONIC	5	5	54	45	U	13	U	16	U	4	J	17	U
Total Xylenes	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	45	U	13	U	16	U	16	U	17	U
Trichloroethene	UG/KG	18	7%	108	NYSDEC HHB	0	4	54	45	U	13	U	16	U	16	U	17	U
Vinyl chloride	UG/KG	0	0%	3.78	NYSDEC HHB	0	0	54	45	U	13	U	16	U	16	U	17	U
SEMI VOLATILE ORGANICS																		

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-35		SD12-36		SD12-36		SD12-37		SD12-38	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12433		12431		12430		12429		12427	
DEPTH_TOP									0.2		0.4		0.4		0.2		0.4	
DEPTH_BOT									0.4		0.6		0.6		0.4		0.6	
SAMP_DATE									08-Nov-97		09-Nov-97		09-Nov-97		08-Nov-97		08-Nov-97	
QC_CODE									SA		DU		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
1,2-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	220	U	96	U	100	U	87	U	130	U
1,3-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	220	U	96	U	100	U	87	U	130	U
1,4-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	220	U	96	U	100	U	87	U	130	U
2,2'-oxybis(1-Chloropropan	UG/KG	0	0%			0	0	5										
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	54	530	U	230	U	240	U	210	U	310	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	54	530	U	230	UJ	240	UJ	210	U	310	U
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
2-Chlorophenol	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
2-Methylnaphthalene	UG/KG	36	22%			0	12	54	220	U	96	U	100	U	87	U	130	U
2-Methylphenol	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
2-Nitroaniline	UG/KG	0	0%			0	0	54	530	U	230	U	240	U	210	U	310	U
2-Nitrophenol	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	54	220	U	96	UJ	100	UJ	87	U	130	U
3-Nitroaniline	UG/KG	0	0%			0	0	54	530	U	230	UJ	240	UJ	210	U	310	U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	54	530	U	230	U	240	U	210	U	310	U
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
4-Chloroaniline	UG/KG	0	0%			0	0	54	220	U	96	UJ	100	UJ	87	U	130	U
4-Chlorophenyl phenyl eth	UG/KG	6	2%			0	1	54	220	U	96	U	100	U	87	U	130	U
4-Methylphenol	UG/KG	150	9%			0	5	54	220	U	96	U	100	U	87	U	130	U
4-Nitroaniline	UG/KG	0	0%			0	0	54	530	U	230	UJ	240	UJ	210	U	310	U
4-Nitrophenol	UG/KG	0	0%			0	0	54	530	U	230	U	240	U	210	U	310	U
Acenaphthene	UG/KG	500	41%	7560	BENTHIC-CHRONIC	0	22	54	220	U	96	U	100	U	87	U	130	U
Acenaphthylene	UG/KG	15	6%			0	3	54	220	U	96	U	100	U	87	U	130	U
Anthracene	UG/KG	830	48%	5.778	BENTHIC-CHRONIC	26	26	54	220	U	96	U	100	U	87	U	130	U
Benzo(a)anthracene	UG/KG	3100	72%	0.648	BENTHIC-CHRONIC	39	39	54	220	U	96	U	6.3	J	87	U	130	U
Benzo(a)pyrene	UG/KG	3300	76%	70.2	NYSDEC HHB	21	41	54	16	J	96	U	8.9	J	8.1	J	130	U
Benzo(b)fluoranthene	UG/KG	3200	81%	70.2	NYSDEC HHB	24	44	54	22	J	15	J	12	J	8.2	J	130	U
Benzo(ghi)perylene	UG/KG	2100	70%			0	38	54	20	J	96	U	100	U	87	U	130	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-35		SD12-36		SD12-36		SD12-37		SD12-38	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12433		12431		12430		12429		12427	
DEPTH_TOP									0.2		0.4		0.2		0.4		0.4	
DEPTH_BOT									0.4		0.6		0.6		0.4		0.6	
SAMP_DATE									08-Nov-97		09-Nov-97		09-Nov-97		08-Nov-97		08-Nov-97	
QC_CODE									SA		DU		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Benzo(k)fluoranthene	UG/KG	2700	54%	70.2	NYSDEC HHB	15	29	54	18	J	96	U	9.2	J	87	U	130	U
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	49	220	U	96	U	100	U	87	U	130	U
Bis(2-Ethylhexyl)phthalate	UG/KG	5000	13%	10800	BENTHIC-CHRONIC	0	7	54	220	U	96	U	100	U	87	U	130	U
Butylbenzylphthalate	UG/KG	42	17%			0	9	54	220	U	96	U	100	U	87	U	130	U
Carbazole	UG/KG	910	52%			0	28	54	220	U	96	U	100	U	87	U	130	U
Chrysene	UG/KG	3200	81%	70.2	NYSDEC HHB	23	44	54	22	J	15	J	15	J	7.6	J	130	U
Di-n-butylphthalate	UG/KG	53	28%			0	15	54	220	U	96	U	100	U	87	U	130	U
Di-n-octylphthalate	UG/KG	140	20%			0	11	54	220	U	96	U	100	U	87	U	130	U
Dibenz(a,h)anthracene	UG/KG	860	56%			0	30	54	220	U	96	U	100	U	87	U	130	U
Dibenzofuran	UG/KG	64	30%			0	16	54	220	U	96	U	100	U	87	U	130	U
Diethyl phthalate	UG/KG	23	13%			0	7	54	23	J	96	U	100	U	87	U	130	U
Dimethylphthalate	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
Fluoranthene	UG/KG	6200	87%	55080	BENTHIC-CHRONIC	0	47	54	37	J	16	J	16	J	7	J	130	U
Fluorene	UG/KG	340	37%	0.432	BENTHIC-CHRONIC	20	20	54	220	U	96	U	100	U	87	U	130	U
Hexachlorobenzene	UG/KG	6.2	2%	8.1	NYSDEC HHB	0	1	54	220	U	96	U	100	U	87	U	130	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
Hexachloroethane	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
Indeno(1,2,3-cd)pyrene	UG/KG	2000	70%	70.2	NYSDEC HHB	18	38	54	16	J	96	U	100	U	87	U	130	U
Isophorone	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
N-Nitrosodiphenylamine	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
Naphthalene	UG/KG	49	13%	1.62	BENTHIC-CHRONIC	7	7	54	220	U	96	U	100	U	87	U	130	U
Nitrobenzene	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
Pentachlorophenol	UG/KG	0	0%			0	0	54	530	U	230	U	240	U	210	U	310	U
Phenanthrene	UG/KG	3100	83%	6480	BENTHIC-CHRONIC	0	45	54	24	J	10	J	11	J	6.5	J	130	U
Phenol	UG/KG	0	0%			0	0	54	220	U	96	U	100	U	87	U	130	U
Pyrene	UG/KG	5400	85%	51.894	BENTHIC-CHRONIC	30	46	54	34	J	14	J	16	J	7	J	130	U
PESTICIDES/PCBS																		
4,4'-DDD	UG/KG	110	11%	0.54	NYSDEC HHB	6	6	54	11	U	4.8	U	5	U	4.3	U	6.5	U
4,4'-DDE	UG/KG	76	19%	0.54	NYSDEC HHB	10	10	54	11	U	4.8	U	5	U	4.3	U	6.5	U
4,4'-DDT	UG/KG	200	13%	0.54	NYSDEC HHB	7	7	54	11	U	4.8	U	5	U	4.3	U	6.5	U
Aldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	5.7	U	2.5	U	2.6	U	2.2	U	3.3	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-35		SD12-36		SD12-36		SD12-37		SD12-38	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12433		12431		12430		12429		12427	
DEPTH_TOP									0.2		0.4		0.4		0.2		0.4	
DEPTH_BOT									0.4		0.6		0.6		0.4		0.6	
SAMP_DATE									08-Nov-97		09-Nov-97		09-Nov-97		08-Nov-97		08-Nov-97	
QC_CODE									SA		DU		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Alpha-BHC	UG/KG	0	0%			0	0	54	5.7	U	2.5	U	2.6	U	2.2	U	3.3	U
Alpha-Chlordane	UG/KG	3.2	4%			0	2	54	5.7	U	2.5	U	2.6	U	2.2	U	3.3	U
Aroclor-1016	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	110	U	48	U	50	U	43	U	65	U
Aroclor-1221	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	220	U	97	U	100	U	88	U	130	U
Aroclor-1232	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	110	U	48	U	50	U	43	U	65	U
Aroclor-1242	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	110	U	48	U	50	U	43	U	65	U
Aroclor-1248	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	110	U	48	U	50	U	43	U	65	U
Aroclor-1254	UG/KG	1200	7%	0.0432	NYSDEC HHB	4	4	54	110	U	48	U	50	U	43	U	65	U
Aroclor-1260	UG/KG	37	4%	0.0432	NYSDEC HHB	2	2	54	110	U	48	U	50	U	43	U	65	U
Beta-BHC	UG/KG	0	0%			0	0	54	5.7	U	2.5	U	2.6	U	2.2	U	3.3	U
Delta-BHC	UG/KG	0	0%			0	0	54	5.7	U	2.5	U	2.6	U	2.2	U	3.3	U
Dieldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	11	U	4.8	U	5	U	4.3	U	6.5	U
Endosulfan I	UG/KG	3.6	4%	1.62	NYSDEC HHB	2	2	54	5.7	U	2.5	U	2.6	U	2.2	U	3.3	U
Endosulfan II	UG/KG	0	0%	1.62	BENTHIC-CHRONIC	0	0	54	11	U	4.8	U	5	U	4.3	U	6.5	U
Endosulfan sulfate	UG/KG	0	0%			0	0	54	11	U	4.8	U	5	U	4.3	U	6.5	U
Endrin	UG/KG	5.6	2%	43.2	BENTHIC-CHRONIC	0	1	54	11	U	4.8	U	5	U	4.3	U	6.5	U
Endrin aldehyde	UG/KG	7.6	4%			0	2	54	11	U	4.8	U	5	U	4.3	U	6.5	U
Endrin ketone	UG/KG	22	4%			0	2	54	11	U	4.8	U	5	U	4.3	U	6.5	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	54	5.7	U	2.5	U	2.6	U	2.2	U	3.3	U
Gamma-Chlordane	UG/KG	0	0%			0	0	54	5.7	U	2.5	U	2.6	U	2.2	U	3.3	U
Heptachlor	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	5.7	U	2.5	U	2.6	U	2.2	U	3.3	U
Heptachlor epoxide	UG/KG	11	6%	0.0432	NYSDEC HHB	3	3	54	5.7	U	2.5	U	2.6	U	2.2	U	3.3	U
Methoxychlor	UG/KG	0	0%			0	0	54	57	U	25	U	26	U	22	U	33	U
Toxaphene	UG/KG	0	0%			0	0	54	570	U	250	U	260	U	220	U	330	U
METALS																		
Aluminum	MG/KG	38700	100%			0	54	54	15800		9350		9010		9050		13100	
Antimony	MG/KG	2.8	7%	2		1	4	54	1.8	UJ	0.99	UJ	1	UJ	0.77	UJ	1.2	UJ
Arsenic	MG/KG	19.1	96%	6		10	52	54	1.9	U	4.8		2.2		4		5.8	
Barium	MG/KG	885	100%			0	54	54	129		50.8		57		46.3		91.1	
Beryllium	MG/KG	1.7	87%			0	47	54	0.7		0.41	J	0.37	J	0.26		0.52	
Cadmium	MG/KG	9	28%	0.6		8	15	54	0.17		0.08	U	0.09	U	0.07	U	0.1	U
Calcium	MG/KG	280000	100%			0	54	54	5100		198000		36700		108000		74300	
Chromium	MG/KG	130	100%	26		9	54	54	18.8		17.9		16.1		16.5		20.3	
Cobalt	MG/KG	75.3	80%			0	43	54	12.1		10.7		9.2		9.5		12.1	
Copper	MG/KG	1160	100%	16		49	54	54	21.7		28.7		32.8		20		23.4	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-35		SD12-36		SD12-36		SD12-37		SD12-38	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12433		12431		12430		12429		12427	
DEPTH_TOP									0.2		0.4		0.4		0.2		0.4	
DEPTH_BOT									0.4		0.6		0.6		0.4		0.6	
SAMP_DATE									08-Nov-97		09-Nov-97		09-Nov-97		08-Nov-97		08-Nov-97	
QC_CODE									SA		DU		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Cyanide	MG/KG	2.6	4%			0	2	54	2	U	0.87	U	0.86	U	0.82	U	1.2	U
Iron	MG/KG	85900	100%	20000		38	54	54	24100		24100		17900		22600		27900	
Lead	MG/KG	215	85%	31		8	46	54	28.9		16.2		17.7		14.2		20.5	
Magnesium	MG/KG	48100	100%			0	54	54	3040		12600		6170		22500		8150	
Manganese	MG/KG	14000	91%	460		25	49	54	753		486		422		633		617	
Mercury	MG/KG	1.7	33%	0.15		7	18	54	0.13	U	0.07	U	0.07	U	0.06	U	0.08	U
Nickel	MG/KG	126	100%	16		51	54	54	25.7		33		28.9		28.1		30.4	
Potassium	MG/KG	5500	100%			0	54	54	2750	J	1280	J	1280	J	1410	J	2050	J
Selenium	MG/KG	6.2	46%			0	25	54	2.4	UJ	1.3	U	1.4	U	1	UJ	1.6	UJ
Silver	MG/KG	1.5	9%	1		1	5	54	1.1	U	0.59	U	0.62	U	0.46	U	0.73	U
Sodium	MG/KG	1550	48%			0	26	54	316	U	171	U	180	U	134	U	214	
Thallium	MG/KG	4	11%			0	6	54	3.3	U	1.8	U	1.9	U	1.4	U	2.2	U
Vanadium	MG/KG	70.3	100%			0	54	54	23.2		17.6		15.3		16.5		23.6	
Zinc	MG/KG	2650	91%	120		35	49	54	92.5		190	J	238	J	147		278	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-39		SD12-40		SD12-41		SD12-42		SD12-43	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12426		12404		12403		12444		12451	
DEPTH_TOP									0.5		0.4		0.3		0.3		0.1	
DEPTH_BOT									0.7		0.6		0.5		0.5		0.3	
SAMP_DATE									07-Nov-97		28-Oct-97		28-Oct-97		07-Nov-97		09-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
VOLATILE ORGANICS																		
1,1,1-Trichloroethane	UG/KG	3	2%			0	1	54	18	U	17	U	17	U	16	U	16	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	NYSDEC HHB	0	0	54	18	U	17	U	17	U	16	U	16	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	NYSDEC HHB	0	0	54	18	U	17	U	17	U	16	U	16	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	NYSDEC HHB	0	0	54	18	U	17	U	17	U	16	U	16	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Acetone	UG/KG	95	37%			0	20	54	18	UJ	48		17	U	16	UJ	16	U
Benzene	UG/KG	0	0%	1.512	BENTHIC-CHRONIC	0	0	54	18	U	17	U	17	U	16	U	16	U
Bromodichloromethane	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Bromoform	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Carbon disulfide	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Carbon tetrachloride	UG/KG	0	0%	32.4	NYSDEC HHB	0	0	54	18	U	17	U	17	U	16	U	16	U
Chlorobenzene	UG/KG	0	0%	189	BENTHIC-CHRONIC	0	0	54	18	U	17	U	17	U	16	U	16	U
Chlorodibromomethane	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Chloroethane	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Chloroform	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Ethyl benzene	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Methyl bromide	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Methyl butyl ketone	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Methyl chloride	UG/KG	17	4%			0	2	54	18	U	17	U	17	U	16	U	16	U
Methyl ethyl ketone	UG/KG	11	2%			0	1	54	18	U	11	J	17	U	16	U	16	U
Methyl isobutyl ketone	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Methylene chloride	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Styrene	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Tetrachloroethene	UG/KG	4	4%	43.2	NYSDEC HHB	0	2	54	18	U	17	U	17	U	16	U	16	U
Toluene	UG/KG	20	9%	2.646	BENTHIC-CHRONIC	5	5	54	18	U	**20**		17	U	16	U	16	U
Total Xylenes	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	18	U	17	U	17	U	16	U	16	U
Trichloroethene	UG/KG	18	7%	108	NYSDEC HHB	0	4	54	18	U	17	U	17	U	16	U	16	U
Vinyl chloride	UG/KG	0	0%	3.78	NYSDEC HHB	0	0	54	18	U	17	U	17	U	16	U	16	U
SEMI VOLATILE ORGANICS																		

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-39		SD12-40		SD12-41		SD12-42		SD12-43	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12426		12404		12403		12444		12451	
DEPTH_TOP									0.5		0.4		0.3		0.3		0.1	
DEPTH_BOT									0.7		0.6		0.5		0.5		0.3	
SAMP_DATE									07-Nov-97		28-Oct-97		28-Oct-97		07-Nov-97		09-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
1,2-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	140	U	120	U	120	U	100	U	100	U
1,3-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	140	U	120	U	120	U	100	U	100	U
1,4-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	140	U	120	U	120	U	100	U	100	U
2,2'-oxybis(1-Chloropropan	UG/KG	0	0%			0	0	5										
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	54	350	U	280	U	280	U	250	U	250	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	54	350	U	280	U	280	U	250	U	250	U
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
2-Chlorophenol	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
2-Methylnaphthalene	UG/KG	36	22%			0	12	54	140	U	11	J	14	J	100	U	12	J
2-Methylphenol	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
2-Nitroaniline	UG/KG	0	0%			0	0	54	350	U	280	U	280	U	250	U	250	U
2-Nitrophenol	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	54	140	UJ	120	UJ	120	UJ	100	UJ	100	U
3-Nitroaniline	UG/KG	0	0%			0	0	54	350	U	280	U	280	U	250	U	250	U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	54	350	U	280	U	280	U	250	U	250	U
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
4-Chloroaniline	UG/KG	0	0%			0	0	54	140	UJ	120	UJ	120	UJ	100	UJ	100	U
4-Chlorophenyl phenyl eth	UG/KG	6	2%			0	1	54	140	U	120	U	120	U	100	U	100	U
4-Methylphenol	UG/KG	150	9%			0	5	54	140	U	150		24	J	100	U	100	U
4-Nitroaniline	UG/KG	0	0%			0	0	54	350	U	280	U	280	U	250	U	250	U
4-Nitrophenol	UG/KG	0	0%			0	0	54	350	U	280	U	280	U	250	U	250	U
Acenaphthene	UG/KG	500	41%	7560	BENTHIC-CHRONIC	0	22	54	49	J	7.9	J	24	J	73	J	80	J
Acenaphthylene	UG/KG	15	6%			0	3	54	140	U	120	U	120	U	100	U	100	U
Anthracene	UG/KG	830	48%	5.778	BENTHIC-CHRONIC	26	26	54	50	J	9.5	J	43	J	[illegible]	J	93	J
Benzo(a)anthracene	UG/KG	3100	72%	0.648	BENTHIC-CHRONIC	39	39	54	200		43	J	150		350		270	
Benzo(a)pyrene	UG/KG	3300	76%	70.2	NYSDEC HHB	21	41	54	200		49	J	180		340		270	
Benzo(b)fluoranthene	UG/KG	3200	81%	70.2	NYSDEC HHB	24	44	54	370		48	J	200		350		290	
Benzo(ghi)perylene	UG/KG	2100	70%			0	38	54	160		41	J	120		220		180	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-39		SD12-40		SD12-41		SD12-42		SD12-43	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12426		12404		12403		12444		12451	
DEPTH_TOP									0.5		0.4		0.3		0.3		0.1	
DEPTH_BOT									0.7		0.6		0.5		0.5		0.3	
SAMP_DATE									07-Nov-97		28-Oct-97		28-Oct-97		07-Nov-97		09-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Benzo(k)fluoranthene	UG/KG	2700	54%	70.2	NYSDEC HHB	15	29	54	140	U	43	J	[illegible]		350		230	
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	49	140	U	120	U	120	U	100	U	100	U
Bis(2-Ethylhexyl)phthalate	UG/KG	5000	13%	10800	BENTHIC-CHRONIC	0	7	54	57	J	120	U	120	U	100	U	100	U
Butylbenzylphthalate	UG/KG	42	17%			0	9	54	140	U	42	J	40	J	100	U	100	U
Carbazole	UG/KG	910	52%			0	28	54	100	J	17	J	22	J	160		170	
Chrysene	UG/KG	3200	81%	70.2	NYSDEC HHB	23	44	54	[illegible]		56	J	[illegible]		[illegible]		[illegible]	
Di-n-butylphthalate	UG/KG	53	28%			0	15	54	11	J	7.9	J	6.8	J	100	U	21	J
Di-n-octylphthalate	UG/KG	140	20%			0	11	54	140	U	12	J	120	U	100	U	100	U
Dibenz(a,h)anthracene	UG/KG	860	56%			0	30	54	73	J	15	J	50	J	110		48	J
Dibenzofuran	UG/KG	64	30%			0	16	54	20	J	120	U	14	J	23	J	34	J
Diethyl phthalate	UG/KG	23	13%			0	7	54	140	U	120	U	120	U	100	U	100	U
Dimethylphthalate	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
Fluoranthene	UG/KG	6200	87%	55080	BENTHIC-CHRONIC	0	47	54	460		76	J	270		800		680	
Fluorene	UG/KG	340	37%	0.432	BENTHIC-CHRONIC	20	20	54	[illegible]	J	120	U	[illegible]	J	[illegible]	J	[illegible]	J
Hexachlorobenzene	UG/KG	6.2	2%	8.1	NYSDEC HHB	0	1	54	140	U	120	U	120	U	100	U	100	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
Hexachloroethane	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
Indeno(1,2,3-cd)pyrene	UG/KG	2000	70%	70.2	NYSDEC HHB	18	38	54	[illegible]	J	34	J	[illegible]	J	200		160	
Isophorone	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
N-Nitrosodiphenylamine	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
Naphthalene	UG/KG	49	13%	1.62	BENTHIC-CHRONIC	7	7	54	140	U	120	U	120	U	100	U	[illegible]	J
Nitrobenzene	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
Pentachlorophenol	UG/KG	0	0%			0	0	54	350	U	280	U	280	U	250	U	250	U
Phenanthrene	UG/KG	3100	83%	6480	BENTHIC-CHRONIC	0	45	54	330		60	J	120		520		560	
Phenol	UG/KG	0	0%			0	0	54	140	U	120	U	120	U	100	U	100	U
Pyrene	UG/KG	5400	85%	51.894	BENTHIC-CHRONIC	30	46	54	[illegible]		[illegible]	J	[illegible]		[illegible]		[illegible]	
PESTICIDES/PCBS																		
4,4'-DDD	UG/KG	110	11%	0.54	NYSDEC HHB	6	6	54	7.2	U	5.9	U	5.8	U	5.1	U	5.2	U
4,4'-DDE	UG/KG	76	19%	0.54	NYSDEC HHB	10	10	54	7.2	U	5.9	U	5.8	U	5.1	U	5.2	U
4,4'-DDT	UG/KG	200	13%	0.54	NYSDEC HHB	7	7	54	7.2	U	5.9	U	5.8	U	5.1	U	5.2	U
Aldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	3.7	U	3	U	3	U	2.6	U	2.6	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-39		SD12-40		SD12-41		SD12-42		SD12-43	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12426		12404		12403		12444		12451	
DEPTH_TOP									0.5		0.4		0.3		0.3		0.1	
DEPTH_BOT									0.7		0.6		0.5		0.5		0.3	
SAMP_DATE									07-Nov-97		28-Oct-97		28-Oct-97		07-Nov-97		09-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Alpha-BHC	UG/KG	0	0%			0	0	54	3.7	U	3	U	3	U	2.6	U	2.6	U
Alpha-Chlordane	UG/KG	3.2	4%			0	2	54	3.7	U	3	U	3	U	2.6	U	2.6	U
Aroclor-1016	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	72	U	59	U	58	U	51	U	52	U
Aroclor-1221	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	140	U	120	U	120	U	100	U	100	U
Aroclor-1232	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	72	U	59	U	58	U	51	U	52	U
Aroclor-1242	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	72	U	59	U	58	U	51	U	52	U
Aroclor-1248	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	72	U	59	U	58	U	51	U	52	U
Aroclor-1254	UG/KG	1200	7%	0.0432	NYSDEC HHB	4	4	54	72	U	59	U	71		51	U	52	U
Aroclor-1260	UG/KG	37	4%	0.0432	NYSDEC HHB	2	2	54	72	U	59	U	58	U	51	U	52	U
Beta-BHC	UG/KG	0	0%			0	0	54	3.7	U	3	U	3	U	2.6	U	2.6	U
Delta-BHC	UG/KG	0	0%			0	0	54	3.7	U	3	U	3	U	2.6	U	2.6	U
Dieldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	7.2	U	5.9	U	5.8	U	5.1	U	5.2	U
Endosulfan I	UG/KG	3.6	4%	1.62	NYSDEC HHB	2	2	54	2	J	3	U	3	U	2.6	U	2.6	U
Endosulfan II	UG/KG	0	0%	1.62	BENTHIC-CHRONIC	0	0	54	7.2	U	5.9	U	5.8	U	5.1	U	5.2	U
Endosulfan sulfate	UG/KG	0	0%			0	0	54	7.2	U	5.9	U	5.8	U	5.1	U	5.2	U
Endrin	UG/KG	5.6	2%	43.2	BENTHIC-CHRONIC	0	1	54	7.2	U	5.9	U	5.8	U	5.1	U	5.2	U
Endrin aldehyde	UG/KG	7.6	4%			0	2	54	7.2	U	5.9	U	7.6		5.1	U	5.2	U
Endrin ketone	UG/KG	22	4%			0	2	54	7.2	U	5.9	U	5.8	U	5.1	U	5.2	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	54	3.7	U	3	U	3	U	2.6	U	2.6	U
Gamma-Chlordane	UG/KG	0	0%			0	0	54	3.7	U	3	U	3	U	2.6	U	2.6	U
Heptachlor	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	3.7	U	3	U	3	U	2.6	U	2.6	U
Heptachlor epoxide	UG/KG	11	6%	0.0432	NYSDEC HHB	3	3	54	3.7	U	3	U	3	U	2.6	U	2.6	U
Methoxychlor	UG/KG	0	0%			0	0	54	37	U	30	U	30	U	26	U	26	U
Toxaphene	UG/KG	0	0%			0	0	54	370	U	300	U	300	U	260	U	260	U
METALS																		
Aluminum	MG/KG	38700	100%			0	54	54	15000	J	12400	J	11200	J	7680	J	10200	
Antimony	MG/KG	2.8	7%	2		1	4	54	1	UJ	0.91	UJ	0.88	UJ	0.82	UJ	0.91	UJ
Arsenic	MG/KG	19.1	96%	6		10	52	54	6		4.9		3.5		5.3		4.7	
Barium	MG/KG	885	100%			0	54	54	105		72.6		82.7		69.4		70.1	
Beryllium	MG/KG	1.7	87%			0	47	54	0.59		0.52		0.1	U	0.31		0.39	
Cadmium	MG/KG	9	28%	0.6		8	15	54	0.14	U	0.13	U	0.58		0.15		0.08	U
Calcium	MG/KG	280000	100%			0	54	54	16000	J	17000	J	46400	J	43500	J	77900	
Chromium	MG/KG	130	100%	26		9	54	54	23.4	J	21.1	J	18.4	J	[illegible]	J	15.8	
Cobalt	MG/KG	75.3	80%			0	43	54	12.4		1.3	U	1.3	U	9.1		8.7	
Copper	MG/KG	1160	100%	16		49	54	54	27.9	J	28.6	J	27.6	J	87.8	J	24.7	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-39		SD12-40		SD12-41		SD12-42		SD12-43	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12426		12404		12403		12444		12451	
DEPTH_TOP									0.5		0.4		0.3		0.3		0.1	
DEPTH_BOT									0.7		0.6		0.5		0.5		0.3	
SAMP_DATE									07-Nov-97		28-Oct-97		28-Oct-97		07-Nov-97		09-Nov-97	
QC_CODE									SA		SA		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES										
Cyanide	MG/KG	2.6	4%			0	2	54	1.2	UJ	0.89	UJ	0.9	UJ	0.91	UJ	0.93	UJ
Iron	MG/KG	85900	100%	20000		38	54	54	[redacted]	J	[redacted]	J	17000	J	18500	J	18500	
Lead	MG/KG	215	85%	31		8	46	54	22.7	J	20	J	27.3	UJ	33.9	J	21.3	J
Magnesium	MG/KG	48100	100%			0	54	54	6220	J	5550	J	7020	J	10800	J	14300	
Manganese	MG/KG	14000	91%	460		25	49	54	[redacted]	J	422	J	249	UJ	368	J	[redacted]	
Mercury	MG/KG	1.7	33%	0.15		7	18	54	0.09	U	0.11		0.1	U	0.74		0.06	U
Nickel	MG/KG	126	100%	16		51	54	54	37.3	J	37.3	J	29.3	J	48.7	J	25.2	
Potassium	MG/KG	5500	100%			0	54	54	2450		1860		2270		1580		2250	
Selenium	MG/KG	6.2	46%			0	25	54	2.1	J	1.3	UJ	2	J	0.9	UJ	2.4	
Silver	MG/KG	1.5	9%	1		1	5	54	0.38	U	0.35	U	0.33	U	0.25	U	0.54	U
Sodium	MG/KG	1550	48%			0	26	54	150	U	140		186	U	110		227	
Thallium	MG/KG	4	11%			0	6	54	2.1	U	1.9	U	1.8	U	1.4	U	1.6	U
Vanadium	MG/KG	70.3	100%			0	54	54	28.2		21.3		22.6		16.6		20.4	
Zinc	MG/KG	2650	91%	120		35	49	54	192	J	242	J	232	UJ	451	J	67.3	

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-44		SD12-45		SD12-46		SD12-47	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12464		12450		12443		12446	
DEPTH_TOP									0.3		0.2		0.15		0.2	
DEPTH_BOT									0.5		0.4		0.3		0.4	
SAMP_DATE									05-Dec-97		09-Nov-97		06-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES								
VOLATILE ORGANICS																
1,1,1-Trichloroethane	UG/KG	3	2%			0	1	54	11	U	18	U	18	U	18	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	NYSDEC HHB	0	0	54	11	U	18	U	18	U	18	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	NYSDEC HHB	0	0	54	11	U	18	U	18	U	18	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	NYSDEC HHB	0	0	54	11	U	18	U	18	U	18	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Acetone	UG/KG	95	37%			0	20	54	19	J	6	J	18	UJ	18	UJ
Benzene	UG/KG	0	0%	1.512	BENTHIC-CHRONIC	0	0	54	11	U	18	U	18	U	18	U
Bromodichloromethane	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Bromoform	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Carbon disulfide	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Carbon tetrachloride	UG/KG	0	0%	32.4	NYSDEC HHB	0	0	54	11	U	18	U	18	U	18	U
Chlorobenzene	UG/KG	0	0%	189	BENTHIC-CHRONIC	0	0	54	11	U	18	U	18	U	18	U
Chlorodibromomethane	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Chloroethane	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Chloroform	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Ethyl benzene	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Methyl bromide	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Methyl butyl ketone	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Methyl chloride	UG/KG	17	4%			0	2	54	11	U	18	U	18	U	18	U
Methyl ethyl ketone	UG/KG	11	2%			0	1	54	11	UJ	18	U	18	U	18	U
Methyl isobutyl ketone	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Methylene chloride	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Styrene	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Tetrachloroethene	UG/KG	4	4%	43.2	NYSDEC HHB	0	2	54	11	U	18	U	18	U	18	U
Toluene	UG/KG	20	9%	2.646	BENTHIC-CHRONIC	5	5	54	5	J	18	U	18	U	18	U
Total Xylenes	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	54	11	U	18	U	18	U	18	U
Trichloroethene	UG/KG	18	7%	108	NYSDEC HHB	0	4	54	11	U	18	U	18	U	18	U
Vinyl chloride	UG/KG	0	0%	3.78	NYSDEC HHB	0	0	54	11	U	18	U	18	U	18	U
SEMI VOLATILE ORGANICS																

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-44		SD12-45		SD12-46		SD12-47	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12464		12450		12443		12446	
DEPTH_TOP									0.3		0.2		0.15		0.2	
DEPTH_BOT									0.5		0.4		0.3		0.4	
SAMP_DATE									05-Dec-97		09-Nov-97		06-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES								
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
1,2-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	82	U	130	U	100	U	130	U
1,3-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	82	U	130	U	100	U	130	U
1,4-Dichlorobenzene	UG/KG	0	0%	648	BENTHIC-CHRONIC	0	0	54	82	U	130	U	100	U	130	U
2,2'-oxybis(1-Chloropropan	UG/KG	0	0%			0	0	5								
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	54	200	U	320	U	240	U	320	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	54	200	UJ	320	U	240	U	320	U
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
2-Chlorophenol	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
2-Methylnaphthalene	UG/KG	36	22%			0	12	54	82	U	130	U	100	U	130	U
2-Methylphenol	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
2-Nitroaniline	UG/KG	0	0%			0	0	54	200	U	320	U	240	U	320	U
2-Nitrophenol	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	54	82	U	130	U	100	UJ	130	UJ
3-Nitroaniline	UG/KG	0	0%			0	0	54	200	UJ	320	U	240	U	320	U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	54	200	UJ	320	U	240	U	320	U
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
4-Chloroaniline	UG/KG	0	0%			0	0	54	82	UJ	130	U	100	U	130	UJ
4-Chlorophenyl phenyl eth	UG/KG	6	2%			0	1	54	82	U	130	U	100	U	130	U
4-Methylphenol	UG/KG	150	9%			0	5	54	82	U	130	U	100	U	130	U
4-Nitroaniline	UG/KG	0	0%			0	0	54	200	U	320	U	240	UJ	320	U
4-Nitrophenol	UG/KG	0	0%			0	0	54	200	UJ	320	U	240	U	320	U
Acenaphthene	UG/KG	500	41%	7560	BENTHIC-CHRONIC	0	22	54	45	J	36	J	30	J	130	U
Acenaphthylene	UG/KG	15	6%			0	3	54	82	U	130	U	100	U	130	U
Anthracene	UG/KG	830	48%	5.778	BENTHIC-CHRONIC	26	26	54	**66**	J	**45**	J	**[illegible]**	J	**[illegible]**	J
Benzo(a)anthracene	UG/KG	3100	72%	0.648	BENTHIC-CHRONIC	39	39	54	**220**		**280**		**110**		**76**	J
Benzo(a)pyrene	UG/KG	3300	76%	70.2	NYSDEC HHB	21	41	54	**210**		**320**		**120**		**110**	J
Benzo(b)fluoranthene	UG/KG	3200	81%	70.2	NYSDEC HHB	24	44	54	**360**		**400**		**210**		**180**	
Benzo(ghi)perylene	UG/KG	2100	70%			0	38	54	120		220		90	J	80	J

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-44		SD12-45		SD12-46		SD12-47	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12464		12450		12443		12446	
DEPTH_TOP									0.3		0.2		0.15		0.2	
DEPTH_BOT									0.5		0.4		0.3		0.4	
SAMP_DATE									05-Dec-97		09-Nov-97		06-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES								
Benzo(k)fluoranthene	UG/KG	2700	54%	70.2	NYSDEC HHB	15	29	54	82	U	[illegible]		100	U	130	U
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	49	82	U	130	U	100	U	130	U
Bis(2-Ethylhexyl)phthalate	UG/KG	5000	13%	10800	BENTHIC-CHRONIC	0	7	54	200	J	540		100	U	130	U
Butylbenzylphthalate	UG/KG	42	17%			0	9	54	27	J	35	J	100	U	130	U
Carbazole	UG/KG	910	52%			0	28	54	73	J	91	J-	60	J	24	J
Chrysene	UG/KG	3200	81%	70.2	NYSDEC HHB	23	44	54	[illegible]		380		130		[illegible]	J
Di-n-butylphthalate	UG/KG	53	28%			0	15	54	12	J	15	J	100	U	130	U
Di-n-octylphthalate	UG/KG	140	20%			0	11	54	13	J	29	J	100	U	130	U
Dibenz(a,h)anthracene	UG/KG	860	56%			0	30	54	57	J	67	J	43	J	34	J
Dibenzofuran	UG/KG	64	30%			0	16	54	20	J	13	J	9.2	J	130	U
Diethyl phthalate	UG/KG	23	13%			0	7	54	82	U	130	U	100	U	130	U
Dimethylphthalate	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
Fluoranthene	UG/KG	6200	87%	55080	BENTHIC-CHRONIC	0	47	54	590		650		250		170	
Fluorene	UG/KG	340	37%	0.432	BENTHIC-CHRONIC	20	20	54	36	J	22	J	18	J	130	U
Hexachlorobenzene	UG/KG	6.2	2%	8.1	NYSDEC HHB	0	1	54	82	U	130	U	100	U	130	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	54	82	UJ	130	U	100	U	130	U
Hexachloroethane	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
Indeno(1,2,3-cd)pyrene	UG/KG	2000	70%	70.2	NYSDEC HHB	18	38	54	110		200		73	J	60	J
Isophorone	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
N-Nitrosodiphenylamine	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
Naphthalene	UG/KG	49	13%	1.62	BENTHIC-CHRONIC	7	7	54	[illegible]	J	130	U	100	U	130	U
Nitrobenzene	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
Pentachlorophenol	UG/KG	0	0%			0	0	54	200	UJ	320	U	240	U	320	U
Phenanthrene	UG/KG	3100	83%	6480	BENTHIC-CHRONIC	0	45	54	400		310		170		71	J
Phenol	UG/KG	0	0%			0	0	54	82	U	130	U	100	U	130	U
Pyrene	UG/KG	5400	85%	51.894	BENTHIC-CHRONIC	30	46	54	390		590		210		140	
PESTICIDES/PCBS																
4,4'-DDD	UG/KG	110	11%	0.54	NYSDEC HHB	6	6	54	4.1	U	110	J	5	U	6.6	U
4,4'-DDE	UG/KG	76	19%	0.54	NYSDEC HHB	10	10	54	[illegible]		76		5	U	6.6	U
4,4'-DDT	UG/KG	200	13%	0.54	NYSDEC HHB	7	7	54	9.3		200	J	5	U	6.6	U
Aldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	2.1	U	2.7	U	2.6	U	3.4	U

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-44		SD12-45		SD12-46		SD12-47	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12464		12450		12443		12446	
DEPTH_TOP									0.3		0.2		0.15		0.2	
DEPTH_BOT									0.5		0.4		0.3		0.4	
SAMP_DATE									05-Dec-97		09-Nov-97		06-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES								
Alpha-BHC	UG/KG	0	0%			0	0	54	2.1	U	2.7	U	2.6	U	3.4	U
Alpha-Chlordane	UG/KG	3.2	4%			0	2	54	2.1	U	3.2	J	2.6	U	3.4	U
Aroclor-1016	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	41	U	53	U	50	U	66	U
Aroclor-1221	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	84	U	110	U	100	U	130	U
Aroclor-1232	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	41	U	53	U	50	U	66	U
Aroclor-1242	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	41	U	53	U	50	U	66	U
Aroclor-1248	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	41	U	53	U	50	U	66	U
Aroclor-1254	UG/KG	1200	7%	0.0432	NYSDEC HHB	4	4	54	41	U	[illegible]		50	U	66	U
Aroclor-1260	UG/KG	37	4%	0.0432	NYSDEC HHB	2	2	54	37	J	53	U	50	U	66	U
Beta-BHC	UG/KG	0	0%			0	0	54	2.1	U	2.7	U	2.6	U	3.4	U
Delta-BHC	UG/KG	0	0%			0	0	54	2.1	U	2.7	U	2.6	U	3.4	U
Dieldrin	UG/KG	0	0%	5.4	NYSDEC HHB	0	0	54	4.1	U	13	U	5	U	6.6	U
Endosulfan I	UG/KG	3.6	4%	1.62	NYSDEC HHB	2	2	54	2.1	U	2.7	U	2.6	U	3.4	U
Endosulfan II	UG/KG	0	0%	1.62	BENTHIC-CHRONIC	0	0	54	4.1	U	6.5	U	5	U	6.6	U
Endosulfan sulfate	UG/KG	0	0%			0	0	54	4.1	U	5.3	U	5	U	6.6	U
Endrin	UG/KG	5.6	2%	43.2	BENTHIC-CHRONIC	0	1	54	4.1	U	6.7	R	5	U	6.6	U
Endrin aldehyde	UG/KG	7.6	4%			0	2	54	4.1	U	5.3	U	5	U	6.6	U
Endrin ketone	UG/KG	22	4%			0	2	54	4.1	U	5.3	U	5	U	6.6	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	54	2.1	U	2.7	U	2.6	U	3.4	U
Gamma-Chlordane	UG/KG	0	0%			0	0	54	2.1	U	16	U	2.6	U	3.4	U
Heptachlor	UG/KG	0	0%	0.0432	NYSDEC HHB	0	0	54	2.1	U	2.7	U	2.6	U	3.4	U
Heptachlor epoxide	UG/KG	11	6%	0.0432	NYSDEC HHB	3	3	54	2.1	U	11	J	2.6	U	3.4	U
Methoxychlor	UG/KG	0	0%			0	0	54	21	U	14	U	26	U	34	U
Toxaphene	UG/KG	0	0%			0	0	54	210	U	270	U	260	U	340	U
METALS																
Aluminum	MG/KG	38700	100%			0	54	54	1200		10300		13000	J	20100	J
Antimony	MG/KG	2.8	7%	2		1	4	54	0.79	UJ	0.9	UJ	0.79	UJ	0.99	UJ
Arsenic	MG/KG	19.1	96%	6		10	52	54	2.9		5.2		4.6		8.6	
Barium	MG/KG	885	100%			0	54	54	15.4	J	78.9		101		221	
Beryllium	MG/KG	1.7	87%			0	47	54	0.12	J	0.41		0.6		0.18	
Cadmium	MG/KG	9	28%	0.6		8	15	54	0.12	J	0.08	U	0.11	U	0.14	U
Calcium	MG/KG	280000	100%			0	54	54	280000		84200		42800	J	82000	J
Chromium	MG/KG	130	100%	26		9	54	54	3.3		17.8		20.3	J	37.7	J
Cobalt	MG/KG	75.3	80%			0	43	54	2.4	J	9.4		11		17.7	
Copper	MG/KG	1160	100%	16		49	54	54	8.6		29.8		26.4	J	53.4	J

TABLE H-2
SITE METALS DATA SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-44		SD12-45		SD12-46		SD12-47	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12464		12450		12443		12446	
DEPTH_TOP									0.3		0.2		0.15		0.2	
DEPTH_BOT									0.5		0.4		0.3		0.4	
SAMP_DATE									05-Dec-97		09-Nov-97		06-Nov-97		07-Nov-97	
QC_CODE									SA		SA		SA		SA	
STUDY_ID									RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIED CRITERIA (HUMAN HEALTH ACC-UMULATION) AND (BENTHIC AQUATIC CHRONIC)	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES								
Cyanide	MG/KG	2.6	4%			0	2	54	2.6	J	0.85	UJ	0.83	UJ	1.1	UJ
Iron	MG/KG	85900	100%	20000		38	54	54	3720	J	19700		[illegible]	J	36000	J
Lead	MG/KG	215	85%	31		8	46	54	4.5	J	35.1	J	17.9	J	36.1	J
Magnesium	MG/KG	48100	100%			0	54	54	7490		13500		9270	J	14200	J
Manganese	MG/KG	14000	91%	460		25	49	54	204		480		348	J	2730	J
Mercury	MG/KG	1.7	33%	0.15		7	18	54	0.05	UJ	0.06	U	0.11		0.08	U
Nickel	MG/KG	126	100%	16		51	54	54	6.4	J	27.5		32.4	J	[illegible]	J
Potassium	MG/KG	5500	100%			0	54	54	409	J	2070		2350		4080	
Selenium	MG/KG	6.2	46%			0	25	54	1.1	U	2.3		1.6	J	1.4	UJ
Silver	MG/KG	1.5	9%	1		1	5	54	0.74	J	0.54	U	0.3	U	0.37	U
Sodium	MG/KG	1550	48%			0	26	54	324	J	348		117	U	147	U
Thallium	MG/KG	4	11%			0	6	54	1.4	UJ	1.6	U	2.3		2	U
Vanadium	MG/KG	70.3	100%			0	54	54	5	J	24.9		24.5		38.3	
Zinc	MG/KG	2650	91%	120		35	49	54	24.9	J	292		105	J	402	J

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-48		SD12-49		SD12-50		SD12-51	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12462		12461		12460		12459	
DEPTH_TOP									0.4		0.8		0.2		0.6	
DEPTH_BOT									0.6		1		0.4		0.7	
SAMP_DATE									11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97	
QC_CODE									SA		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES								
VOLATILE ORGANICS																
1,1,1-Trichloroethane	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	HHB	0	0	11	24	U	26	U	21	U	19	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	HHB	0	0	11	24	U	26	U	21	U	19	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	HHB	0	0	11	24	U	26	U	21	U	19	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Acetone	UG/KG	190	91%			0	10	11	85		29		35		8	J
Benzene	UG/KG	0	0%	1.512	BCT	0	0	11	24	U	26	U	21	U	19	U
Bromodichloromethane	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Bromoform	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Carbon disulfide	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Carbon tetrachloride	UG/KG	0	0%	32.4	HHB	0	0	11	24	U	26	U	21	U	19	U
Chlorobenzene	UG/KG	0	0%	189	BCT	0	0	11	24	U	26	U	21	U	19	U
Chlorodibromomethane	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Chloroethane	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Chloroform	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Ethyl benzene	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Methyl bromide	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Methyl butyl ketone	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Methyl chloride	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Methyl ethyl ketone	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Methyl isobutyl ketone	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Methylene chloride	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Styrene	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Tetrachloroethene	UG/KG	0	0%	43.2	HHB	0	0	11	24	U	26	U	21	U	19	U
Toluene	UG/KG	0	0%	2.646	BCT	0	0	11	24	U	26	U	21	U	19	U

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-48		SD12-49		SD12-50		SD12-51	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12462		12461		12460		12459	
DEPTH_TOP									0.4		0.8		0.2		0.6	
DEPTH_BOT									0.6		1		0.4		0.7	
SAMP_DATE									11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97	
QC_CODE									SA		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES								
Total Xylenes	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	11	24	U	26	U	21	U	19	U
Trichloroethene	UG/KG	0	0%	108	HHB	0	0	11	24	U	26	U	21	U	19	U
Vinyl chloride	UG/KG	0	0%	3.78	HHB	0	0	11	24	U	26	U	21	U	19	U
SEMI VOLATILE ORGANICS																
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
1,2-Dichlorobenzene	UG/KG	0	0%	648		0	0	11	140	U	98	U	96	U	110	U
1,3-Dichlorobenzene	UG/KG	0	0%	648		0	0	11	140	U	98	U	96	U	110	U
1,4-Dichlorobenzene	UG/KG	0	0%	648		0	0	11	140	U	98	U	96	U	110	U
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	11	340	U	240	U	230	U	270	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	11	340	U	240	U	230	U	270	U
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
2-Chlorophenol	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
2-Methylnaphthalene	UG/KG	33	27%			0	3	11	140	U	98	U	96	U	110	U
2-Methylphenol	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
2-Nitroaniline	UG/KG	0	0%			0	0	11	340	U	240	U	230	U	270	U
2-Nitrophenol	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
3-Nitroaniline	UG/KG	0	0%			0	0	11	340	U	240	U	230	U	270	U
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	11	340	U	240	U	230	U	270	U
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
4-Chloroaniline	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
4-Chlorophenyl phenyl eth	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
4-Methylphenol	UG/KG	14	9%			0	1	11	140	U	98	U	96	U	110	U

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-48		SD12-49		SD12-50		SD12-51	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12462		12461		12460		12459	
DEPTH_TOP									0.4		0.8		0.2		0.6	
DEPTH_BOT									0.6		1		0.4		0.7	
SAMP_DATE									11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97	
QC_CODE									SA		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES								
4-Nitroaniline	UG/KG	0	0%			0	0	11	340	U	240	U	230	U	270	U
4-Nitrophenol	UG/KG	0	0%			0	0	11	340	U	240	U	230	U	270	U
Acenaphthene	UG/KG	19	36%	7560	BCT	0	4	11	140	U	98	U	16	J	110	U
Acenaphthylene	UG/KG	54	18%			0	2	11	140	U	98	U	96	U	110	U
Anthracene	UG/KG	160	45%	5.778	HHB	5	5	11	140	U	98	U	21	J	110	U
Benzo(a)anthracene	UG/KG	1500	73%	0.648	HHB	8	8	11	140	U	[illegible]	J	54	J	110	U
Benzo(a)pyrene	UG/KG	1300	73%	70.2	HHB	3	8	11	140	U	5.4	J	52	J	7.2	J
Benzo(b)fluoranthene	UG/KG	1200	91%	70.2	HHB	4	10	11	12	J	6	J	49	J	7.1	J
Benzo(ghi)perylene	UG/KG	640	55%			0	6	11	140	U	98	U	31	J	110	U
Benzo(k)fluoranthene	UG/KG	49	36%	70.2	HHB	0	4	11	140	U	5.7	J	49	J	5.7	J
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Bis(2-Ethylhexyl)phthalate	UG/KG	110	9%	10800	BCT	0	1	11	140	U	98	U	96	U	110	J
Butylbenzylphthalate	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Carbazole	UG/KG	68	55%			0	6	11	140	U	98	U	27	J	110	U
Chrysene	UG/KG	1400	100%	70.2	HHB	4	11	11	9.2	J	6.7	J	62	J	6.4	J
Di-n-butylphthalate	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Di-n-octylphthalate	UG/KG	200	18%			0	2	11	200		98	U	5.5	J	110	U
Dibenz(a,h)anthracene	UG/KG	260	45%			0	5	11	140	U	98	U	12	J	110	U
Dibenzofuran	UG/KG	24	36%			0	4	11	140	U	98	U	6.5	J	110	U
Diethyl phthalate	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Dimethylphthalate	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Fluoranthene	UG/KG	2600	91%	55080	BCT	0	10	11	11	J	6.8	J	130		11	J
Fluorene	UG/KG	59	36%	0.432	BCT	4	4	11	140	U	98	U	12	J	110	U
Hexachlorobenzene	UG/KG	0	0%	8.1	HHB	0	0	11	140	U	98	U	96	U	110	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Hexachloroethane	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Indeno(1,2,3-cd)pyrene	UG/KG	670	55%	70.2	HHB	2	6	11	140	U	98	U	28	J	110	U

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-48		SD12-49		SD12-50		SD12-51	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12462		12461		12460		12459	
DEPTH_TOP									0.4		0.8		0.2		0.6	
DEPTH_BOT									0.6		1		0.4		0.7	
SAMP_DATE									11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97	
QC_CODE									SA		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES								
Isophorone	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
N-Nitrosodiphenylamine	UG/KG	220	9%			0	1	11	140	U	98	U	96	U	110	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Naphthalene	UG/KG	16	36%	1.62	BCT	4	4	11	140	U	98	U	96	U	110	U
Nitrobenzene	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Pentachlorophenol	UG/KG	0	0%			0	0	11	340	U	240	U	230	U	270	U
Phenanthrene	UG/KG	840	91%	6480	BCT	0	10	11	7.9	J	98	U	97		6.8	J
Phenol	UG/KG	0	0%			0	0	11	140	U	98	U	96	U	110	U
Pyrene	UG/KG	2000	91%	51.894	BCT	5	10	11	10	J	6.1	J	98		9.4	J
PESTICIDES/PCBS																
4,4'-DDD	UG/KG	3.7	18%	0.54	HHB	2	2	11	7	U	4.8	U	3.7	J	5.5	U
4,4'-DDE	UG/KG	4	18%	0.54	HHB	2	2	11	7	U	4.8	U	2.7	J	5.5	U
4,4'-DDT	UG/KG	0	0%	0.54	HHB	0	0	11	7	U	4.8	U	4.8	U	5.5	U
Aldrin	UG/KG	0	0%	5.4	HHB	0	0	11	3.6	U	2.5	U	2.5	U	2.8	U
Alpha-BHC	UG/KG	0	0%			0	0	11	3.6	U	2.5	U	2.5	U	2.8	U
Alpha-Chlordane	UG/KG	0	0%			0	0	11	3.6	U	2.5	U	2.5	U	2.8	U
Aroclor-1016	UG/KG	0	0%	0.0432	HHB	0	0	11	70	U	48	U	48	U	55	U
Aroclor-1221	UG/KG	0	0%	0.0432	HHB	0	0	11	140	U	98	U	97	U	110	U
Aroclor-1232	UG/KG	0	0%	0.0432	HHB	0	0	11	70	U	48	U	48	U	55	U
Aroclor-1242	UG/KG	0	0%	0.0432	HHB	0	0	11	70	U	48	U	48	U	55	U
Aroclor-1248	UG/KG	0	0%	0.0432	HHB	0	0	11	70	U	48	U	48	U	55	U
Aroclor-1254	UG/KG	0	0%	0.0432	HHB	0	0	11	70	U	48	U	48	U	55	U
Aroclor-1260	UG/KG	0	0%	0.0432	HHB	0	0	11	70	U	48	U	48	U	55	U
Beta-BHC	UG/KG	0	0%			0	0	11	3.6	U	2.5	U	2.5	U	2.8	U
Delta-BHC	UG/KG	0	0%			0	0	11	3.6	U	2.5	U	2.5	U	2.8	U
Dieldrin	UG/KG	0	0%	5.4	HHB	0	0	11	7	U	4.8	U	4.8	U	5.5	U
Endosulfan I	UG/KG	0	0%	1.62	BCT	0	0	11	3.6	U	2.5	U	2.5	U	2.8	U
Endosulfan II	UG/KG	0	0%	1.62	BCT	0	0	11	7	U	4.8	U	4.8	U	5.5	U
Endosulfan sulfate	UG/KG	0	0%			0	0	11	7	U	4.8	U	4.8	U	5.5	U
Endrin	UG/KG	0	0%	43.2	HHB	0	0	11	7	U	4.8	U	4.8	U	5.5	U

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-48		SD12-49		SD12-50		SD12-51	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12462		12461		12460		12459	
DEPTH_TOP									0.4		0.8		0.2		0.6	
DEPTH_BOT									0.6		1		0.4		0.7	
SAMP_DATE									11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97	
QC_CODE									SA		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES								
Endrin aldehyde	UG/KG	0	0%			0	0	11	7	U	4.8	U	4.8	U	5.5	U
Endrin ketone	UG/KG	0	0%			0	0	11	7	U	4.8	U	4.8	U	5.5	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	11	3.6	U	2.5	U	2.5	U	2.8	U
Gamma-Chlordane	UG/KG	0	0%			0	0	11	3.6	U	2.5	U	2.5	U	2.8	U
Heptachlor	UG/KG	0	0%	0.0432	HHB	0	0	11	3.6	U	2.5	U	2.5	U	2.8	U
Heptachlor epoxide	UG/KG	0	0%	0.0432	HHB	0	0	11	3.6	U	2.5	U	2.5	U	2.8	U
Methoxychlor	UG/KG	0	0%			0	0	11	36	U	25	U	25	U	28	U
Toxaphene	UG/KG	0	0%			0	0	11	360	U	250	U	250	U	280	U
METALS																
Aluminum	MG/KG	21300	100%			0	11	11	8360		10100		11500		21300	
Antimony	MG/KG	0	0%	2		0	0	11	1.3	UJ	0.8	UJ	0.96	UJ	1	UJ
Arsenic	MG/KG	7.6	100%	6		3	11	11	4.4		3.5		4.6		[illegible]	
Barium	MG/KG	143	100%			0	11	11	96.7		64.1		58.7		143	
Beryllium	MG/KG	0.81	100%			0	11	11	0.41		0.46		0.51		0.81	
Cadmium	MG/KG	0.16	9%	0.6		0	1	11	0.11	U	0.07	U	0.08	U	0.09	U
Calcium	MG/KG	352000	100%			0	11	11	50200		25100		24000		3660	
Chromium	MG/KG	37.1	100%	26		2	11	11	13.2		18		21.6		37.1	
Cobalt	MG/KG	21.5	100%			0	11	11	8.6		10.1		13.3		21.5	
Copper	MG/KG	36.8	100%	16		9	11	11	[illegible]		[illegible]		[illegible]		[illegible]	
Cyanide	MG/KG	0	0%			0	0	11	1.3	UJ	0.92	UJ	0.87	UJ	1	UJ
Iron	MG/KG	43000	100%	20000		8	11	11	16800		[illegible]		[illegible]		43000	
Lead	MG/KG	30.9	100%	31		0	11	11	8.8	J	16.2	J	21.9	J	13.5	J
Magnesium	MG/KG	23900	100%			0	11	11	12600		5450		6680		7930	
Manganese	MG/KG	947	100%	460		4	11	11	299		286		312		947	
Mercury	MG/KG	0.27	27%	0.15		1	3	11	0.1	U	0.06	U	0.05	U	0.08	U
Nickel	MG/KG	58.9	100%	16		9	11	11	20.7		[illegible]		41.3		58.9	
Potassium	MG/KG	2510	100%			0	11	11	1200		1460		1380		2510	
Selenium	MG/KG	4.3	55%			0	6	11	2.5		2.4		3.1		4.3	
Silver	MG/KG	0.52	9%	1		0	1	11	0.79	U	0.48	U	0.57	U	0.6	U
Sodium	MG/KG	486	100%			0	11	11	317		248		194		136	

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID									SD12-48		SD12-49		SD12-50		SD12-51	
MATRIX									SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID									12462		12461		12460		12459	
DEPTH_TOP									0.4		0.8		0.2		0.6	
DEPTH_BOT									0.6		1		0.4		0.7	
SAMP_DATE									11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97	
QC_CODE									SA		SA		SA		SA	
STUDY_ID									RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS	NUMBER OF ANALYSES								
Thallium	MG/KG	2.5	18%			0	2	11	2.4	U	1.4	U	1.7	U	2.2	
Vanadium	MG/KG	34.7	100%			0	11	11	17.7		16.7		19.2		34.7	
Zinc	MG/KG	196	100%	120		3	11	11	80.8		85.7		196		125	

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SD12-52		SD12-53		SD12-54		SD12-55		SD12-56	
MATRIX								SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID								12469		12470		12471		12468		12467	
DEPTH_TOP								0.4		0.6		0.4		0.7		0.5	
DEPTH_BOT								0.6		0.8		0.5		0.9		0.7	
SAMP_DATE								10-Dec-97		10-Dec-97		10-Dec-97		09-Dec-97		09-Dec-97	
QC_CODE								SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS										
VOLATILE ORGANICS																	
1,1,1-Trichloroethane	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	HHB	0	0	16	U	15	U	17	U	16	U	17	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	HHB	0	0	16	U	15	U	17	U	16	U	17	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	HHB	0	0	16	U	15	U	17	U	16	U	17	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Acetone	UG/KG	190	91%			0	10	190	J	18	J	36	J	16	UJ	180	J
Benzene	UG/KG	0	0%	1.512	BCT	0	0	16	U	15	U	17	U	16	U	17	U
Bromodichloromethane	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Bromoform	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Carbon disulfide	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Carbon tetrachloride	UG/KG	0	0%	32.4	HHB	0	0	16	U	15	U	17	U	16	U	17	U
Chlorobenzene	UG/KG	0	0%	189	BCT	0	0	16	U	15	U	17	U	16	U	17	U
Chlorodibromomethane	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Chloroethane	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Chloroform	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Ethyl benzene	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Methyl bromide	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Methyl butyl ketone	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Methyl chloride	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Methyl ethyl ketone	UG/KG	0	0%			0	0	16	UJ	15	U	17	U	16	UJ	17	U
Methyl isobutyl ketone	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Methylene chloride	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Styrene	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Tetrachloroethene	UG/KG	0	0%	43.2	HHB	0	0	16	U	15	U	17	U	16	U	17	U
Toluene	UG/KG	0	0%	2.646	BCT	0	0	16	U	15	U	17	U	16	U	17	U

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SD12-52		SD12-53		SD12-54		SD12-55		SD12-56	
MATRIX								SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID								12469		12470		12471		12468		12467	
DEPTH_TOP								0.4		0.6		0.4		0.7		0.5	
DEPTH_BOT								0.6		0.8		0.5		0.9		0.7	
SAMP_DATE								10-Dec-97		10-Dec-97		10-Dec-97		09-Dec-97		09-Dec-97	
QC_CODE								SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS										
Total Xylenes	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	16	U	15	U	17	U	16	U	17	U
Trichloroethene	UG/KG	0	0%	108	HHB	0	0	16	U	15	U	17	U	16	U	17	U
Vinyl chloride	UG/KG	0	0%	3.78	HHB	0	0	16	U	15	U	17	U	16	U	17	U
SEMI VOLATILE ORGANICS																	
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
1,2-Dichlorobenzene	UG/KG	0	0%	648		0	0	90	U	120	U	80	U	100	U	160	U
1,3-Dichlorobenzene	UG/KG	0	0%	648		0	0	90	U	120	U	80	U	100	U	160	U
1,4-Dichlorobenzene	UG/KG	0	0%	648		0	0	90	U	120	U	80	U	100	U	160	U
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	220	U	290	U	190	U	250	U	390	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	220	UJ	290	UJ	190	UJ	250	UJ	390	UJ
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
2-Chlorophenol	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
2-Methylnaphthalene	UG/KG	33	27%			0	3	33	J	120	U	80	U	100	U	160	U
2-Methylphenol	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
2-Nitroaniline	UG/KG	0	0%			0	0	220	U	290	U	190	U	250	U	390	U
2-Nitrophenol	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
3-Nitroaniline	UG/KG	0	0%			0	0	220	UJ	290	UJ	190	UJ	250	UJ	390	UJ
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	220	UJ	290	UJ	190	UJ	250	UJ	390	UJ
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
4-Chloroaniline	UG/KG	0	0%			0	0	90	UJ	120	UJ	80	UJ	100	UJ	160	UJ
4-Chlorophenyl phenyl eth	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
4-Methylphenol	UG/KG	14	9%			0	1	90	U	14	J	80	U	100	U	160	U

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SD12-52		SD12-53		SD12-54		SD12-55		SD12-56	
MATRIX								SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID								12469		12470		12471		12468		12467	
DEPTH_TOP								0.4		0.6		0.4		0.7		0.5	
DEPTH_BOT								0.6		0.8		0.5		0.9		0.7	
SAMP_DATE								10-Dec-97		10-Dec-97		10-Dec-97		09-Dec-97		09-Dec-97	
QC_CODE								SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS										
4-Nitroaniline	UG/KG	0	0%			0	0	220	U	290	U	190	U	250	U	390	U
4-Nitrophenol	UG/KG	0	0%			0	0	220	UJ	290	U	190	U	250	UJ	390	UJ
Acenaphthene	UG/KG	19	36%	7560	BCT	0	4	15	J	120	U	80	U	100	U	160	U
Acenaphthylene	UG/KG	54	18%			0	2	90	U	120	U	80	U	100	U	160	U
Anthracene	UG/KG	160	45%	5.778	HHB	5	5	[illegible]	J	120	U	80	U	100	U	12	J
Benzo(a)anthracene	UG/KG	1500	73%	0.648	HHB	8	8	63	J	[illegible]	J	80	U	[illegible]	J	60	J
Benzo(a)pyrene	UG/KG	1300	73%	70.2	HHB	3	8	59	J	16	J	80	U	100	U	89	J
Benzo(b)fluoranthene	UG/KG	1200	91%	70.2	HHB	4	10	110		24	J	80	U	19	J	130	
Benzo(ghi)perylene	UG/KG	640	55%			0	6	52	J	16	J	80	U	100	U	59	J
Benzo(k)fluoranthene	UG/KG	49	36%	70.2	HHB	0	4	90	U	18	J	80	U	100	U	160	U
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
Bis(2-Ethylhexyl)phthalate	UG/KG	110	9%	10800	BCT	0	1	90	U	120	U	80	U	100	U	160	U
Butylbenzylphthalate	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
Carbazole	UG/KG	68	55%			0	6	13	J	14	J	80	UJ	100	UJ	12	J
Chrysene	UG/KG	1400	100%	70.2	HHB	4	11	78	J	26	J	4.3	J	8.5	J	76	J
Di-n-butylphthalate	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
Di-n-octylphthalate	UG/KG	200	18%			0	2	90	U	120	U	80	U	100	U	160	U
Dibenz(a,h)anthracene	UG/KG	260	45%			0	5	16	J	120	U	80	U	100	U	18	J
Dibenzofuran	UG/KG	24	36%			0	4	9.7	J	120	U	80	U	100	U	160	U
Diethyl phthalate	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
Dimethylphthalate	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
Fluoranthene	UG/KG	2600	91%	55080	BCT	0	10	140		49	J	80	U	14	J	120	J
Fluorene	UG/KG	59	36%	0.432	BCT	4	4	18	J	120	U	80	U	100	U	160	U
Hexachlorobenzene	UG/KG	0	0%	8.1	HHB	0	0	90	U	120	U	80	U	100	U	160	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	90	UJ	120	UJ	80	UJ	100	UJ	160	U
Hexachloroethane	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	UJ
Indeno(1,2,3-cd)pyrene	UG/KG	670	55%	70.2	HHB	2	6	36	J	13	J	80	U	100	U	34	J

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SD12-52		SD12-53		SD12-54		SD12-55		SD12-56	
MATRIX								SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID								12469		12470		12471		12468		12467	
DEPTH_TOP								0.4		0.6		0.4		0.7		0.5	
DEPTH_BOT								0.6		0.8		0.5		0.9		0.7	
SAMP_DATE								10-Dec-97		10-Dec-97		10-Dec-97		09-Dec-97		09-Dec-97	
QC_CODE								SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS										
Isophorone	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
N-Nitrosodiphenylamine	UG/KG	220	9%			0	1	90	U	120	U	80	U	100	U	220	
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
Naphthalene	UG/KG	16	36%	1.62	BCT	4	4	13	J	120	U	4.5	J	100	U	160	U
Nitrobenzene	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
Pentachlorophenol	UG/KG	0	0%			0	0	220	UJ	290	U	190	U	250	UJ	390	UJ
Phenanthrene	UG/KG	840	91%	6480	BCT	0	10	100		34	J	8.1	J	7.5	J	58	J
Phenol	UG/KG	0	0%			0	0	90	U	120	U	80	U	100	U	160	U
Pyrene	UG/KG	2000	91%	51.894	BCT	5	10	110		35	J	80	U	8.9	J	99	J
PESTICIDES/PCBS																	
4,4'-DDD	UG/KG	3.7	18%	0.54	HHB	2	2	3.1	J	6	U	4	U	5.2	U	8	U
4,4'-DDE	UG/KG	4	18%	0.54	HHB	2	2	4	J	6	U	4	U	5.2	U	8	U
4,4'-DDT	UG/KG	0	0%	0.54	HHB	0	0	4.5	U	6	U	4	U	5.2	U	8	U
Aldrin	UG/KG	0	0%	5.4	HHB	0	0	2.3	U	3.1	U	2	U	2.7	U	4.1	U
Alpha-BHC	UG/KG	0	0%			0	0	2.3	U	3.1	U	2	U	2.7	U	4.1	U
Alpha-Chlordane	UG/KG	0	0%			0	0	2.3	U	3.1	U	2	U	2.7	U	4.1	U
Aroclor-1016	UG/KG	0	0%	0.0432	HHB	0	0	45	U	60	U	40	U	52	U	80	U
Aroclor-1221	UG/KG	0	0%	0.0432	HHB	0	0	91	U	120	U	81	U	110	U	160	U
Aroclor-1232	UG/KG	0	0%	0.0432	HHB	0	0	45	U	60	U	40	U	52	U	80	U
Aroclor-1242	UG/KG	0	0%	0.0432	HHB	0	0	45	U	60	U	40	U	52	U	80	U
Aroclor-1248	UG/KG	0	0%	0.0432	HHB	0	0	45	U	60	U	40	U	52	U	80	U
Aroclor-1254	UG/KG	0	0%	0.0432	HHB	0	0	45	U	60	U	40	U	52	U	80	U
Aroclor-1260	UG/KG	0	0%	0.0432	HHB	0	0	45	U	60	U	40	U	52	U	80	U
Beta-BHC	UG/KG	0	0%			0	0	2.3	U	3.1	U	2	U	2.7	U	4.1	U
Delta-BHC	UG/KG	0	0%			0	0	2.3	U	3.1	U	2	U	2.7	U	4.1	U
Dieldrin	UG/KG	0	0%	5.4	HHB	0	0	4.5	U	6	U	4	U	5.2	U	8	U
Endosulfan I	UG/KG	0	0%	1.62	BCT	0	0	2.3	U	3.1	U	2	U	2.7	U	4.1	U
Endosulfan II	UG/KG	0	0%	1.62	BCT	0	0	4.5	U	6	U	4	U	5.2	U	8	U
Endosulfan sulfate	UG/KG	0	0%			0	0	4.5	U	6	U	4	U	5.2	U	8	U
Endrin	UG/KG	0	0%	43.2	HHB	0	0	4.5	U	6	U	4	U	5.2	U	8	U

TABLE H-3
DOWNGRADIENT METALS DATÁ-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SD12-52		SD12-53		SD12-54		SD12-55		SD12-56	
MATRIX								SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID								12469		12470		12471		12468		12467	
DEPTH_TOP								0.4		0.6		0.4		0.7		0.5	
DEPTH_BOT								0.6		0.8		0.5		0.9		0.7	
SAMP_DATE								10-Dec-97		10-Dec-97		10-Dec-97		09-Dec-97		09-Dec-97	
QC_CODE								SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS										
Endrin aldehyde	UG/KG	0	0%			0	0	4.5	U	6	U	4	U	5.2	U	8	U
Endrin ketone	UG/KG	0	0%			0	0	4.5	U	6	U	4	U	5.2	U	8	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	2.3	U	3.1	U	2	U	2.7	U	4.1	U
Gamma-Chlordane	UG/KG	0	0%			0	0	2.3	U	3.1	U	2	U	2.7	U	4.1	U
Heptachlor	UG/KG	0	0%	0.0432	HHB	0	0	2.3	U	3.1	U	2	U	2.7	U	4.1	U
Heptachlor epoxide	UG/KG	0	0%	0.0432	HHB	0	0	2.3	U	3.1	U	2	U	2.7	U	4.1	U
Methoxychlor	UG/KG	0	0%			0	0	23	U	31	U	20	U	27	U	41	U
Toxaphene	UG/KG	0	0%			0	0	230	U	310	U	200	U	270	U	410	U
METALS																	
Aluminum	MG/KG	21300	100%			0	11	1220		1830		8660		17600		11700	
Antimony	MG/KG	0	0%	2		0	0	0.73	UJ	1.2	UJ	0.84	UJ	0.8	UJ	1.3	UJ
Arsenic	MG/KG	7.6	100%	6		3	11	5		2	J	4.6		[illegible]		5.6	
Barium	MG/KG	143	100%			0	11	20.3	J	16.1	J	35.5	J	129		90.5	
Beryllium	MG/KG	0.81	100%			0	11	0.03	J	0.06	J	0.34	J	0.81	J	0.49	J
Cadmium	MG/KG	0.16	9%	0.6		0	1	0.06	U	0.16	J	0.07	U	0.07	U	0.11	U
Calcium	MG/KG	352000	100%			0	11	352000		3740		16500		7630		29300	
Chromium	MG/KG	37.1	100%	26		2	11	3.5		3.7		17.4		28.6		20.3	
Cobalt	MG/KG	21.5	100%			0	11	4.9	J	2.6	J	7.5	J	15.2		14.2	J
Copper	MG/KG	36.8	100%	16		9	11	8		9.1		19.2		[illegible]		[illegible]	
Cyanide	MG/KG	0	0%			0	0	0.82	UJ	1	UJ	0.73	UJ	0.8	UJ	1.2	UJ
Iron	MG/KG	43000	100%	20000		8	11	6060		3270		24400		[illegible]		26500	
Lead	MG/KG	30.9	100%	31		0	11	17.3	J	4.3	J	16.6	J	30.9	J	26.3	J
Magnesium	MG/KG	23900	100%			0	11	23900		838	J	4540		6040		5570	
Manganese	MG/KG	947	100%	460		4	11	544		169		321		409		483	
Mercury	MG/KG	0.27	27%	0.15		1	3	0.07	UJ	0.1	J	0.06	UJ	0.07	J	0.27	J
Nickel	MG/KG	58.9	100%	16		9	11	11		5.7	J	28.1		[illegible]		34.4	
Potassium	MG/KG	2510	100%			0	11	456	J	431	J	664	J	1580		1520	J
Selenium	MG/KG	4.3	55%			0	6	0.98	U	1.6	U	1.3		1.4		1.7	U
Silver	MG/KG	0.52	9%	1		0	1	0.52	J	0.72	UJ	0.5	U	0.48	U	0.78	U
Sodium	MG/KG	486	100%			0	11	377	J	396	J	239	J	258	J	380	J

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SD12-52		SD12-53		SD12-54		SD12-55		SD12-56	
MATRIX								SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT		SEDIMENT	
SAMP_ID								12469		12470		12471		12468		12467	
DEPTH_TOP								0.4		0.6		0.4		0.7		0.5	
DEPTH_BOT								0.6		0.8		0.5		0.9		0.7	
SAMP_DATE								10-Dec-97		10-Dec-97		10-Dec-97		09-Dec-97		09-Dec-97	
QC_CODE								SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS										
Thallium	MG/KG	2.5	18%			0	2	1.3	UJ	2.2	UJ	1.5	UJ	1.4	UJ	2.3	UJ
Vanadium	MG/KG	34.7	100%			0	11	7.2	J	3.4	J	12.4		26.3		19.5	
Zinc	MG/KG	196	100%	120		3	11	20.1	J	36.5	J	75.6	J	114	J	135	J

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		RI Phase	
LOC_ID								SD12-57		67668	
MATRIX								SEDIMENT		SD12-58	
SAMP_ID								12466		12465	
DEPTH_TOP								0.5		SA	
DEPTH_BOT								0.7		0.7	
SAMP_DATE								09-Dec-97		0.9	
QC_CODE								SA		SEDIMEN	
STUDY_ID								RI Phase 1 Step 1		9-Dec-97	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS				
VOLATILE ORGANICS											
1,1,1-Trichloroethane	UG/KG	0	0%			0	0	21	U	13	U
1,1,2,2-Tetrachloroethane	UG/KG	0	0%	16.2	HHB	0	0	21	U	13	U
1,1,2-Trichloroethane	UG/KG	0	0%			0	0	21	U	13	U
1,1-Dichloroethane	UG/KG	0	0%	1.08	HHB	0	0	21	U	13	U
1,1-Dichloroethene	UG/KG	0	0%			0	0	21	U	13	U
1,2-Dichloroethane	UG/KG	0	0%	37.8	HHB	0	0	21	U	13	U
1,2-Dichloroethene (total)	UG/KG	0	0%			0	0	21	U	13	U
1,2-Dichloropropane	UG/KG	0	0%			0	0	21	U	13	U
Acetone	UG/KG	190	91%			0	10	130	J	48	J
Benzene	UG/KG	0	0%	1.512	BCT	0	0	21	U	13	U
Bromodichloromethane	UG/KG	0	0%			0	0	21	U	13	U
Bromoform	UG/KG	0	0%			0	0	21	U	13	U
Carbon disulfide	UG/KG	0	0%			0	0	21	U	13	U
Carbon tetrachloride	UG/KG	0	0%	32.4	HHB	0	0	21	U	13	U
Chlorobenzene	UG/KG	0	0%	189	BCT	0	0	21	U	13	U
Chlorodibromomethane	UG/KG	0	0%			0	0	21	U	13	U
Chloroethane	UG/KG	0	0%			0	0	21	U	13	U
Chloroform	UG/KG	0	0%			0	0	21	U	13	U
Cis-1,3-Dichloropropene	UG/KG	0	0%			0	0	21	U	13	U
Ethyl benzene	UG/KG	0	0%			0	0	21	U	13	U
Methyl bromide	UG/KG	0	0%			0	0	21	U	13	U
Methyl butyl ketone	UG/KG	0	0%			0	0	21	U	13	U
Methyl chloride	UG/KG	0	0%			0	0	21	U	13	U
Methyl ethyl ketone	UG/KG	0	0%			0	0	21	UJ	13	UJ
Methyl isobutyl ketone	UG/KG	0	0%			0	0	21	U	13	U
Methylene chloride	UG/KG	0	0%			0	0	21	U	13	U
Styrene	UG/KG	0	0%			0	0	21	U	13	U
Tetrachloroethene	UG/KG	0	0%	43.2	HHB	0	0	21	U	13	U
Toluene	UG/KG	0	0%	2.646	BCT	0	0	21	U	13	U

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		RI Phase	
LOC_ID								SD12-57		67668	
MATRIX								SEDIMENT		SD12-58	
SAMP_ID								12466		12465	
DEPTH_TOP								0.5		SA	
DEPTH_BOT								0.7		0.7	
SAMP_DATE								09-Dec-97		0.9	
QC_CODE								SA		SEDIMEN	
STUDY_ID								RI Phase 1 Step 1		9-Dec-97	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS				
Total Xylenes	UG/KG	0	0%			0	0	21	U	13	U
Trans-1,3-Dichloropropene	UG/KG	0	0%			0	0	21	U	13	U
Trichloroethene	UG/KG	0	0%	108	HHB	0	0	21	U	13	U
Vinyl chloride	UG/KG	0	0%	3.78	HHB	0	0	21	U	13	U
SEMI VOLATILE ORGANICS											
1,2,4-Trichlorobenzene	UG/KG	0	0%			0	0	150	U	88	U
1,2-Dichlorobenzene	UG/KG	0	0%	648		0	0	150	U	88	U
1,3-Dichlorobenzene	UG/KG	0	0%	648		0	0	150	U	88	U
1,4-Dichlorobenzene	UG/KG	0	0%	648		0	0	150	U	88	U
2,4,5-Trichlorophenol	UG/KG	0	0%			0	0	360	U	210	U
2,4,6-Trichlorophenol	UG/KG	0	0%			0	0	150	U	88	U
2,4-Dichlorophenol	UG/KG	0	0%			0	0	150	U	88	U
2,4-Dimethylphenol	UG/KG	0	0%			0	0	150	U	88	U
2,4-Dinitrophenol	UG/KG	0	0%			0	0	360	UJ	210	UJ
2,4-Dinitrotoluene	UG/KG	0	0%			0	0	150	U	88	U
2,6-Dinitrotoluene	UG/KG	0	0%			0	0	150	U	88	U
2-Chloronaphthalene	UG/KG	0	0%			0	0	150	U	88	U
2-Chlorophenol	UG/KG	0	0%			0	0	150	U	88	U
2-Methylnaphthalene	UG/KG	33	27%			0	3	11	J	13	J
2-Methylphenol	UG/KG	0	0%			0	0	150	U	88	U
2-Nitroaniline	UG/KG	0	0%			0	0	360	UJ	210	U
2-Nitrophenol	UG/KG	0	0%			0	0	150	UJ	88	U
3,3'-Dichlorobenzidine	UG/KG	0	0%			0	0	150	U	88	U
3-Nitroaniline	UG/KG	0	0%			0	0	360	UJ	210	UJ
4,6-Dinitro-2-methylphenol	UG/KG	0	0%			0	0	360	UJ	210	UJ
4-Bromophenyl phenyl eth	UG/KG	0	0%			0	0	150	U	88	U
4-Chloro-3-methylphenol	UG/KG	0	0%			0	0	150	U	88	U
4-Chloroaniline	UG/KG	0	0%			0	0	150	UJ	88	UJ
4-Chlorophenyl phenyl eth	UG/KG	0	0%			0	0	150	U	88	U
4-Methylphenol	UG/KG	14	9%			0	1	150	U	88	U

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		RI Phase	
LOC_ID								SD12-57		67668	
MATRIX								SEDIMENT		SD12-58	
SAMP_ID								12466		12465	
DEPTH_TOP								0.5		SA	
DEPTH_BOT								0.7		0.7	
SAMP_DATE								09-Dec-97		0.9	
QC_CODE								SA		SEDIMEN	
STUDY_ID								RI Phase 1 Step 1		9-Dec-97	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS				
4-Nitroaniline	UG/KG	0	0%			0	0	360	U	210	U
4-Nitrophenol	UG/KG	0	0%			0	0	360	UJ	210	UJ
Acenaphthene	UG/KG	19	36%	7560	BCT	0	4	11	J	19	J
Acenaphthylene	UG/KG	54	18%			0	2	17	J	54	J
Anthracene	UG/KG	160	45%	5.778	HHB	5	5	[illegible]	J	160	
Benzo(a)anthracene	UG/KG	1500	73%	0.648	HHB	8	8	170		1500	
Benzo(a)pyrene	UG/KG	1300	73%	70.2	HHB	3	8	130	J	1300	
Benzo(b)fluoranthene	UG/KG	1200	91%	70.2	HHB	4	10	270		1200	
Benzo(ghi)perylene	UG/KG	640	55%			0	6	110	J	640	
Benzo(k)fluoranthene	UG/KG	49	36%	70.2	HHB	0	4	150	U	88	U
Bis(2-Chloroethoxy)metha	UG/KG	0	0%			0	0	150	U	88	U
Bis(2-Chloroethyl)ether	UG/KG	0	0%			0	0	150	U	88	U
Bis(2-Chloroisopropyl)ethe	UG/KG	0	0%			0	0	150	U	88	U
Bis(2-Ethylhexyl)phthalate	UG/KG	110	9%	10800	BCT	0	1	150	U	88	U
Butylbenzylphthalate	UG/KG	0	0%			0	0	150	U	88	U
Carbazole	UG/KG	68	55%			0	6	24	J	68	J
Chrysene	UG/KG	1400	100%	70.2	HHB	4	11	210		1400	J
Di-n-butylphthalate	UG/KG	0	0%			0	0	150	U	88	U
Di-n-octylphthalate	UG/KG	200	18%			0	2	150	U	88	U
Dibenz(a,h)anthracene	UG/KG	260	45%			0	5	43	J	260	J
Dibenzofuran	UG/KG	24	36%			0	4	12	J	24	J
Diethyl phthalate	UG/KG	0	0%			0	0	150	U	88	U
Dimethylphthalate	UG/KG	0	0%			0	0	150	U	88	U
Fluoranthene	UG/KG	2600	91%	55080	BCT	0	10	360		2600	J
Fluorene	UG/KG	59	36%	0.432	BCT	4	4	26	J	59	J
Hexachlorobenzene	UG/KG	0	0%	8.1	HHB	0	0	150	U	88	U
Hexachlorobutadiene	UG/KG	0	0%			0	0	150	U	88	U
Hexachlorocyclopentadien	UG/KG	0	0%			0	0	150	U	88	U
Hexachloroethane	UG/KG	0	0%			0	0	150	UJ	88	UJ
Indeno(1,2,3-cd)pyrene	UG/KG	670	55%	70.2	HHB	2	6	100	J	670	

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		RI Phase	
LOC_ID								SD12-57		67668	
MATRIX								SEDIMENT		SD12-58	
SAMP_ID								12466		12465	
DEPTH_TOP								0.5		SA	
DEPTH_BOT								0.7		0.7	
SAMP_DATE								09-Dec-97		0.9	
QC_CODE								SA		SEDIMEN	
STUDY_ID								RI Phase 1 Step 1		9-Dec-97	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS				
Isophorone	UG/KG	0	0%			0	0	150	U	88	U
N-Nitrosodiphenylamine	UG/KG	220	9%			0	1	150	U	88	U
N-Nitrosodipropylamine	UG/KG	0	0%			0	0	150	U	88	U
Naphthalene	UG/KG	16	36%	1.62	BCT	4	4	[illegible]	J	[illegible]	J
Nitrobenzene	UG/KG	0	0%			0	0	150	U	88	U
Pentachlorophenol	UG/KG	0	0%			0	0	360	UJ	210	UJ
Phenanthrene	UG/KG	840	91%	6480	BCT	0	10	170		840	
Phenol	UG/KG	0	0%			0	0	150	U	88	U
Pyrene	UG/KG	2000	91%	51.894	BCT	5	10	270		2000	J
PESTICIDES/PCBS											
4,4'-DDD	UG/KG	3.7	18%	0.54	HHB	2	2	7.5	U	4.4	U
4,4'-DDE	UG/KG	4	18%	0.54	HHB	2	2	7.5	U	4.4	U
4,4'-DDT	UG/KG	0	0%	0.54	HHB	0	0	7.5	U	4.4	U
Aldrin	UG/KG	0	0%	5.4	HHB	0	0	3.9	U	2.2	U
Alpha-BHC	UG/KG	0	0%			0	0	3.9	U	2.2	U
Alpha-Chlordane	UG/KG	0	0%			0	0	3.9	U	2.2	U
Aroclor-1016	UG/KG	0	0%	0.0432	HHB	0	0	75	U	44	U
Aroclor-1221	UG/KG	0	0%	0.0432	HHB	0	0	150	U	89	U
Aroclor-1232	UG/KG	0	0%	0.0432	HHB	0	0	75	U	44	U
Aroclor-1242	UG/KG	0	0%	0.0432	HHB	0	0	75	U	44	U
Aroclor-1248	UG/KG	0	0%	0.0432	HHB	0	0	75	U	44	U
Aroclor-1254	UG/KG	0	0%	0.0432	HHB	0	0	75	U	44	U
Aroclor-1260	UG/KG	0	0%	0.0432	HHB	0	0	75	U	44	U
Beta-BHC	UG/KG	0	0%			0	0	3.9	U	2.2	U
Delta-BHC	UG/KG	0	0%			0	0	3.9	U	2.2	U
Dieldrin	UG/KG	0	0%	5.4	HHB	0	0	7.5	U	4.4	U
Endosulfan I	UG/KG	0	0%	1.62	BCT	0	0	3.9	U	4.4	U
Endosulfan II	UG/KG	0	0%	1.62	BCT	0	0	7.5	U	4.4	U
Endosulfan sulfate	UG/KG	0	0%			0	0	7.5	U	4.4	U
Endrin	UG/KG	0	0%	43.2	HHB	0	0	7.5	U	4.4	U

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		RI Phase	
LOC_ID								SD12-57		67668	
MATRIX								SEDIMENT		SD12-58	
SAMP_ID								12466		12465	
DEPTH_TOP								0.5		SA	
DEPTH_BOT								0.7		0.7	
SAMP_DATE								09-Dec-97		0.9	
QC_CODE								SA		SEDIMEN	
STUDY_ID								RI Phase 1 Step 1		9-Dec-97	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS				
Endrin aldehyde	UG/KG	0	0%			0	0	7.5	U	4.4	U
Endrin ketone	UG/KG	0	0%			0	0	7.5	U	4.4	U
Gamma-BHC/Lindane	UG/KG	0	0%			0	0	3.9	U	2.2	U
Gamma-Chlordane	UG/KG	0	0%			0	0	3.9	U	2.2	U
Heptachlor	UG/KG	0	0%	0.0432	HHB	0	0	3.9	U	2.2	U
Heptachlor epoxide	UG/KG	0	0%	0.0432	HHB	0	0	3.9	U	2.2	U
Methoxychlor	UG/KG	0	0%			0	0	39	U	22	U
Toxaphene	UG/KG	0	0%			0	0	390	U	220	U
METALS											
Aluminum	MG/KG	21300	100%			0	11	13300		10500	
Antimony	MG/KG	0	0%	2		0	0	1.4	UJ	0.9	UJ
Arsenic	MG/KG	7.6	100%	6		3	11	6.5		5.5	
Barium	MG/KG	143	100%			0	11	106		54	
Beryllium	MG/KG	0.81	100%			0	11	0.65	J	0.48	J
Cadmium	MG/KG	0.16	9%	0.6		0	1	0.12	U	0.08	U
Calcium	MG/KG	352000	100%			0	11	54700		59100	
Chromium	MG/KG	37.1	100%	26		2	11	23.2		19.5	
Cobalt	MG/KG	21.5	100%			0	11	14.1	J	13.2	
Copper	MG/KG	36.8	100%	16		9	11	30.9	J	18.3	
Cyanide	MG/KG	0	0%			0	0	1.2	UJ	0.78	UJ
Iron	MG/KG	43000	100%	20000		8	11	[illegible]		[illegible]	
Lead	MG/KG	30.9	100%	31		0	11	24.1	J	13.7	J
Magnesium	MG/KG	23900	100%			0	11	7640		6980	
Manganese	MG/KG	947	100%	460		4	11	498		406	
Mercury	MG/KG	0.27	27%	0.15		1	3	0.11	UJ	0.07	UJ
Nickel	MG/KG	58.9	100%	16		9	11	38.5		35.5	
Potassium	MG/KG	2510	100%			0	11	1950	J	1420	
Selenium	MG/KG	4.3	55%			0	6	1.9	U	1.2	U
Silver	MG/KG	0.52	9%	1		0	1	0.85	U	0.54	U
Sodium	MG/KG	486	100%			0	11	486	J	336	J

TABLE H-3
DOWNGRADIENT METALS DATA-SEDIMENT
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		RI Phase	
LOC_ID								SD12-57		67668	
MATRIX								SEDIMENT		SD12-58	
SAMP_ID								12466		12465	
DEPTH_TOP								0.5		SA	
DEPTH_BOT								0.7		0.7	
SAMP_DATE								09-Dec-97		0.9	
QC_CODE								SA		SEDIMEN	
STUDY_ID								RI Phase 1 Step 1		9-Dec-97	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CRITERIA	SPECIFIC CRITERIA USED	NUMBER ABOVE NYS	NUMBER OF DETECTS				
Thallium	MG/KG	2.5	18%			0	2	2.5	J	1.6	UJ
Vanadium	MG/KG	34.7	100%			0	11	21.9		16.4	
Zinc	MG/KG	196	100%	120		3	11	116	J	86.8	J

TABLE H-4
BACKGROUND RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SD12-59			SD12-67			SD12-65		
MATRIX									SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID									12453			12447			12457		
DEPTH TO TOP OF SAMPLE									0.8			0.2			0.2		
DEPTH TO BOTTOM OF SAMPLE									1			0.4			0.5		
SAMPLE DATE									10-Nov-97			9-Nov-97			11-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY OF	RAD GUIDELINE	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMTER	UNIT	MAXIMU	AVERAGE	DETECTION		RAD	DETECTS	ANALYSES									
Bismuth-214	pCi/g	2	1.36	67%		0	6	9	2		+/-0.5	2	J	+/-0.4	1.3		+/-0.4
Cesium-137	pCi/g	0.6	0.22	11%		0	1	9	0.1	U		0.5	UJ		0.5	UJ	
Cobalt-57	pCi/g	0	0.06	0%		0	0	9	0.1	U		0.1	UJ		0.2	UJ	
Cobalt-60	pCi/g	0	0.09	0%		0	0	9	0.1	U		0.1	UJ		0.1	UJ	
Lead-210	pCi/g	0	9.36	0%		0	0	9	6.1	U		28.4	UJ		37	UJ	
Lead-211	pCi/g	0	3.16	0%		0	0	9	12.3	U		10.2	UJ		2.1	UJ	
Lead-214	pCi/g	2.1	1.54	89%		0	8	9	0.4	U		2	J	+/-0.4	1.6	J	+/-0.4
Plutonium-239/240	pCi/g	0.1	0.11	22%		0	2	9	0.1	U	+/-0.1	0.2	UJ	+/-0.1	0.3	UJ	+/-0.1
Promethium-147	pCi/g	16.3	11.66	100%		0	9	9	7		+/-5.2	13.5	J	+/-5.3	14.3	J	+/-5.3
Radium-223	pCi/g	0	0.23	0%		0	0	9	0.5	U		0.5	U		0.5	UJ	
Radium-226	pCi/g	2	1.36	67%		0	6	9	2		+/-0.5	2	J	+/-0.4	1.3	J	+/-0.4
Radium-228	pCi/g	2.4	1.81	89%		0	8	9	2.4	U		1.6	J	+/-0.4	2.4	J	+/-0.6
Thorium-227	pCi/g	0.6	0.25	75%		0	6	8				0.1	J	+/-0.1	0.6	J	+/-0.6
Thorium-230	pCi/g	1.4	0.54	33%		0	3	9	0.9	J	+/-0.8	0.9	UJ	+/-0.5	1.5	UJ	+/-1
Thorium-232	pCi/g	1.9	1.29	100%		0	9	9	1.7	J	+/-1	1.4	J	+/-0.7	1.9	J	+/-1
Tritium	pCi/g	0.2	0.09	22%		0	2	9	0.1	UJ	+/-0.1	0.1	UJ	+/-0.1	0.2	UJ	+/-0.1
Uranium-233/234	pCi/g	0.9	0.32	33%		0	3	9	0.8		+/-0.3	0.5	UJ	+/-0.2	1.1	UJ	+/-0.4
Uranium-235	pCi/g	0.2	0.08	33%		0	3	9	0.2		+/-0.1	0.1	UJ	+/-0.1	0.4	UJ	+/-0.2
Uranium-238	pCi/g	0.8	0.06	11%		0	1	9	0.6	U		0.4	UJ		0.7	UJ	

TABLE H-4
BACKGROUND RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SD12-62			SD12-63			SD12-64		
MATRIX									SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID									12448			12449			12456		
DEPTH TO TOP OF SAMPLE									0.2			0.3			0.6		
DEPTH TO BOTTOM OF SAMPLE									0.4			0.5			0.8		
SAMPLE DATE									9-Nov-97			10-Nov-97			11-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID									RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
PARAMTER	UNIT	MAXIMU	AVERAGE	FREQUENCY OF DETECTION	RAD GUIDELINE	NUMBER ABOVE RAD	NUMBER OF DETECTS	NUMBER OF ANALYSES									
Bismuth-214	pCi/g	2	1.36	67%		0	6	9	1.4	U		1.8	J	+/-0.5	1.4	J	+/-0.3
Cesium-137	pCi/g	0.6	0.22	11%		0	1	9	0.6		+/-0.2	0.4	UJ		0.3	UJ	
Cobalt-57	pCi/g	0	0.06	0%		0	0	9	0.1	U		0.1	UJ		0.1	UJ	
Cobalt-60	pCi/g	0	0.09	0%		0	0	9	0.2	U		0.3	UJ		0.3	UJ	
Lead-210	pCi/g	0	9.36	0%		0	0	9	4.6	U		27.1	UJ		19.3	UJ	
Lead-211	pCi/g	0	3.16	0%		0	0	9	2.5	U		5.5	UJ		5.7	UJ	
Lead-214	pCi/g	2.1	1.54	89%		0	8	9	2.1		+/-0.5	1.7	J	+/-0.5	1.8	J	+/-0.3
Plutonium-239/240	pCi/g	0.1	0.11	22%		0	2	9	0.1		+/-0.1	0.1	UJ	+/-0.1	0.1	UJ	+/-0.2
Promethium-147	pCi/g	16.3	11.66	100%		0	9	9	15.8		+/-5.3	12	J	+/-5.3	16.3	J	+/-5.3
Radium-223	pCi/g	0	0.23	0%		0	0	9	0.4	U		0.5	UJ		0.5	UJ	
Radium-226	pCi/g	2	1.36	67%		0	6	9	1.4	U		1.8	J	+/-0.5	1.4	J	+/-0.3
Radium-228	pCi/g	2.4	1.81	89%		0	8	9	1.9		+/-0.4	2.3	J	+/-0.5	1.4	J	+/-0.5
Thorium-227	pCi/g	0.6	0.25	75%		0	6	8	0.1	J	+/-0.2	0.1	J	+/-0.2	0.6	J	+/-0.5
Thorium-230	pCi/g	1.4	0.54	33%		0	3	9	1.2	J	+/-0.7	0.7	UJ	+/-0.4	1.5	UJ	+/-0.7
Thorium-232	pCi/g	1.9	1.29	100%		0	9	9	1	J	+/-0.6	1	J	+/-0.5	0.8	J	+/-0.5
Tritium	pCi/g	0.2	0.09	22%		0	2	9	0.1	UJ	+/-0.1	0.2	J	+/-0.1	0.2	U	+/-0.1
Uranium-233/234	pCi/g	0.9	0.32	33%		0	3	9	0.6	U	+/-0.2	0.7	UJ	+/-0.3	0.9	UJ	+/-0.5
Uranium-235	pCi/g	0.2	0.08	33%		0	3	9	0.1	U	+/-0.1	0.1	J	+/-0.1	0.6	UJ	+/-0.4
Uranium-238	pCi/g	0.8	0.06	11%		0	1	9	0.5	U		0.6	UJ		0.6	UJ	

TABLE H-4
BACKGROUND RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SD12-61			SD12-60			SD12-66		
MATRIX									SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID									12455			12454			12458		
DEPTH TO TOP OF SAMPLE									0.7			1			2.5		
DEPTH TO BOTTOM OF SAMPLE									0.9			1.2			2.8		
SAMPLE DATE									11-Nov-97			10-Nov-97			11-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID									RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMTER	UNIT	MAXIMU	AVERAGE	FREQUENCY OF DETECTION	RAD GUIDELINE	NUMBER ABOVE RAD	NUMBER OF DETECTS	NUMBER OF ANALYSES									
Bismuth-214	pCi/g	2	1.36	67%		0	6	9	1.1	J	+/-0.3	2.2	UJ		1.7	UJ	
Cesium-137	pCi/g	0.6	0.22	11%		0	1	9	0.1	U		0.5	UJ		0.3	U	
Cobalt-57	pCi/g	0	0.06	0%		0	0	9	0.1	U		0.1	UJ		0.2	U	
Cobalt-60	pCi/g	0	0.09	0%		0	0	9	0.1	U		0.1	UJ		0.3	U	
Lead-210	pCi/g	0	9.36	0%		0	0	9	13	U		18.1	UJ		14.9	U	
Lead-211	pCi/g	0	3.16	0%		0	0	9	4.5	U		12.5	UJ		1.5	U	
Lead-214	pCi/g	2.1	1.54	89%		0	8	9	1.3		+/-0.3	1.9	J	+/-0.4	1.3		+/-0.3
Plutonium-239/240	pCi/g	0.1	0.11	22%		0	2	9	0.4	UJ	+/-0.1	0.1	J	+/-0.1	0.3	UJ	+/-0.2
Promethium-147	pCi/g	16.3	11.66	100%		0	9	9	3.7		+/-5.1	11.6	J	+/-5.3	10.2		+/-5.2
Radium-223	pCi/g	0	0.23	0%		0	0	9	0.3	U		0.6	U		0.4	UJ	
Radium-226	pCi/g	2	1.36	67%		0	6	9	1.1	J	+/-0.3	2.2	U		1.7	U	
Radium-228	pCi/g	2.4	1.81	89%		0	8	9	2.1	J	+/-0.5	2	J	+/-0.7	1.4	J	+/-0.4
Thorium-227	pCi/g	0.6	0.25	75%		0	6	8	0.4	U	+/-0.1	0.4	U	+/-0.1	0.1		+/-0.2
Thorium-230	pCi/g	1.4	0.54	33%		0	3	9	1.6	UJ	+/-0.8	1.4	J	+/-0.8	2.3	UJ	+/-1.1
Thorium-232	pCi/g	1.9	1.29	100%		0	9	9	1.1	J	+/-0.6	1.3	J	+/-0.7	1.4	J	+/-0.8
Tritium	pCi/g	0.2	0.09	22%		0	2	9	0.1	UJ	+/-0.1	0.1	J	+/-0.1	0.1	UJ	+/-0.1
Uranium-233/234	pCi/g	0.9	0.32	33%		0	3	9	0.7		+/-0.3	0.6	UJ	+/-0.2	0.9		+/-0.4
Uranium-235	pCi/g	0.2	0.08	33%		0	3	9	0.1	U	+/-0.1	0.1	J	+/-0.1	0.2	U	+/-0.1
Uranium-238	pCi/g	0.8	0.06	11%		0	1	9	0.8			0.6	UJ		0.6	U	

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-10			SD12-17			SD12-18			SD12-19		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12425			12432			12452			12440		
DEPTH TO TOP OF SAMPLE							0.2			0.2			0.2			0.2		
DEPTH TO BOTTOM OF SAMPLE							0.4			0.4			0.4			0.4		
SAMPLE DATE							7-Nov-97			8-Nov-97			10-Nov-97			6-Nov-97		
QC CODE							SA			SA			SA			SA		
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES												
Actinium-228	pCi/g	1.1	0.81	100%	5	5												
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	1.2		+/-0.3	1.9	J	+/-0.4	1.7	U		1.2	J	+/-0.2
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48	0.9		+/-0.2	1.1	J	+/-0.3	0.7	U		0.4		+/-0.1
Cobalt-57	pCi/g	0	0.0516304	0%	0	48	0.1	U		0.1	UJ		0.1	U		0.1	U	
Cobalt-60	pCi/g	0	0.1027174	0%	0	48	0.2	U		0.2	UJ		0.1	U		0.2	U	
Gross Alpha	pCi/g	18	11.625	100%	5	5												
Gross Beta	pCi/g	36	29.625	100%	5	5												
Lead-210	pCi/g	6.1	42.286413	10%	5	48	6	U		25.8	UJ		22.7	U		5.1	U	
Lead-211	pCi/g	22.4	3.9201087	19%	9	48	5	U		1.1	UJ		5.9	U		11.4		+/-5.2
Lead-214	pCi/g	2.9	1.5072	92%	49	53	1.6	J	+/-0.4	2.5	UJ		1.4		+/-0.4	1.2		+/-0.3
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48	0.1		+/-0.1	0.1	UJ	+/-0.1	0.1		+/-0.1	0.1		+/-0.1
Promethium-147	pCi/g	83	15.22	82%	9	11												
Radium-223	pCi/g	1.1	0.2418478	2%	1	48	0.6	U		0.5	UJ		0.5	U		0.3	U	
Radium-226	pCi/g	2.4	1.311413	71%	34	48	1.2		+/-0.3	1.9	J	+/-0.4	1.7	U		1.2	J	+/-0.2
Radium-228	pCi/g	3.2	1.7880435	92%	44	48	2.4		+/-0.5	2.2	J	+/-0.6	2.1		+/-0.5	1.2	J	+/-0.3
Thallium-208	pCi/g	0.85	0.48875	100%	5	5												
Thorium-227	pCi/g	0.3	0.1125	31%	14	45				0.2	U	+/-0.1				0.2	UJ	+/-0.1
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48	1.2	J	+/-0.8	1	UJ	+/-0.6	1.6	J	+/-1	0.5	UJ	+/-0.4
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48	1.3		+/-0.7	1.7	J	+/-0.8	0.4	J	+/-0.4	0.5	J	+/-0.3
Thorium-234	pCi/g	1.6	0.6675	100%	5	5												
Tritium	pCi/g	0.6	0.0684783	13%	6	48	0.1	UJ	+/-0.1	0.1	J	+/-0.1	0.1	UJ	+/-0.1	0.1	UJ	+/-0.1
Uranium-233/234*	pCi/g	1.5		43%	16	37	0.9		+/-0.3	1.3	J	+/-0.3	0.9		+/-0.3	0.4	U	+/-0.2
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11												
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48	0.1		+/-0.1	0.1	J	+/-0.1	0.1		+/-0.1	0.1		+/-0.1
Uranium-238	pCi/g	1	0.5065217	48%	23	48	0.8			0.9	J		0.9			0.6	U	

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-11			SD12-16			SD12-12			SD12-1		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12473			12428			12442			12439		
DEPTH TO TOP OF SAMPLE							0.2			0.3			0.3			0.3		
DEPTH TO BOTTOM OF SAMPLE							0.4			0.5			0.5			0.5		
SAMPLE DATE							13-Dec-97			8-Nov-97			9-Nov-97			9-Nov-97		
QC CODE							SA			SA			SA			SA		
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES												
Actinium-228	pCi/g	1.1	0.81	100%	5	5												
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	2.3	J	+/-0.5	1.8	J	+/-0.4	1.9	U		2.4		+/-0.6
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48	1.5		+/-0.2	0.6		+/-0.2	0.4		+/-0.2	0.2	U	
Cobalt-57	pCi/g	0	0.0516304	0%	0	48	0.1	U		0.1	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0	0.1027174	0%	0	48	0.1	U		0.2	U		0.4	U		0.1	U	
Gross Alpha	pCi/g	18	11.625	100%	5	5												
Gross Beta	pCi/g	36	29.625	100%	5	5												
Lead-210	pCi/g	6.1	42.286413	10%	5	48	5.3		+/-1.6	22	U		6.3	U		3	U	
Lead-211	pCi/g	22.4	3.9201087	19%	9	48	5		+/-2.2	5	U		2.5	U		1.6	U	
Lead-214	pCi/g	2.9	1.5072	92%	49	53	2		+/-0.4	1.7		+/-0.3	2.9		+/-0.3	1.9		+/-0.3
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48	0.3	U	+/-0.1	0.1	U	+/-0.1	0.2	UJ	+/-0.1	0.3	UJ	+/-0.1
Promethium-147	pCi/g	83	15.22	82%	9	11												
Radium-223	pCi/g	1.1	0.2418478	2%	1	48	0.4	U		0.4	U		0.5	U		0.5	U	
Radium-226	pCi/g	2.4	1.311413	71%	34	48	2.3	J	+/-0.5	1.8	J	+/-0.4	1.9	U		2.4		+/-0.6
Radium-228	pCi/g	3.2	1.7880435	92%	44	48	1.8	J	+/-0.4	2.2		+/-0.5	1.5		+/-0.4	2.3		+/-0.7
Thallium-208	pCi/g	0.85	0.48875	100%	5	5												
Thorium-227	pCi/g	0.3	0.1125	31%	14	45	0.7	U	+/-0.1	0.4	UJ	+/-0.2	0.2		+/-0.3	0.1		+/-0.2
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48	1.5	UJ	+/-0.6	0.8	UJ	+/-0.6	1.8	UJ	+/-1	1.7	UJ	+/-0.8
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48	1.1	J	+/-0.5	1.1	J	+/-0.6	1.4	J	+/-0.8	1	J	+/-0.6
Thorium-234	pCi/g	1.6	0.6675	100%	5	5												
Tritium	pCi/g	0.6	0.0684783	13%	6	48	0.1	UJ	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1
Uranium-233/234*	pCi/g	1.5		43%	16	37	0.6		+/-0.3	1.3		+/-0.4	0.9	U	+/-0.3	0.6	U	+/-0.3
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11												
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48	0.1	U	+/-0.1	0.1		+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1
Uranium-238	pCi/g	1	0.5065217	48%	23	48	0.8			0.7			0.8	U		0.6	U	

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-13			SD12-15			SD12-14			SD12-23		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12441			12434			12435			12420		
DEPTH TO TOP OF SAMPLE							0.3			0.4			0.5			0.15		
DEPTH TO BOTTOM OF SAMPLE							0.5			0.6			0.7			0.3		
SAMPLE DATE							9-Nov-97			9-Nov-97			9-Nov-97			7-Nov-97		
QC CODE							SA			SA			SA			SA		
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES												
Actinium-228	pCi/g	1.1	0.81	100%	5	5												
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	1.3		+/-0.3	1.9	U		1.5		+/-0.4	1		+/-0.2
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48	0.4	U		0.5	U		0.5	U		0.4	U	
Cobalt-57	pCi/g	0	0.0516304	0%	0	48	0.1	U		0.1	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0	0.1027174	0%	0	48	0.2	U		0.5	U		0.1	U		0.2	U	
Gross Alpha	pCi/g	18	11.625	100%	5	5												
Gross Beta	pCi/g	36	29.625	100%	5	5												
Lead-210	pCi/g	6.1	42.286413	10%	5	48	20.1	U		17.4	U		4.2	U		3.7	U	
Lead-211	pCi/g	22.4	3.9201087	19%	9	48	0.7	U		4.5	U		1.1	U		1.7	U	
Lead-214	pCi/g	2.9	1.5072	92%	49	53	1.4		+/-0.3	2		+/-0.3	1.3		+/-0.4	1.2	J	+/-0.3
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48	0.2	UJ	+/-0.1	0.3	UJ	+/-0.2	0.2	J	+/-0.2	0.1	U	+/-0.1
Promethium-147	pCi/g	83	15.22	82%	9	11												
Radium-223	pCi/g	1.1	0.2418478	2%	1	48	0.4	U		0.4	U		0.3	U		0.4	U	
Radium-226	pCi/g	2.4	1.311413	71%	34	48	1.3		+/-0.3	1.9	U		1.5		+/-0.4	1		+/-0.2
Radium-228	pCi/g	3.2	1.7880435	92%	44	48	1.5	U		2	U		1.5		+/-0.4	1.8		+/-0.6
Thallium-208	pCi/g	0.85	0.48875	100%	5	5												
Thorium-227	pCi/g	0.3	0.1125	31%	14	45	0.1		+/-0.2	0.1		+/-0.2	0.1		+/-0.2	0.1	J	+/-0.1
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48	1.5	UJ	+/-1	2.1	UJ	+/-1	2.5	UJ	+/-1.1	1.1	J	+/-0.7
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48	1	J	+/-0.7	0.9	J	+/-0.6	0.4	J	+/-0.4	0.6	J	+/-0.5
Thorium-234	pCi/g	1.6	0.6675	100%	5	5												
Tritium	pCi/g	0.6	0.0684783	13%	6	48	0.1		+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	UJ	+/-0.1
Uranium-233/234*	pCi/g	1.5		43%	16	37	0.9	U	+/-0.3	1.2	U	+/-0.4	0.7	U	+/-0.3	1		+/-0.4
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11												
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48	0.1	U	+/-0.1	0.2	U	+/-0.1	0.2	U	+/-0.1	0.1		+/-0.1
Uranium-238	pCi/g	1	0.5065217	48%	23	48	0.6	U		0.9	U		0.7	U		0.9		

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-26			SD12-24			SD12-25			SD12-27		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12400			12419			12401			12423		
DEPTH TO TOP OF SAMPLE							0.2			0.2			0.3			0.3		
DEPTH TO BOTTOM OF SAMPLE							0.3			0.4			0.5			0.5		
SAMPLE DATE							27-Oct-97			7-Nov-97			27-Oct-97			7-Nov-97		
QC CODE							SA			SA			SA			SA		
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES												
Actinium-228	pCi/g	1.1	0.81	100%	5	5												
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	1.5	J	+/-0.4	1.1		+/-0.3	0.3	UJ		1.3		+/-0.3
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48	0.3	UJ		0.6		+/-0.2	0.2	UJ		0.5		+/-0.1
Cobalt-57	pCi/g	0	0.0516304	0%	0	48	0.1	U		0.1	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0	0.1027174	0%	0	48	0.1	U		0.1	U		0.3	U		0.2	U	
Gross Alpha	pCi/g	18	11.625	100%	5	5												
Gross Beta	pCi/g	36	29.625	100%	5	5												
Lead-210	pCi/g	6.1	42.286413	10%	5	48	27.3	U		15	U		37.3	U		17.7	U	
Lead-211	pCi/g	22.4	3.9201087	19%	9	48	5.2	UJ		4.4	U		3.2	UJ		0.9	U	
Lead-214	pCi/g	2.9	1.5072	92%	49	53	1.3		+/-0.4	1.4	J	+/-0.3	0.2	U		1.7	J	+/-0.4
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48	0.1		+/-0.2	0.1		+/-0.1	0.1		+/-0.2	0.1		+/-0.1
Promethium-147	pCi/g	83	15.22	82%	9	11												
Radium-223	pCi/g	1.1	0.2418478	2%	1	48	0.6	U		0.4	U		0.4	U		0.4	U	
Radium-226	pCi/g	2.4	1.311413	71%	34	48	1.5	J	+/-0.4	1.1		+/-0.3	0.3	UJ		1.3		+/-0.3
Radium-228	pCi/g	3.2	1.7880435	92%	44	48	2.1		+/-0.6	1.8		+/-0.6	0.2	U		1.9		+/-0.4
Thallium-208	pCi/g	0.85	0.48875	100%	5	5												
Thorium-227	pCi/g	0.3	0.1125	31%	14	45	0.1	UJ	+/-0.1	0.4	UJ	+/-0.1	0.1	UJ	+/-0.1	0.2	UJ	+/-0.1
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48	1.2	J	+/-0.5	0.9	J	+/-0.7	1.2	J	+/-0.6	0.8	UJ	+/-0.5
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48	0.7	J	+/-0.3	0.8	J	+/-0.5	1.5	J	+/-0.5	1.3	J	+/-0.6
Thorium-234	pCi/g	1.6	0.6675	100%	5	5												
Tritium	pCi/g	0.6	0.0684783	13%	6	48	0.1	U	+/-0.1	0.1	UJ	+/-0.1	0.1	U	+/-0.1	0.1	UJ	+/-0.1
Uranium-233/234*	pCi/g	1.5		43%	16	37				1.1		+/-0.4				1		+/-0.4
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11	0.8		+/-0.3				0.7		+/-0.3			
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48	0.1		+/-0.1	0.2		+/-0.2	0.2		+/-0.1	0.2		+/-0.1
Uranium-238	pCi/g	1	0.5065217	48%	23	48	0.6			0.7	U		0.7			0.5	U	

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-20A			SD12-28			SD12-22			SD12-29		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12445			12409			12424			12463		
DEPTH TO TOP OF SAMPLE							0.3			0.4			0.5			0.5		
DEPTH TO BOTTOM OF SAMPLE							0.5			0.6			0.7			0.7		
SAMPLE DATE							7-Nov-97			29-Oct-97			7-Nov-97			4-Dec-97		
QC CODE							SA			SA			SA			SA		
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES												
Actinium-228	pCi/g	1.1	0.81	100%	5	5												
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	1.4	UJ		2.3	J	+/-0.7	1.3		+/-0.4	1.5	UJ	
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48	0.5		+/-0.2	0.2	UJ		1.4		+/-0.3	0.8	UJ	
Cobalt-57	pCi/g	0	0.0516304	0%	0	48	0.1	U		0.1	UJ		0.2	U		0.1	U	
Cobalt-60	pCi/g	0	0.1027174	0%	0	48	0.1	U		0.1	UJ		0.1	U		0.2	U	
Gross Alpha	pCi/g	18	11.625	100%	5	5												
Gross Beta	pCi/g	36	29.625	100%	5	5												
Lead-210	pCi/g	6.1	42.286413	10%	5	48	4.9	U		21.8	UJ		26	U		4.9		+/-2.3
Lead-211	pCi/g	22.4	3.9201087	19%	9	48	1.9	U		2.1	UJ		11.1		+/-4.1	13.3		+/-4.7
Lead-214	pCi/g	2.9	1.5072	92%	49	53	1.6		+/-0.4	1.6	J	+/-0.3	2.3	J	+/-0.5	2.1		+/-0.6
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48	0.1		+/-0.1	0.2	J	+/-0.3	0.1	J	+/-0.1	0.1	U	+/-0.1
Promethium-147	pCi/g	83	15.22	82%	9	11				17.4	UJ	+/-5.2				17.2		+/-5.3
Radium-223	pCi/g	1.1	0.2418478	2%	1	48	0.5	U		0.6	UJ		0.6	U		0.4	U	
Radium-226	pCi/g	2.4	1.311413	71%	34	48	1.4	UJ		2.3	J	+/-0.7	1.3		+/-0.4	1.5	UJ	
Radium-228	pCi/g	3.2	1.7880435	92%	44	48	2	J	+/-0.5	2.7	J	+/-0.7	3.2		+/-0.7	2.3	J	+/-0.7
Thallium-208	pCi/g	0.85	0.48875	100%	5	5												
Thorium-227	pCi/g	0.3	0.1125	31%	14	45	0.2	U	+/-0.1	0.2	UJ	+/-0.1	0.3	UJ	+/-0.1	0.1	UJ	+/-0.2
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48	1.3	U	+/-0.7	0.7	J	+/-0.6	0.8	UJ	+/-0.6	0.9	J	+/-0.7
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48	0.8	U	+/-0.5	1.3	J	+/-0.6	1	UJ	+/-0.6	1.4	J	+/-0.7
Thorium-234	pCi/g	1.6	0.6675	100%	5	5												
Tritium	pCi/g	0.6	0.0684783	13%	6	48	0.1	U	+/-0.1	0.1	UJ	+/-0.1	0.1	UJ	+/-0.1	0.1	UJ	+/-0.1
Uranium-233/234*	pCi/g	1.5		43%	16	37	0.7	UJ	+/-0.3				0.7	U	+/-0.3	0.7		+/-0.3
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11				0.9	J	+/-0.3						
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48	0.1	U	+/-0.1	0.1	UJ	+/-0.1	0.1		+/-0.1	0.2	U	+/-0.2
Uranium-238	pCi/g	1	0.5065217	48%	23	48	0.7	U		0.9	J		0.7	U		0.5	UJ	

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-2			SD12-32			SD12-35			SD12-37		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12002			12406			12433			12429		
DEPTH TO TOP OF SAMPLE							1			0.2			0.2			0.2		
DEPTH TO BOTTOM OF SAMPLE							1.2			0.4			0.4			0.4		
SAMPLE DATE							26-Oct-97			28-Oct-97			8-Nov-97			8-Nov-97		
QC CODE							SA			SA			SA			SA		
STUDY ID				FREQUENCY OF DETECTION	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE															
Actinium-228	pCi/g	1.1	0.81	100%	5	5												
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	1.3	J	+/-0.3	1.5	J	+/-0.4	0.2	UJ		1.6	UJ	
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48	0.4	UJ		0.5	U		0.1	UJ		0.7	U	
Cobalt-57	pCi/g	0	0.0516304	0%	0	48	0.1	U		0.1	U		0.1	UJ		0.1	U	
Cobalt-60	pCi/g	0	0.1027174	0%	0	48	0.1	U		0.2	U		0.1	UJ		0.4	U	
Gross Alpha	pCi/g	18	11.625	100%	5	5												
Gross Beta	pCi/g	36	29.625	100%	5	5												
Lead-210	pCi/g	6.1	42.286413	10%	5	48	700	U		4	U		1.4	UJ		4.4	U	
Lead-211	pCi/g	22.4	3.9201087	19%	9	48	1.2	UJ		8.5	U		4.5	UJ		0.8	U	
Lead-214	pCi/g	2.9	1.5072	92%	49	53	1.4		+/-0.3	1.4		+/-0.4	0.2	UJ		1.6		+/-0.3
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48	0.3	U	+/-0.2	0.2	J	+/-0.2	0.1	UJ	+/-0.1	0.2	U	+/-0.1
Promethium-147	pCi/g	83	15.22	82%	9	11				6.6		+/-3.8						
Radium-223	pCi/g	1.1	0.2418478	2%	1	48	0.4	U		0.4	U		0.5	UJ		0.4	U	
Radium-226	pCi/g	2.4	1.311413	71%	34	48	1.3	J	+/-0.3	1.5	J	+/-0.4	0.2	UJ		1.6	UJ	
Radium-228	pCi/g	3.2	1.7880435	92%	44	48	1.8		+/-0.4	1.4		+/-0.5	2.1	J	+/-0.5	1.2		+/-0.3
Thallium-208	pCi/g	0.85	0.48875	100%	5	5												
Thorium-227	pCi/g	0.3	0.1125	31%	14	45	0.1	UJ	+/-0.1	0.1	U	+/-0.1	0.1	UJ	+/-0.2	0.1	UJ	+/-0.1
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48	0.5	J	+/-0.5	0.5		+/-0.4	1.1	UJ	+/-0.6	0.4	UJ	+/-0.4
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48	0.8	J	+/-0.4	0.3	J	+/-0.2	1.3	J	+/-0.6	0.9	J	+/-0.5
Thorium-234	pCi/g	1.6	0.6675	100%	5	5												
Tritium	pCi/g	0.6	0.0684783	13%	6	48	0.1	U	+/-0.1	0.1		+/-0.1	0.6	J	+/-0.3	0.1	U	+/-0.1
Uranium-233/234*	pCi/g	1.5		43%	16	37							1.5	J	+/-0.4	0.5		+/-0.2
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11	0.8		+/-0.3	0.8		+/-0.3						
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48	0.1		+/-0.1	0.1	U	+/-0.1	0.2	J	+/-0.1	0.1		+/-0.1
Uranium-238	pCi/g	1	0.5065217	48%	23	48	0.6			0.6			1	J		0.7		

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-3			SD12-33			SD12-31			SD12-38		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12472			12405			12407			12427		
DEPTH TO TOP OF SAMPLE							0.2			0.3			0.3			0.4		
DEPTH TO BOTTOM OF SAMPLE							0.4			0.5			0.5			0.6		
SAMPLE DATE							13-Dec-97			28-Oct-97			28-Oct-97			8-Nov-97		
QC CODE							SA			SA			SA			SA		
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES												
Actinium-228	pCi/g	1.1	0.81	100%	5	5												
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	2	UJ		1.4	J	+/-0.3	1.7	J	+/-0.3	1.1	J	+/-0.3
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48	0.4		+/-0.2	0.5	U		0.5	J	+/-0.1	0.6	U	
Cobalt-57	pCi/g	0	0.0516304	0%	0	48	0.1	U		0.1	U		0.1	UJ		0.1	U	
Cobalt-60	pCi/g	0	0.1027174	0%	0	48	0.1	U		0.1	U		0.5	UJ		0.1	U	
Gross Alpha	pCi/g	18	11.625	100%	5	5												
Gross Beta	pCi/g	36	29.625	100%	5	5												
Lead-210	pCi/g	6.1	42.286413	10%	5	48	3.1	U		52.8	U		6.8	UJ		18.4	U	
Lead-211	pCi/g	22.4	3.9201087	19%	9	48	8.4	U		13.4		+/-3.4	1.9	UJ		3.3	U	
Lead-214	pCi/g	2.9	1.5072	92%	49	53	1.4		+/-0.3	1		+/-0.5	1.4	J	+/-0.4	1.5		+/-0.3
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48	0.5	UJ	+/-0.1	0.3	U	+/-0.2	0.2	UJ	+/-0.2	0.1	U	+/-0.1
Promethium-147	pCi/g	83	15.22	82%	9	11				4.3		+/-3.8	83	J	+/-5			
Radium-223	pCi/g	1.1	0.2418478	2%	1	48	0.5	U		0.4	U		0.4	UJ		1.1		+/-0.5
Radium-226	pCi/g	2.4	1.311413	71%	34	48	2	UJ		1.4	J	+/-0.3	1.7	J	+/-0.3	1.1	J	+/-0.3
Radium-228	pCi/g	3.2	1.7880435	92%	44	48	1.8	J	+/-0.6	1.1		+/-0.4	0.9	J	+/-0.4	2.4		+/-0.5
Thallium-208	pCi/g	0.85	0.48875	100%	5	5												
Thorium-227	pCi/g	0.3	0.1125	31%	14	45	0.3	U	+/-0.4	0.2	UJ	+/-0.1	0.1	UJ	+/-0.1	0.1	U	+/-0.1
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48	1.4	UJ	+/-0.6	0.8	J	+/-0.7	0.8	J	+/-0.5	0.6	UJ	+/-0.3
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48	1.3	J	+/-0.5	0.6	J	+/-0.5	1	J	+/-0.4	0.5	J	+/-0.3
Thorium-234	pCi/g	1.6	0.6675	100%	5	5												
Tritium	pCi/g	0.6	0.0684783	13%	6	48	0.1	UJ	+/-0.1	0.1	U	+/-0.1	0.2	UJ	+/-0.1	0.1	U	+/-0.1
Uranium-233/234*	pCi/g	1.5		43%	16	37	0.9		+/-0.3							0.9		+/-0.3
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11				0.8		+/-0.3	0.7		+/-0.3			
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48	0.2	U	+/-0.1	0.1		+/-0.1	0.2	J	+/-0.1	0.1		+/-0.1
Uranium-238	pCi/g	1	0.5065217	48%	23	48	0.5	U		0.6			0.4	J		0.7		

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-36			SD12-36			SD12-30			SD12-39		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12431			12430			12408			12426		
DEPTH TO TOP OF SAMPLE							0.4			0.4			0.5			0.5		
DEPTH TO BOTTOM OF SAMPLE							0.6			0.6			0.7			0.7		
SAMPLE DATE							9-Nov-97			9-Nov-97			28-Oct-97			7-Nov-97		
QC CODE							DU			SA			SA			SA		
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES												
Actinium-228	pCi/g	1.1	0.81	100%	5	5												
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	1.6		+/-0.5	1.9		+/-0.5	1.4	J	+/-0.4	1.2	J	+/-0.3
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48	0.3		+/-0.1	0.4		+/-0.1	0.6	U		0.8		+/-0.2
Cobalt-57	pCi/g	0	0.0516304	0%	0	48	0.1	U		0.1	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0	0.1027174	0%	0	48	0.1	U		0.2	U		0.4	U		0.3	U	
Gross Alpha	pCi/g	18	11.625	100%	5	5												
Gross Beta	pCi/g	36	29.625	100%	5	5												
Lead-210	pCi/g	6.1	42.286413	10%	5	48	15	UJ		4.3	J	+/-1.8	4.7	U		22.8	U	
Lead-211	pCi/g	22.4	3.9201087	19%	9	48	5.5	U		2.5	U		1.5	U		9.3	U	
Lead-214	pCi/g	2.9	1.5072	92%	49	53	1.3		+/-0.3	2.1		+/-0.4	1.2		+/-0.3	1.6		+/-0.4
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48	0.1	J	+/-0.1	0.2	J	+/-0.2	0.3	U	+/-0.2	0.2	U	+/-0.1
Promethium-147	pCi/g	83	15.22	82%	9	11							10.3	U	+/-5			
Radium-223	pCi/g	1.1	0.2418478	2%	1	48	0.3	U		0.5	U		0.4	U		0.4	U	
Radium-226	pCi/g	2.4	1.311413	71%	34	48	1.6		+/-0.5	1.9		+/-0.5	1.4	J	+/-0.4	1.2	J	+/-0.3
Radium-228	pCi/g	3.2	1.7880435	92%	44	48	1.6	J	+/-0.4	1.1	J	+/-0.3	1.5		+/-0.5	2.3	J	+/-0.5
Thallium-208	pCi/g	0.85	0.48875	100%	5	5												
Thorium-227	pCi/g	0.3	0.1125	31%	14	45	0.1	J	+/-0.1	0.1		+/-0.2	0.1	U	+/-0.1	0.4	UJ	+/-0.1
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48	0.8	UJ	+/-0.6	1.5	UJ	+/-0.8	0.6		+/-0.4	1.6	UJ	+/-0.8
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48	1	J	+/-0.6	0.4	UJ	+/-0.4	1	J	+/-0.3	1	J	+/-0.6
Thorium-234	pCi/g	1.6	0.6675	100%	5	5												
Tritium	pCi/g	0.6	0.0684783	13%	6	48	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1
Uranium-233/234*	pCi/g	1.5		43%	16	37	0.7	U	+/-0.3	0.7	U	+/-0.3				0.9	UJ	+/-0.3
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11							0.8		+/-0.3			
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1		+/-0.1	0.1	U	+/-0.1
Uranium-238	pCi/g	1	0.5065217	48%	23	48	0.4	U		0.6	U		0.6			0.7	U	

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-34			SD12-34			SD12-43			SD12-46		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12202			12418			12451			12443		
DEPTH TO TOP OF SAMPLE							0.6			0.6			0.1			0.15		
DEPTH TO BOTTOM OF SAMPLE							0.8			0.8			0.3			0.3		
SAMPLE DATE							8-Nov-97			8-Nov-97			9-Nov-97			6-Nov-97		
QC CODE							DU			SA			SA			SA		
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES												
Actinium-228	pCi/g	1.1	0.81	100%	5	5												
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	2.3	UJ		1.5	J	+/-0.5	1.8		+/-0.6	1.4	UJ	
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48	0.9	U		0.7	U		1.2	U		0.4	U	
Cobalt-57	pCi/g	0	0.0516304	0%	0	48	0.2	U		0.1	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0	0.1027174	0%	0	48	0.7	U		0.3	U		0.2	U		0.4	U	
Gross Alpha	pCi/g	18	11.625	100%	5	5												
Gross Beta	pCi/g	36	29.625	100%	5	5												
Lead-210	pCi/g	6.1	42.286413	10%	5	48	2.7	U		2.2	U		4	U		1.8	U	
Lead-211	pCi/g	22.4	3.9201087	19%	9	48	3	U		8.1	U		6.5	U		8.9		+/-4.1
Lead-214	pCi/g	2.9	1.5072	92%	49	53	1.8	J	+/-0.4	2.5	J	+/-0.6	2.1		+/-0.4	1.4		+/-0.4
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48	0.2	U	+/-0.1	0.1	U	+/-0.1	0.1	J	+/-0.1	0.2		+/-0.2
Promethium-147	pCi/g	83	15.22	82%	9	11	6.6		+/-3.8	5.9		+/-3.8						
Radium-223	pCi/g	1.1	0.2418478	2%	1	48	0.6	U		0.5	U		0.5	U		0.4	U	
Radium-226	pCi/g	2.4	1.311413	71%	34	48	2.3	UJ		1.5	J	+/-0.5	1.8		+/-0.6	1.4	UJ	
Radium-228	pCi/g	3.2	1.7880435	92%	44	48	1.3	J	+/-0.6	2.8	J	+/-0.8	2.6		+/-0.6	1.7	J	+/-0.6
Thallium-208	pCi/g	0.85	0.48875	100%	5	5												
Thorium-227	pCi/g	0.3	0.1125	31%	14	45	0.1	UJ	+/-0.2	0.3	UJ	+/-0.1	0.4	UJ	+/-0.2	0.1	J	+/-0.1
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48	1.2	J	+/-0.6	1.2	J	+/-0.6	0.6	UJ	+/-0.5	1.3	UJ	+/-0.7
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48	0.2	J	+/-0.5	0.4	J	+/-0.3	0.9	J	+/-0.6	0.8	J	+/-0.5
Thorium-234	pCi/g	1.6	0.6675	100%	5	5												
Tritium	pCi/g	0.6	0.0684783	13%	6	48	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	UJ	+/-0.1	0.1	U	+/-0.1
Uranium-233/234*	pCi/g	1.5		43%	16	37	0.7		+/-0.3	0.5		+/-0.2	0.7	U	+/-0.3	0.6	UJ	+/-0.3
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11												
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1		+/-0.1	0.1	U	+/-0.1
Uranium-238	pCi/g	1	0.5065217	48%	23	48	0.7			0.8			0.7	U		0.7	U	

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-4			SD12-47			SD12-45			SD12-41		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12438			12446			12450			12403		
DEPTH TO TOP OF SAMPLE							0.2			0.2			0.2			0.3		
DEPTH TO BOTTOM OF SAMPLE							0.4			0.4			0.4			0.5		
SAMPLE DATE							9-Nov-97			7-Nov-97			9-Nov-97			28-Oct-97		
QC CODE							SA			SA			SA			SA		
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES												
Actinium-228	pCi/g	1.1	0.81	100%	5	5												
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	2.3	UJ		1.5	J	+/-0.3	1.9	U		2.2	J	+/-0.5
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48	1.4	UJ		1.4		+/-0.2	0.7		+/-0.2	0.8	U	
Cobalt-57	pCi/g	0	0.0516304	0%	0	48	0.1	UJ		0.1	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0	0.1027174	0%	0	48	0.4	UJ		0.2	U		0.1	U		0.2	U	
Gross Alpha	pCi/g	18	11.625	100%	5	5												
Gross Beta	pCi/g	36	29.625	100%	5	5												
Lead-210	pCi/g	6.1	42.286413	10%	5	48	6.1	UJ		17.6	U		38.1	U		4.5		+/-2.1
Lead-211	pCi/g	22.4	3.9201087	19%	9	48	21.9	UJ		7.7		+/-2.5	0.8	U		2.4	U	
Lead-214	pCi/g	2.9	1.5072	92%	49	53	2.4	J	+/-0.5	1.6		+/-0.3	0.9		+/-0.3	1.9		+/-0.4
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48	0.2	UJ	+/-0.2	0.1	J	+/-0.2	0.2	UJ	+/-0.1	0.1		+/-0.2
Promethium-147	pCi/g	83	15.22	82%	9	11							15.2		+/-5.3	5.7		+/-3.8
Radium-223	pCi/g	1.1	0.2418478	2%	1	48	0.5	UJ		0.4	U		0.4	U		0.5	U	
Radium-226	pCi/g	2.4	1.311413	71%	34	48	2.3	UJ		1.5	J	+/-0.3	1.9	U		2.2	J	+/-0.5
Radium-228	pCi/g	3.2	1.7880435	92%	44	48	2	J	+/-0.4	2.2	J	+/-0.6	1.6		+/-0.5	1.9		+/-0.6
Thallium-208	pCi/g	0.85	0.48875	100%	5	5												
Thorium-227	pCi/g	0.3	0.1125	31%	14	45	0.1	J	+/-0.2	0.1	J	+/-0.1	0.3		+/-0.4	0.1	U	+/-0.1
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48	3	UJ	+/-1.2	3.6	UJ	+/-1.4	2	UJ	+/-1	1.2		+/-0.5
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48	0.9	UJ	+/-0.6	1.3	J	+/-0.7	0.6	UJ	+/-0.5	0.7	J	+/-0.3
Thorium-234	pCi/g	1.6	0.6675	100%	5	5												
Tritium	pCi/g	0.6	0.0684783	13%	6	48	0.1	J	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1		+/-0.1
Uranium-233/234*	pCi/g	1.5		43%	16	37	1	UJ	+/-0.4	1.3	UJ	+/-0.4	0.8	U	+/-0.3			
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11										1.2		+/-0.4
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48	0.1	UJ	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.2		+/-0.2
Uranium-238	pCi/g	1	0.5065217	48%	23	48	0.6	UJ		0.7	U		0.8	U		0.6		

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-44			SD12-42			SD12-40			SD12-5		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12464			12444			12404			12436		
DEPTH TO TOP OF SAMPLE							0.3			0.3			0.4			0.2		
DEPTH TO BOTTOM OF SAMPLE							0.5			0.5			0.6			0.4		
SAMPLE DATE							5-Dec-97			7-Nov-97			28-Oct-97			7-Nov-97		
QC CODE							SA			SA			SA			SA		
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES												
Actinium-228	pCi/g	1.1	0.81	100%	5	5												
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	0.9	J	+/-0.3	1.2	UJ		1.6	J	+/-0.5	1.1		+/-0.3
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48	0.1	UJ		0.7		+/-0.2	0.3		+/-0.1	0.5		+/-0.1
Cobalt-57	pCi/g	0	0.0516304	0%	0	48	0.1	U		0.1	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0	0.1027174	0%	0	48	0.4	U		0.1	U		0.3	U		0.1	U	
Gross Alpha	pCi/g	18	11.625	100%	5	5												
Gross Beta	pCi/g	36	29.625	100%	5	5												
Lead-210	pCi/g	6.1	42.286413	10%	5	48	2.9	U		19.6	U		6.1		+/-2.5	26.1	U	
Lead-211	pCi/g	22.4	3.9201087	19%	9	48	1.9	U		0.7	U		2.1	U		10.2	U	
Lead-214	pCi/g	2.9	1.5072	92%	49	53	1.4		+/-0.3	1.2		+/-0.3	1.1		+/-0.3	1.7	J	+/-0.3
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48	0.1	UJ	+/-0.2	0.1		+/-0.1	0.1		+/-0.2	0.1	J	+/-0.1
Promethium-147	pCi/g	83	15.22	82%	9	11							0.1		+/-3.6			
Radium-223	pCi/g	1.1	0.2418478	2%	1	48	0.5	U		0.4	U		0.4	U		0.4	U	
Radium-226	pCi/g	2.4	1.311413	71%	34	48	0.9	J	+/-0.3	1.2	UJ		1.6	J	+/-0.5	1.1		+/-0.3
Radium-228	pCi/g	3.2	1.7880435	92%	44	48	1.6	J	+/-0.5	2	J	+/-0.4	2.1		+/-0.5	1.4	U	
Thallium-208	pCi/g	0.85	0.48875	100%	5	5												
Thorium-227	pCi/g	0.3	0.1125	31%	14	45	0.4	U	+/-0.1	0.3	U	+/-0.1	0.1	U	+/-0.1			
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48	1.1	J	+/-0.5	1	U	+/-0.6	1.9		+/-0.6	0.5	UJ	+/-0.5
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48	0.4	J	+/-0.3	0.6	U	+/-0.4	1.1	J	+/-0.4	0.7		+/-0.5
Thorium-234	pCi/g	1.6	0.6675	100%	5	5												
Tritium	pCi/g	0.6	0.0684783	13%	6	48	0.1	UJ	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	UJ	+/-0.1
Uranium-233/234*	pCi/g	1.5		43%	16	37	0.8		+/-0.3	0.6	UJ	+/-0.3				0.7	U	+/-0.2
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11							0.4		+/-0.2			
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1		+/-0.1
Uranium-238	pCi/g	1	0.5065217	48%	23	48	0.8	J		0.5	U		0.5			0.5	U	

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-6			SD12-7			SD12-8			SD12-9		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12422			12421			12402			12437		
DEPTH TO TOP OF SAMPLE							0.2			0.3			0.2			0.3		
DEPTH TO BOTTOM OF SAMPLE							0.4			0.5			0.4			0.5		
SAMPLE DATE							9-Nov-97			9-Nov-97			27-Oct-97			7-Nov-97		
QC CODE							SA			SA			SA			SA		
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES												
Actinium-228	pCi/g	1.1	0.81	100%	5	5												
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	2.3		+/-0.6	2.3		+/-0.5	1.3	J	+/-0.4	0.9		+/-0.3
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48	0.5	U		0.7	U		0.6	J	+/-0.2	0.4		+/-0.1
Cobalt-57	pCi/g	0	0.0516304	0%	0	48	0.1	U		0.1	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0	0.1027174	0%	0	48	0.1	U		0.1	U		0.1	U		0.1	U	
Gross Alpha	pCi/g	18	11.625	100%	5	5												
Gross Beta	pCi/g	36	29.625	100%	5	5												
Lead-210	pCi/g	6.1	42.286413	10%	5	48	5.8	U		4.2	U		2600	U		3.6	U	
Lead-211	pCi/g	22.4	3.9201087	19%	9	48	14.1		+/-6	1.3	U		22.4	J	+/-8.1	2.5	U	
Lead-214	pCi/g	2.9	1.5072	92%	49	53	2		+/-0.4	2.8		+/-0.5	1.7		+/-0.4	2	UJ	
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48	0.2	J	+/-0.2	0.1	J	+/-0.1	0.3	U	+/-0.1	0.1	J	+/-0.1
Promethium-147	pCi/g	83	15.22	82%	9	11												
Radium-223	pCi/g	1.1	0.2418478	2%	1	48	0.5	U		0.5	U		0.4	U		0.4	U	
Radium-226	pCi/g	2.4	1.311413	71%	34	48	2.3		+/-0.6	2.3		+/-0.5	1.3	J	+/-0.4	0.9		+/-0.3
Radium-228	pCi/g	3.2	1.7880435	92%	44	48	1.5		+/-0.5	2.1		+/-0.6	2.2		+/-0.4	1.3		+/-0.4
Thallium-208	pCi/g	0.85	0.48875	100%	5	5												
Thorium-227	pCi/g	0.3	0.1125	31%	14	45	0.2		+/-0.3	0.1		+/-0.3	0.1	U	+/-0.1	0.2	UJ	+/-0.1
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48	1.5	UJ	+/-0.9	2.1	UJ	+/-1	0.7		+/-0.5	0.9	J	+/-0.5
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48	1.3	J	+/-0.8	0.6	UJ	+/-0.5	0.9	J	+/-0.3	0.9	J	+/-0.4
Thorium-234	pCi/g	1.6	0.6675	100%	5	5												
Tritium	pCi/g	0.6	0.0684783	13%	6	48	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	UJ	+/-0.1
Uranium-233/234*	pCi/g	1.5		43%	16	37	0.4	U	+/-0.3	0.9	U	+/-0.3				0.7	UJ	+/-0.2
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11							0.7		+/-0.3			
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1		+/-0.1	0.1	U	+/-0.1
Uranium-238	pCi/g	1	0.5065217	48%	23	48	0.5	U		0.6	U		0.7			0.5	UJ	

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12	
LOCATION ID							SD12A-1			SD12A-2			SD12A-1			SD12A-3	
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT	
SAMPLE ID							SD12A-1			SD12A-2			SD12A-20			SD12A-3	
DEPTH TO TOP OF SAMPLE							0			0			0			0	
DEPTH TO BOTTOM OF SAMPLE							0.2			0.2			0.2			0.2	
SAMPLE DATE							22-Jun-94			11-Jun-94			22-Jun-94			11-Jun-94	
QC CODE							SA			SA			DU			SA	
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	ESI			ESI			ESI			ESI	
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES											
Actinium-228	pCi/g	1.1	0.81	100%	5	5	0.92		+/-0.38	0.63		+/-0.28	1.1		+/-0.5	0.88	+/-0.27
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	1.1		+/-0.3	0.97		+/-0.28	1.2		+/-0.3	1.1	+/-0.3
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48											
Cobalt-57	pCi/g	0	0.0516304	0%	0	48											
Cobalt-60	pCi/g	0	0.1027174	0%	0	48											
Gross Alpha	pCi/g	18	11.625	100%	5	5	18		+/-7	8		+/-4	17		+/-7	12	+/-5
Gross Beta	pCi/g	36	29.625	100%	5	5	27		+/-6	28		+/-6	26		+/-6	36	+/-6
Lead-210	pCi/g	6.1	42.286413	10%	5	48											
Lead-211	pCi/g	22.4	3.9201087	19%	9	48											
Lead-214	pCi/g	2.9	1.5072	92%	49	53	1.2		+/-0.2	0.92		+/-0.15	1.1		+/-0.2	0.83	+/-0.11
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48											
Promethium-147	pCi/g	83	15.22	82%	9	11											
Radium-223	pCi/g	1.1	0.2418478	2%	1	48											
Radium-226	pCi/g	2.4	1.311413	71%	34	48											
Radium-228	pCi/g	3.2	1.7880435	92%	44	48											
Thallium-208	pCi/g	0.85	0.48875	100%	5	5	0.39		+/-0.21	0.26		+/-0.05	0.52		+/-0.23	0.39	+/-0.21
Thorium-227	pCi/g	0.3	0.1125	31%	14	45											
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48											
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48											
Thorium-234	pCi/g	1.6	0.6675	100%	5	5	0.56		+/-0.39	0.61		+/-0.47	1.6		+/-0.4	0.44	+/-0.26
Tritium	pCi/g	0.6	0.0684783	13%	6	48											
Uranium-233/234*	pCi/g	1.5		43%	16	37											
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11											
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48											
Uranium-238	pCi/g	1	0.5065217	48%	23	48											

TABLE H-5
SITE RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12		
LOCATION ID							SD12A-4		
MATRIX							SEDIMENT		
SAMPLE ID							SD12A-4		
DEPTH TO TOP OF SAMPLE							0		
DEPTH TO BOTTOM OF SAMPLE							0.2		
SAMPLE DATE							11-Jun-94		
QC CODE							SA		
STUDY ID				FREQUENCY OF	NUMBER OF	NUMBER OF	ESI		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES			
Actinium-228	pCi/g	1.1	0.81	100%	5	5	0.72		+/-0.28
Bismuth-214	pCi/g	2.4	1.2873	74%	39	53	0.82		+/-0.12
Cesium-137	pCi/g	1.5	0.4630435	46%	22	48			
Cobalt-57	pCi/g	0	0.0516304	0%	0	48			
Cobalt-60	pCi/g	0	0.1027174	0%	0	48			
Gross Alpha	pCi/g	18	11.625	100%	5	5	9		+/-5
Gross Beta	pCi/g	36	29.625	100%	5	5	28		+/-5
Lead-210	pCi/g	6.1	42.286413	10%	5	48			
Lead-211	pCi/g	22.4	3.9201087	19%	9	48			
Lead-214	pCi/g	2.9	1.5072	92%	49	53	0.86		+/-0.11
Plutonium-239/240	pCi/g	0.2	0.1146739	50%	24	48			
Promethium-147	pCi/g	83	15.22	82%	9	11			
Radium-223	pCi/g	1.1	0.2418478	2%	1	48			
Radium-226	pCi/g	2.4	1.311413	71%	34	48			
Radium-228	pCi/g	3.2	1.7880435	92%	44	48			
Thallium-208	pCi/g	0.85	0.48875	100%	5	5	0.85		+/-0.28
Thorium-227	pCi/g	0.3	0.1125	31%	14	45			
Thorium-230	pCi/g	1.9	0.8277174	42%	20	48			
Thorium-232	pCi/g	1.7	0.8532609	85%	41	48			
Thorium-234	pCi/g	1.6	0.6675	100%	5	5	0.54		+/-0.37
Tritium	pCi/g	0.6	0.0684783	13%	6	48			
Uranium-233/234*	pCi/g	1.5		43%	16	37			
Uranium-234*	pCi/g	1.2	0.6586957	100%	11	11			
Uranium-235	pCi/g	0.2	0.0913043	46%	22	48			
Uranium-238	pCi/g	1	0.5065217	48%	23	48			

TABLE H-6
DOWNGRADIENT RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY							SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID							SD12-48			SD12-49			SD12-50			SD12-52		
MATRIX							SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID							12462			12461			12460			12469		
DEPTH TO TOP OF SAMPLE							0.4			0.8			0.2			0.4		
DEPTH TO BOTTOM OF SAMPLE							0.6			1			0.4			0.6		
SAMPLE DATE							11-Nov-97			11-Nov-97			11-Nov-97			10-Dec-97		
STUDY ID							SA			SA			SA			SA		
				FREQUENCY	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
				OF	OF	OF												
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS	ANALYSES												
Bismuth-214	pCi/g	1.7	1.22	55%	6	11	1.7		+/-0.4	1.6		+/-0.4	1.5		+/-0.3	1.7	U	
Cesium-137	pCi/g	0.4	0.182	9%	1	11	0.2	U		0.2	U		0.2	U		0.1	U	
Cobalt-57	pCi/g	0	0.055	0%	0	11	0.1	U		0.1	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0	0.182	0%	0	11	0.3	U		0.8	U		0.2	U		0.3	U	
Lead-210	pCi/g	0	7.41	0%	0	11	48.6	U		6.9	U		13.8	U		4.6	U	
Lead-211	pCi/g	14.5	3.98	18%	2	11	10.1	U		3.2	U		4.9	U		11.7	U	
Lead-214	pCi/g	2.3	1.65	100%	11	11	1.3		+/-0.3	1.8		+/-0.4	1.4		+/-0.4	1.3		+/-0.3
Plutonium-239/240	pCi/g	0	0.132	0%	0	11	0.2	UJ	+/-0.1	0.4	UJ	+/-0.3	0.1	U	+/-0.1	0.4	UJ	+/-0.4
Radium-223	pCi/g	0	0.223	0%	0	11	0.4	U		0.5	U		0.4	U		0.4	U	
Radium-226	pCi/g	1.7	1.22	55%	6	11	1.7		+/-0.4	1.6		+/-0.4	1.5		+/-0.3	1.7	U	
Radium-228	pCi/g	3.2	1.99	91%	10	11	1.5	U		1.9		+/-0.5	2.2		+/-0.5	1.1		+/-0.4
Thorium-227	pCi/g	1	0.282	64%	7	11	0.6	UJ	+/-0.1	0.4	U	+/-0.1	0.1		+/-0.3	0.1		+/-0.3
Thorium-230	pCi/g	3.4	0.536	9%	1	11	1.2	UJ	+/-0.9	1.5	UJ	+/-0.8	1.6	UJ	+/-0.8	1.7	UJ	+/-0.8
Thorium-232	pCi/g	1.6	0.973	100%	11	11	0.7	J	+/-0.7	1.4	J	+/-0.7	0.5	J	+/-0.4	0.6	J	+/-0.4
Tritium	pCi/g	0.1	0.055	9%	1	11	0.1	UJ	+/-0.1	0.1	UJ	+/-0.1	0.1	UJ	+/-0.1	0.1		+/-0.1
Uranium-233/234	pCi/g	1.7	0.809	73%	8	11	0.5	U	+/-0.2	1.1		+/-0.4	0.8		+/-0.3	0.9		+/-0.3
Uranium-235	pCi/g	0	0.077	0%	0	11	0.1	U	+/-0.1	0.4	U	+/-0.2	0.1	U	+/-0.1	0.2	U	+/-0.2
Uranium-238	pCi/g	1.2	0.532	64%	7	11	0.6	U		1.2			0.5	U		0.6		

TABLE H-6
DOWNGRADIENT RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY						SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID						SD12-54			SD12-57			SD12-56			SD12-51			SD12-53		
MATRIX						SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT			SEDIMENT		
SAMPLE ID						12471			12466			12467			12459			12470		
DEPTH TO TOP OF SAMPLE						0.4			0.5			0.5			0.6			0.6		
DEPTH TO BOTTOM OF SAMPLE						0.5			0.7			0.7			0.7			0.8		
SAMPLE DATE						10-Dec-97			9-Dec-97			9-Dec-97			11-Nov-97			10-Dec-97		
STUDY ID						SA			SA			SA			SA			SA		
				FREQUENCY OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS															
Bismuth-214	pCi/g	1.7	1.22	55%	6	1.8	U		1.4		+/-0.4	1.6		+/-0.4	1.8	U		1.9	U	
Cesium-137	pCi/g	0.4	0.182	9%	1	0.2	U		0.4	U		0.9	U		0.2	U		0.4	U	
Cobalt-57	pCi/g	0	0.055	0%	0	0.1	U		0.1	U		0.2	U		0.1	U		0.1	U	
Cobalt-60	pCi/g	0	0.182	0%	0	0.2	U		0.5	U		0.6	U		0.3	U		0.2	U	
Lead-210	pCi/g	0	7.41	0%	0	1.5	U		41.5	U		4	U		5.3	U		18.5	U	
Lead-211	pCi/g	14.5	3.98	18%	2	3.1	U		7		+/-2.4	14.5		+/-3.7	1	U		1.4	U	
Lead-214	pCi/g	2.3	1.65	100%	11	1.8		+/-0.3	2.2		+/-0.5	2.3		+/-0.5	1.5		+/-0.4	1.5		+/-0.3
Plutonium-239/240	pCi/g	0	0.132	0%	0	0.3	UJ	+/-0.1	0.2	U	+/-0.2	0.2	UJ	+/-0.1	0.2	UJ	+/-0.3	0.2	UJ	+/-0.2
Radium-223	pCi/g	0	0.223	0%	0	0.4	U		0.5	U		0.5	UJ		0.5	U		0.4	U	
Radium-226	pCi/g	1.7	1.22	55%	6	1.8	U		1.4		+/-0.4	1.6		+/-0.4	1.8	U		1.9	U	
Radium-228	pCi/g	3.2	1.99	91%	10	1.3		+/-0.5	2.5		+/-0.7	3.2		+/-0.6	2.4		+/-0.5	2.3		+/-0.5
Thorium-227	pCi/g	1	0.282	64%	7	0.1		+/-0.2	0.5	U	+/-0.1	0.5	U	+/-0.1	0.2	J	+/-0.3	0.1		+/-0.2
Thorium-230	pCi/g	3.4	0.536	9%	1	3.4	J	+/-1.4	1.5	UJ	+/-0.7	2.1	UJ	+/-1	2.6	UJ	+/-1	1.4	UJ	+/-0.7
Thorium-232	pCi/g	1.6	0.973	100%	11	1.6	J	+/-0.9	0.5	J	+/-0.4	0.8	J	+/-0.6	0.8	J	+/-0.5	1.2	J	+/-0.6
Tritium	pCi/g	0.1	0.055	9%	1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	UJ	+/-0.1	0.1	U	+/-0.1
Uranium-233/234	pCi/g	1.7	0.809	73%	8	1.2	J	+/-0.4	0.6	U	+/-0.2	1.1		+/-0.5	0.8	UJ	+/-0.4	1.7	J	+/-0.6
Uranium-235	pCi/g	0	0.077	0%	0	0.2	UJ	+/-0.1	0.2	U	+/-0.1	0.3	U	+/-0.2	0.1	UJ	+/-0.1	0.3	UJ	+/-0.2
Uranium-238	pCi/g	1.2	0.532	64%	7	0.7	J		0.5	U		0.7			0.7	UJ		1.1	J	

TABLE H-6
DOWNGRADIENT RADIOLOGICAL DATA-SEDIMENT
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY						SEAD-12			SEAD-12		
LOCATION ID						SD12-58			SD12-55		
MATRIX						SEDIMENT			SEDIMENT		
SAMPLE ID						12465			12468		
DEPTH TO TOP OF SAMPLE						0.7			0.7		
DEPTH TO BOTTOM OF SAMPLE						0.9			0.9		
SAMPLE DATE						9-Dec-97			9-Dec-97		
STUDY ID						SA			SA		
				FREQUENCY	NUMBER	RI Phase 1	Step 1		RI Phase 1	Step 1	
				OF	OF						
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	DETECTS						
Bismuth-214	pCi/g	1.7	1.22	55%	6	1		+/-0.4	2	U	
Cesium-137	pCi/g	0.4	0.182	9%	1	0.4		+/-0.2	0.4	U	
Cobalt-57	pCi/g	0	0.055	0%	0	0.1	U		0.1	U	
Cobalt-60	pCi/g	0	0.182	0%	0	0.4	U		0.2	U	
Lead-210	pCi/g	0	7.41	0%	0	3.5	U		14.9	U	
Lead-211	pCi/g	14.5	3.98	18%	2	2.8	U		6.3	U	
Lead-214	pCi/g	2.3	1.65	100%	11	1.4		+/-0.4	1.7		+/-0.3
Plutonium-239/240	pCi/g	0	0.132	0%	0	0.3	UJ	+/-0.1	0.1	UJ	+/-0.2
Radium-223	pCi/g	0	0.223	0%	0	0.5	U		0.4	U	
Radium-226	pCi/g	1.7	1.22	55%	6	1		+/-0.4	2	U	
Radium-228	pCi/g	3.2	1.99	91%	10	2		+/-0.5	2.2		+/-0.5
Thorium-227	pCi/g	1	0.282	64%	7	0.5		+/-0.5	1		+/-0.7
Thorium-230	pCi/g	3.4	0.536	9%	1	1.3	UJ	+/-0.7	2.9	UJ	+/-1.2
Thorium-232	pCi/g	1.6	0.973	100%	11	1.1	J	+/-0.7	1.5	J	+/-0.8
Tritium	pCi/g	0.1	0.055	9%	1	0.1	U	+/-0.1	0.1	U	+/-0.1
Uranium-233/234	pCi/g	1.7	0.809	73%	8	0.8	J	+/-0.4	1.1		+/-0.4
Uranium-235	pCi/g	0	0.077	0%	0	0.2	UJ	+/-0.1	0.3	U	+/-0.2
Uranium-238	pCi/g	1.2	0.532	64%	7	0.6	J		0.7		

APPENDIX I

BACKGROUND, PHASE I RI CHEMICAL AND RADIOLOGICAL DATA-SURFACE WATER

- TABLE I-1: BACKGROUND METALS DATA-SURFACE WATER
- TABLE I-2: SITE CHEMICAL DATA-SURFACE WATER
- TABLE I-3: DOWNGRADIENT CHEMICAL DATA-SURFACE WATER
- TABLE I-4: BACKGROUND RADIOLOGICAL DATA-SURFACE WATER
- TABLE I-5: SITE RADIOLOGICAL DATA-SURFACE WATER
- TABLE I-6: DOWNGRADIENT RADIOLOGICAL DATA-SURFACE WATER

SPECIFIC NOTES-

THE SAMPLE DEPTH TO TOP OF SAMPLE AND TO BOTTOM ON ALL TABLES ARE IN FEET.

CHEMICAL CRITERIA BASED ON NYSDEC CLASS C STDS. FOR SURFACE WATER.

GROSS ALPHA VALUES ARE BASED ON EPA MCL AND NYSDEC CLASS GA STDS.

GROSS BETA VALUES ARE BASED ON NYSDEC CLASS GA STDS.

RADIUM-226 = 3 pCi/L PER NYSDEC CLASS GA STDS.

RADIUM-226 AND-228 = 5 pCi/L TOTAL FOR NYSDEC CLASS GA AND EPA MCL STDS.

RADON-222 = 300 pCi/L FOR PROPOSED EPA MCL .

GROSS ALPHA VALUES BASED ON EPA MCL AND NYSDEC CLASS GA STDS.

GROSS BETA VALUES BASED ON NYSDEC CLASS GA AND EPA MCL STDS.

RADIUM-223 = 3 pCi/L NYSDEC CLASS GA STDS.

RADIUM-226 AND –228 = 5 pCi/L TOTAL FOR NYSDEC CLASS GA AND EPA MCL STDS.

RADON-222 = 300 pCi/L FOR NYSDEC CLASS GA AND EPA MCL STDS.

URANIUM-234 = 124847 pCi/L , URANIUM-235 = 43.4pCi/L, AND URANIUM-238 = 6.7 pCi/L FOR PROPOSED EPA MCL STDS.
[CONVERSION COMPLETED USING THE EQUATION; $mg/L_{water} = (2.8 \times 10^{-15}) \times A \times T_{1/2} \times pCi/L$]

LABORATORY RESULTS FOR URANIUM-233/234 AND –234 WERE COMBINED IN THIS TABLE.

TABLE I-1
BACKGROUND METALS DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-59		SW12-60		SW12-61		SW12-63	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12053		12054		12055		12048	
SAMP_DEPTH_TOP								0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A	
SAMP_DATE								10-Nov-97		10-Nov-97		11-Nov-97		9-Nov-97	
QC_CODE								SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER OF	NUMBER OF	NUMBER OF	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES								
Aluminum	UG/L	140	100%	100	1	9	9	90		62.9		140		57.6		12.8
Antimony	UG/L	0	0%		0	0	9	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U
Arsenic	UG/L	0	0%	150	0	0	9	3.6	U	3.6	U	3.6	U	3.6	U	3.6	U
Barium	UG/L	48.3	100%		0	9	9	36.1		37.9		43.9		25.1		48.3	
Beryllium	UG/L	0	0%	1100	0	0	9	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Cadmium	UG/L	0.88	22%	3.845011	0	2	9	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
Calcium	UG/L	85500	100%		0	9	9	56400		59600		85500		54800		70800	
Chromium	UG/L	0	0%	139.78605	0	0	9	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Cobalt	UG/L	0	0%	5	0	0	9	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
Copper	UG/L	3	11%	17.362284	0	1	9	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U
Cyanide	UG/L	0	0%	5.2	0	0	9	5	U	5	U	5	U	5	U	5	U
Iron	UG/L	184	100%	300	0	9	9	161		128		174		86.7		43.7	
Lead	UG/L	0	0%	1.4624632	0	0	9	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
Magnesium	UG/L	12900	100%		0	9	9	8650		9020		12900		7310		10200	
Manganese	UG/L	69.4	100%		0	9	9	15.7		6.7		5		3		10.6	
Mercury	UG/L	0	0%	0.0007	0	0	9	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	UG/L	0	0%	100.16198	0	0	9	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
Potassium	UG/L	3710	100%		0	9	9	3490		3300		2950		2160		2260	
Selenium	UG/L	0	0%	4.6	0	0	9	4.7	U	4.7	U	4.7	U	4.7	U	4.7	U
Silver	UG/L	0	0%	0.1	0	0	9	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
Sodium	UG/L	29300	100%		0	9	9	8030		9350		29300		4780		6260	
Thallium	UG/L	0	0%	8	0	0	9	6.3	U	6.3	U	6.3	U	6.3	U	6.3	U
Vanadium	UG/L	0	0%	14	0	0	9	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
Zinc	UG/L	14.3	100%	159.63864	0	9	9	5.4		9.6		10		5		6.5	

TABLE I-1
BACKGROUND METALS DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		RI Phase 1 Step			
LOC_ID								SW12-64		SW12-65		SW12-66		67359			
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SW12-67			
SAMP_ID								12056		12057		12058		12047			
SAMP_DEPTH_TOP								0		0		0		0			
SAMP_DEPTH_BOT								N/A		N/A		N/A		0.2			
SAMP_DATE								11-Nov-97		11-Nov-97		11-Nov-97		9-Nov-97			
QC_CODE								SA		SA		SA		SURFACE WAT			
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER OF	NUMBER OF	NUMBER OF	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step			
PARAMETER	UNIT	MAXIMUM	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES										
Aluminum	UG/L	140	100%	100	1	9	9	23.1		21.2		97.3		36.4			
Antimony	UG/L	0	0%		0	0	9	3.5	U	3.5	U	3.5	U	3.5	U		
Arsenic	UG/L	0	0%	150	0	0	9	3.6	U	3.6	U	3.6	U	3.6	U		
Barium	UG/L	48.3	100%		0	9	9	43.4		48		30.7		29.7			
Beryllium	UG/L	0	0%	1100	0	0	9	0.1	U	0.1	U	0.1	U	0.1	U		
Cadmium	UG/L	0.88	22%	3.845011	0	2	9	0.3	U	0.88		0.43		0.3	U		
Calcium	UG/L	85500	100%		0	9	9	68800		67900		58100		55200			
Chromium	UG/L	0	0%	139.78605	0	0	9	1.1	U	1.1	U	1.1	U	1.1	U		
Cobalt	UG/L	0	0%	5	0	0	9	1.7	U	1.7	U	1.7	U	1.7	U		
Copper	UG/L	3	11%	17.362284	0	1	9	2.3	U	2.3	U	2.3	U	3			
Cyanide	UG/L	0	0%	5.2	0	0	9	5	U	5	U	5	U	5	U		
Iron	UG/L	184	100%	300	0	9	9	93.7		106		184		71.3			
Lead	UG/L	0	0%	1.4624632	0	0	9	1.8	U	1.8	U	1.8	U	1.8	U		
Magnesium	UG/L	12900	100%		0	9	9	10700		10400		8270		7640			
Manganese	UG/L	69.4	100%		0	9	9	69.4		21		32.9		2.2			
Mercury	UG/L	0	0%	0.0007	0	0	9	0.1	U	0.1	U	0.1	U	0.1	U		
Nickel	UG/L	0	0%	100.16198	0	0	9	2.1	U	2.1	U	2.1	U	2.1	U		
Potassium	UG/L	3710	100%		0	9	9	3240		3120		3030		3710			
Selenium	UG/L	0	0%	4.6	0	0	9	4.7	U	4.7	U	4.7	U	4.7	U		
Silver	UG/L	0	0%	0.1	0	0	9	2.1	U	2.1	U	2.1	U	2.1	U		
Sodium	UG/L	29300	100%		0	9	9	11700		12000		15000		6720			
Thallium	UG/L	0	0%	8	0	0	9	6.3	U	6.3	U	6.3	U	6.3	U		
Vanadium	UG/L	0	0%	14	0	0	9	1.6	U	1.6	U	1.6	U	1.6	U		
Zinc	UG/L	14.3	100%	159.63864	0	9	9	4.8		5		14.3		6.3			

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12A-1		SW12A-1		SW12A-2		SW12A-3		SW12-1		SW12-2	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								SW12A-20		SW12A-1		SW12A-2		SW12A-3		12039		12001	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								24-Jun-94		24-Jun-94		11-Jun-94		11-Jun-94		5-Nov-97		26-Oct-97	
QC_CODE								DU		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	ESI		ESI		ESI		ESI		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
VOLATILE ORGANICS																			
1,1,1-Trichloroethane	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
1,1,2-Trichloroethane	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
1,1-Dichloroethane	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
1,1-Dichloroethene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
1,2-Dibromo-3-chloropropan	UG/L	0	0%		0	0	48									1	U	1	U
1,2-Dibromoethane	UG/L	0	0%		0	0	48									1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	48									1	U	1	U
1,2-Dichloroethane	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
1,2-Dichloroethene (total)	UG/L	0	0%		0	0	4	10	U	10	U	10	U	10	U				
1,2-Dichloropropane	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	48									1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	48									1	U	1	U
Acetone	UG/L	10	6%		0	3	52	10	U	10	U	10	U	10	U	5	UJ	5	UJ
Benzene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Bromochloromethane	UG/L	0	0%		0	0	48									1	U	1	U
Bromodichloromethane	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Bromoform	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Carbon disulfide	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Chlorobenzene	UG/L	0	0%	5	0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Chlorodibromomethane	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Chloroethane	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	UJ	1	UJ
Chloroform	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0%		0	0	48									1	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Ethyl benzene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Methyl bromide	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Methyl butyl ketone	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	5	U	5	U
Methyl chloride	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Methyl ethyl ketone	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	5	UJ	5	U
Methyl isobutyl ketone	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	5	U	5	U
Methylene chloride	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	2	U	2	U
Styrene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Tetrachloroethene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12A-1		SW12A-1		SW12A-2		SW12A-3		SW12-1		SW12-2	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								SW12A-20		SW12A-1		SW12A-2		SW12A-3		12039		12001	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								24-Jun-94		24-Jun-94		11-Jun-94		11-Jun-94		5-Nov-97		26-Oct-97	
QC_CODE								DU		SA		SA		SA		SA		SA	
STUDY_ID								ESI		ESI		ESI		ESI		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
Toluene	UG/L	0.4	2%	6000	0	1	52	10	U	10	U	10	U	10	U	1	U	1	U
Total Xylenes	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0%		0	0	48									1	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Trichloroethene	UG/L	1	2%	40	0	1	52	10	U	10	U	10	U	10	U	1	U	1	U
Vinyl chloride	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
SEMI VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0%		0	0	4	10	U	10	U	10	U	10	U				
2,4,5-Trichlorophenol	UG/L	0	0%		0	0	52	25	U	25	U	25	U	26	U	2.5	U	2.6	U
2,4,6-Trichlorophenol	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
2,4-Dichlorophenol	UG/L	0	0%	1	0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
2,4-Dimethylphenol	UG/L	0	0%	1000	0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
2,4-Dinitrophenol	UG/L	0	0%	400	0	0	52	25	U	25	U	25	U	26	U	2.5	U	2.6	UJ
2,4-Dinitrotoluene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
2,6-Dinitrotoluene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
2-Chloronaphthalene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
2-Chlorophenol	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
2-Methylnaphthalene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
2-Methylphenol	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
2-Nitroaniline	UG/L	0	0%		0	0	52	25	U	25	U	25	U	26	U	2.5	U	2.6	U
2-Nitrophenol	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	UJ	1	UJ
3-Nitroaniline	UG/L	0	0%		0	0	52	25	U	25	U	25	U	26	U	2.5	UJ	2.6	UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0%		0	0	52	25	U	25	U	25	U	26	U	2.5	UJ	2.6	U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
4-Chloroaniline	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
4-Methylphenol	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
4-Nitroaniline	UG/L	0	0%		0	0	52	25	U	25	U	25	U	26	U	2.5	UJ	2.6	U
4-Nitrophenol	UG/L	0	0%		0	0	52	25	U	25	U	25	U	26	U	2.5	UJ	2.6	U
Acenaphthene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12
LOC_ID								SW12A-1		SW12A-1		SW12A-2		SW12A-3		SW12-1		SW12-2
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER
SAMP_ID								SW12A-20		SW12A-1		SW12A-2		SW12A-3		12039		12001
SAMP_DEPTH_TOP								0		0		0		0		0		0
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A
SAMP_DATE								24-Jun-94		24-Jun-94		11-Jun-94		11-Jun-94		5-Nov-97		26-Oct-97
QC_CODE								DU		SA		SA		SA		SA		SA
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	ESI		ESI		ESI		ESI		RI Phase 1 Step 1		RI Phase 1 Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES											
Acenaphthylene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Anthracene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Benzo(a)anthracene	UG/L	0.5	2%		0	1	52	0.5	J	10	U	10	U	10	U	1	U	1	U
Benzo(a)pyrene	UG/L	0.6	2%		0	1	52	0.6	J	10	U	10	U	10	U	1	U	1	U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	52	10	UJ	10	U	10	U	10	U	1	U	1	U
Benzo(ghi)perylene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Benzo(k)fluoranthene	UG/L	1	2%		0	1	52	1	J	10	U	10	U	10	U	1	U	1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Bis(2-Chloroethyl)ether	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%		0	0	48									1	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	12	8%	0.6	2	4	52	10	U	10	U	10	U	10	U	1	U	1	U
Butylbenzylphthalate	UG/L	0.2	19%		0	10	52	10	U	10	U	10	U	10	U	1	U	1	U
Carbazole	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Chrysene	UG/L	0.5	2%		0	1	52	0.5	J	10	U	10	U	10	U	1	UJ	1	U
Di-n-butylphthalate	UG/L	2	12%		0	6	52	0.9	J	1	J	2	J	10	U	1	U	1	U
Di-n-octylphthalate	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	UJ
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Dibenzofuran	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Diethyl phthalate	UG/L	0.46	21%		0	11	52	10	U	10	U	10	U	10	U	1	U	0.23	J
Dimethylphthalate	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Fluoranthene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Fluorene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Hexachlorobenzene	UG/L	0	0%	0.00003	0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Hexachlorobutadiene	UG/L	0	0%	0.01	0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Hexachlorocyclopentadiene	UG/L	0	0%	0.45	0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Hexachloroethane	UG/L	0	0%	0.6	0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Isophorone	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Naphthalene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	UJ	1	U
Nitrobenzene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Pentachlorophenol	UG/L	2	2%	12.6	0	1	52	25	U	2	J	25	U	26	U	2.5	U	2.6	U
Phenanthrene	UG/L	0	0%		0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Phenol	UG/L	0	0%	5	0	0	52	10	U	10	U	10	U	10	U	1	U	1	U
Pyrene	UG/L	1	2%		0	1	52	10	U	1	J	10	U	10	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12A-1		SW12A-1		SW12A-2		SW12A-3		SW12-1		SW12-2	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								SW12A-20		SW12A-1		SW12A-2		SW12A-3		12039		12001	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								24-Jun-94		24-Jun-94		11-Jun-94		11-Jun-94		5-Nov-97		26-Oct-97	
QC_CODE								DU		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	ESI		ESI		ESI		ESI		RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
PESTICIDES/PCBS																			
4,4'-DDD	UG/L	0	0%	0.00008	0	0	52	0.1	U	0.1	U	0.11	U	0.1	U	0.01	U	0.011	U
4,4'-DDE	UG/L	0.0056	2%	0.000007	1	1	52	0.1	U	0.1	U	0.11	U	0.1	U	0.01	U	0.011	U
4,4'-DDT	UG/L	0.062	2%	0.00001	1	1	52	0.1	U	0.1	U	0.11	U	0.1	U	0.01	U	0.011	U
Aldrin	UG/L	0.0041	2%	0.001	1	1	52	0.051	U	0.052	U	0.054	U	0.052	U	0.0051	U	0.0054	U
Alpha-BHC	UG/L	0.09	19%		0	10	52	0.051	U	0.052	U	0.054	U	0.052	U	0.0051	U	0.0054	U
Alpha-Chlordane	UG/L	0.0036	2%		0	1	52	0.051	U	0.052	U	0.054	U	0.052	U	0.0051	U	0.0054	U
Aroclor-1016	UG/L	0	0%	0.000001	0	0	52	1	U	1	U	1.1	U	1	U	0.1	U	0.11	U
Aroclor-1221	UG/L	0	0%	0.000001	0	0	52	2	U	2.1	U	2.2	U	2.1	U	0.2	U	0.22	U
Aroclor-1232	UG/L	0	0%	0.000001	0	0	52	1	U	1	U	1.1	U	1	U	0.1	U	0.11	U
Aroclor-1242	UG/L	0.44	4%		0	2	52	1	U	1	U	1.1	U	1	U	0.1	U	0.11	U
Aroclor-1248	UG/L	0	0%	0.000001	0	0	52	1	U	1	U	1.1	U	1	U	0.1	U	0.11	U
Aroclor-1254	UG/L	0	0%	0.000001	0	0	52	1	U	1	U	1.1	U	1	U	0.1	U	0.11	U
Aroclor-1260	UG/L	0	0%	0.000001	0	0	52	1	U	1	U	1.1	U	1	U	0.1	U	0.11	U
Beta-BHC	UG/L	0.017	10%		0	5	52	0.051	U	0.052	U	0.054	U	0.052	U	0.0051	U	0.0054	U
Delta-BHC	UG/L	0.0046	6%		0	3	52	0.051	U	0.052	U	0.054	U	0.052	U	0.0051	U	0.0054	U
Dieldrin	UG/L	0	0%	0.0000006	0	0	52	0.1	U	0.1	U	0.11	U	0.1	U	0.01	U	0.011	U
Endosulfan I	UG/L	0	0%	0.009	0	0	52	0.051	U	0.052	U	0.054	U	0.052	U	0.0051	U	0.0054	U
Endosulfan II	UG/L	0	0%	0.009	0	0	52	0.1	U	0.1	U	0.11	U	0.1	U	0.01	U	0.011	U
Endosulfan sulfate	UG/L	0	0%		0	0	52	0.1	U	0.1	U	0.11	U	0.1	U	0.01	U	0.011	U
Endrin	UG/L	0	0%	0.002	0	0	52	0.1	U	0.1	U	0.11	U	0.1	U	0.01	U	0.011	U
Endrin aldehyde	UG/L	0.012	4%		0	2	52	0.1	U	0.1	U	0.11	U	0.1	U	0.01	U	0.011	U
Endrin ketone	UG/L	0.015	2%		0	1	52	0.1	U	0.1	U	0.11	U	0.1	U	0.01	U	0.011	U
Gamma-BHC/Lindane	UG/L	0.092	10%		0	5	52	0.051	U	0.052	U	0.054	U	0.052	U	0.0051	U	0.0054	U
Gamma-Chlordane	UG/L	0	0%		0	0	52	0.051	U	0.052	U	0.054	U	0.052	U	0.0051	U	0.0054	U
Heptachlor	UG/L	0.0063	6%	0.0002	3	3	52	0.051	U	0.052	U	0.054	U	0.052	U	0.0051	U	0.0054	U
Heptachlor epoxide	UG/L	0.0033	4%	0.0003	2	2	52	0.051	U	0.052	U	0.054	U	0.052	U	0.0051	U	0.0054	U
Hexachlorobenzene	UG/L	0.02	6%	0.00003	3	3	48									0.01	U	0.011	U
Methoxychlor	UG/L	0	0%	0.03	0	0	52	0.51	U	0.52	U	0.54	U	0.52	U	0.051	U	0.054	U
Toxaphene	UG/L	0	0%	0.000006	0	0	52	5.1	U	5.2	U	5.4	U	5.2	U	0.51	U	0.54	U
METALS																			
Aluminum	UG/L	3430	83%	100	19	43	52	153	J	175	J	86.7	J	879		21.9	U	40.1	
Antimony	UG/L	0	0%		0	0	52	1.3	U	1.3	U	1.3	U	1.3	U	2.9	U	2.9	U
Arsenic	UG/L	3.8	10%	150	0	5	52	2	U	2	U	2	U	2	U	2.5	U	2.5	U
Barium	UG/L	115	100%		0	52	52	27.9	J	28.6	J	30.9	J	41.2	J	28.3		55.6	
Beryllium	UG/L	0.18	8%	1100	0	4	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12A-1		SW12A-1		SW12A-2		SW12A-3		SW12-1		SW12-2	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								SW12A-20		SW12A-1		SW12A-2		SW12A-3		12039		12001	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								24-Jun-94		24-Jun-94		11-Jun-94		11-Jun-94		5-Nov-97		26-Oct-97	
QC_CODE								DU		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	ESI		ESI		ESI		ESI		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Cadmium	UG/L	2.1	13%	3.845011	0	7	52	0.2	U	0.2	U	0.2	U	0.2	U	0.4	U	0.4	U
Calcium	UG/L	130000	98%		0	51	52	84600		85700		77400		83700		69900		91100	
Chromium	UG/L	3.3	21%	139.78605	0	11	52	0.85	J	0.89	J	0.56	J	1.5	J	0.9	U	0.9	U
Cobalt	UG/L	6	13%	5	1	7	52	0.53	J	0.5	U	0.81	J	0.73	J	1.3	U	1.3	U
Copper	UG/L	27.6	56%	17.362284	2	29	52	1.2	J	1.2	J	1.6	J	2	J	1.7		1.1	U
Cyanide	UG/L	0	0%	5.2	0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Iron	UG/L	6830	92%	300	12	48	52	221		250		126		966		20.4	U	181	
Lead	UG/L	35.4	8%	1.4624632	4	4	52	0.89	U	0.9	U	0.9	U	0.89	U	1.7	U	1.7	U
Magnesium	UG/L	18600	100%		0	52	52	14700		15000		17600		18100		10200		14100	
Manganese	UG/L	1320	96%		0	50	52	18.2		20.1		492		104		0.6		48.9	
Mercury	UG/L	0.11	10%	0.0007	5	5	52	0.03	J	0.11	J	0.08	J	0.03	U	0.1	U	1	U
Nickel	UG/L	19.7	52%	100.16198	0	27	52	0.69	U	0.7	U	0.7	U	1.3	J	0.9	U	1.1	
Potassium	UG/L	11800	98%		0	51	52	1550	J	1610	J	3360	J	1650	J	3220		2100	
Selenium	UG/L	0	0%	4.6	0	0	52	2.7	U	2.7	U	2.7	U	2.7	U	4	U	4	U
Silver	UG/L	1.6	12%	0.1	6	6	52	0.07	J	0.5	U	0.58	J	0.5	U	1.1	U	1.1	U
Sodium	UG/L	114000	98%		0	51	52	6830		7030		70700		6940		12800		47500	
Thallium	UG/L	6.5	4%	8	0	2	52	1.9	U	1.9	U	2	J	1.9	U	6	U	6	U
Vanadium	UG/L	7.2	13%	14	0	7	52	0.89	J	0.98	J	0.86	J	1.6	J	1.2	U	1.2	U
Zinc	UG/L	105	100%	159.63864	0	52	52	3.4	J	5.4	J	2.2	J	12.9	J	5		3.6	
ADDITIONAL ANALYSES																			
Ammonia-Nitrogen	MG/L	0.22	100%		0	60	60									0.02		0.02	
Nitrate/Nitrite	%W/W	1.38	100%		0	47	47									0.01		0.01	
Nitrate/Nitrite	MG/KG	0.68	100%		0	11	11												
Total Dissolved Solids	MG/L	622	100%		0	58	58									339		411	
TOC--Soil 9060	MG/KG	6.3	100%		0	11	11												
Total Suspended Solids	MG/L	710	100%		0	58	58									1.4		4.3	
Phosphate, Total as P	MG/L	0.91	100%		0	58	58									0.01		0.03	
Alkalinity	MG/L	288	100%		0	58	58									176		276	
Total Hardness as CaCO3	MG/L	395	100%		0	58	58									212		280	
TOC--Water 415.1	MG/L	16.4	100%		0	17	17												
pH		8.4	100%		0	57	57									7.64		6.93	

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-3		SW12-4		SW12-5		SW12-6		SW12-7		SW12-8	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12072		12038		12036		12022		12021		12007	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								13-Dec-97		5-Nov-97		5-Nov-97		3-Nov-97		3-Nov-97		27-Oct-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
VOLATILE ORGANICS																			
1,1,1-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropan	UG/L	0	0%		0	0	48	1	U	1	U	1	UJ	1	UJ	1	UJ	1	U
1,2-Dibromoethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (total)	UG/L	0	0%		0	0	4												
1,2-Dichloropropane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Acetone	UG/L	10	6%		0	3	52	5	U	5	UJ	5	U	5	U	5	U	5	UJ
Benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	UG/L	0	0%		0	0	52	1	U	1	U	1	UJ	1	UJ	1	UJ	1	U
Carbon disulfide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorodibromomethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	UG/L	0	0%		0	0	52	1	U	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
Chloroform	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Ethyl benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl bromide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl butyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methyl chloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl ethyl ketone	UG/L	0	0%		0	0	52	5	U	5	UJ	5	UJ	5	UJ	5	UJ	5	U
Methyl isobutyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methylene chloride	UG/L	0	0%		0	0	52	2	U	2	U	2	U	2	U	2	U	2	U
Styrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-3		SW12-4		SW12-5		SW12-6		SW12-7		SW12-8	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12072		12038		12036		12022		12021		12007	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								13-Dec-97		5-Nov-97		5-Nov-97		3-Nov-97		3-Nov-97		27-Oct-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Toluene	UG/L	0.4	2%	6000	0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Total Xylenes	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	UG/L	1	2%	40	0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl chloride	UG/L	0	0%		0	0	52	1	U	1	U	1	UJ	1	U	1	U	1	U
SEMI VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0%		0	0	4												
2,4,5-Trichlorophenol	UG/L	0	0%		0	0	52	2.6	U	2.5	U	2.5	U	2.5	U	2.6	U	2.6	U
2,4,6-Trichlorophenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dichlorophenol	UG/L	0	0%	1	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dimethylphenol	UG/L	0	0%	1000	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dinitrophenol	UG/L	0	0%	400	0	0	52	2.6	UJ	2.5	U	2.5	U	2.5	UJ	2.6	UJ	2.6	UJ
2,4-Dinitrotoluene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,6-Dinitrotoluene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Chloronaphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Chlorophenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Methylnaphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Nitroaniline	UG/L	0	0%		0	0	52	2.6	U	2.5	U	2.5	U	2.5	U	2.6	U	2.6	U
2-Nitrophenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0%		0	0	52	1	U	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
3-Nitroaniline	UG/L	0	0%		0	0	52	2.6	UJ	2.5	U	2.5	U	2.5	UJ	2.6	UJ	2.6	UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0%		0	0	52	2.6	U	2.5	U	2.5	U	2.5	U	2.6	U	2.6	U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Chloroaniline	UG/L	0	0%		0	0	52	1	UJ	1	U	1	U	1	UJ	1	UJ	1	U
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Nitroaniline	UG/L	0	0%		0	0	52	2.6	UJ	2.5	U	2.5	U	2.5	U	2.6	U	2.6	U
4-Nitrophenol	UG/L	0	0%		0	0	52	2.6	U	2.5	U	2.5	U	2.5	U	2.6	U	2.6	U
Acenaphthene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-3		SW12-4		SW12-5		SW12-6		SW12-7		SW12-8	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12072		12038		12036		12022		12021		12007	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								13-Dec-97		5-Nov-97		5-Nov-97		3-Nov-97		3-Nov-97		27-Oct-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU																	
Acenaphthylene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Anthracene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(a)anthracene	UG/L	0.5	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(a)pyrene	UG/L	0.6	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(ghi)perylene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(k)fluoranthene	UG/L	1	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Chloroethyl)ether	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	12	8%	0.6	2	4	52	1	U	1	U	1	U	1	U	1	U	1	U
Butylbenzylphthalate	UG/L	0.2	19%		0	10	52	0.13	J	1	U	0.16	J	1	U	1	U	1	U
Carbazole	UG/L	0	0%		0	0	52	1	U	1	UJ	1	U	1	UJ	1	UJ	1	UJ
Chrysene	UG/L	0.5	2%		0	1	52	1	U	1	U	1	UJ	1	U	1	U	1	U
Di-n-butylphthalate	UG/L	2	12%		0	6	52	0.067	J	1	U	1	U	1	U	1	U	1	U
Di-n-octylphthalate	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	UJ
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Dibenzofuran	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Diethyl phthalate	UG/L	0.46	21%		0	11	52	1	U	1	U	1	U	1	U	0.056	J	1	U
Dimethylphthalate	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Fluoranthene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Fluorene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobenzene	UG/L	0	0%	0.00003	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobutadiene	UG/L	0	0%	0.01	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorocyclopentadiene	UG/L	0	0%	0.45	0	0	52	1	UJ	1	U	1	U	1	U	1	U	1	U
Hexachloroethane	UG/L	0	0%	0.6	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Isophorone	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Nitrobenzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Pentachlorophenol	UG/L	2	2%	12.6	0	1	52	2.6	UJ	2.5	U	2.5	U	2.5	U	2.6	U	2.6	U
Phenanthrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Phenol	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Pyrene	UG/L	1	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-3		SW12-4		SW12-5		SW12-6		SW12-7		SW12-8	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12072		12038		12036		12022		12021		12007	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								13-Dec-97		5-Nov-97		5-Nov-97		3-Nov-97		3-Nov-97		27-Oct-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
PESTICIDES/PCBS																			
4,4'-DDD	UG/L	0	0%	0.00008	0	0	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
4,4'-DDE	UG/L	0.0056	2%	0.000007	1	1	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
4,4'-DDT	UG/L	0.062	2%	0.00001	1	1	52	0.01	UJ	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
Aldrin	UG/L	0.0041	2%	0.001	1	1	52	0.0052	UJ	0.005	U	0.005	U	0.005	U	0.0052	U	0.0055	U
Alpha-BHC	UG/L	0.09	19%		0	10	52	0.0052	U	0.005	U	0.005	U	0.005	U	0.0082		0.0055	U
Alpha-Chlordane	UG/L	0.0036	2%		0	1	52	0.0052	U	0.005	U	0.005	U	0.005	U	0.0052	U	0.0055	U
Aroclor-1016	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U
Aroclor-1221	UG/L	0	0%	0.000001	0	0	52	0.21	U	0.2	U	0.2	U	0.2	U	0.21	U	0.22	U
Aroclor-1232	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U
Aroclor-1242	UG/L	0.44	4%		0	2	52	0.1	U	0.1	U	0.1	U	0.33		0.1	U	0.11	U
Aroclor-1248	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U
Aroclor-1254	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U
Aroclor-1260	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U
Beta-BHC	UG/L	0.017	10%		0	5	52	0.0052	U	0.005	U	0.005	U	0.003	J	0.0052	U	0.0036	J
Delta-BHC	UG/L	0.0046	6%		0	3	52	0.0052	U	0.005	U	0.005	U	0.005	U	0.0052	U	0.0055	U
Dieldrin	UG/L	0	0%	0.0000006	0	0	52	0.01	UJ	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
Endosulfan I	UG/L	0	0%	0.009	0	0	52	0.0052	U	0.005	U	0.005	U	0.005	U	0.0052	U	0.0055	U
Endosulfan II	UG/L	0	0%	0.009	0	0	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
Endosulfan sulfate	UG/L	0	0%		0	0	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
Endrin	UG/L	0	0%	0.002	0	0	52	0.01	UJ	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
Endrin aldehyde	UG/L	0.012	4%		0	2	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
Endrin ketone	UG/L	0.015	2%		0	1	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
Gamma-BHC/Lindane	UG/L	0.092	10%		0	5	52	0.0052	UJ	0.005	U	0.005	U	0.005	U	0.0028	J	0.0055	U
Gamma-Chlordane	UG/L	0	0%		0	0	52	0.0052	U	0.005	U	0.005	U	0.005	U	0.0052	U	0.0055	U
Heptachlor	UG/L	0.0063	6%	0.0002	3	3	52	0.0052	UJ	0.005	U	0.005	U	0.005	U	0.0063		0.0055	U
Heptachlor epoxide	UG/L	0.0033	4%	0.0003	2	2	52	0.0052	U	0.005	U	0.005	U	0.0033	J	0.0052	U	0.0055	U
Hexachlorobenzene	UG/L	0.02	6%	0.00003	3	3	48	0.01	UJ	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
Methoxychlor	UG/L	0	0%	0.03	0	0	52	0.052	U	0.05	U	0.05	U	0.05	U	0.052	U	0.055	U
Toxaphene	UG/L	0	0%	0.000006	0	0	52	0.52	U	0.5	U	0.5	U	0.5	U	0.52	U	0.55	U
METALS																			
Aluminum	UG/L	3430	83%	100	19	43	52	12.3	U	45.5		417		21.9	U	172	J	239	
Antimony	UG/L	0	0%		0	0	52	3.5	U	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U
Arsenic	UG/L	3.8	10%	150	0	5	52	3.6	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Barium	UG/L	115	100%		0	52	52	23.8	J	54.7		75.4		17		15.7		51.3	
Beryllium	UG/L	0.18	8%	1100	0	4	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-3		SW12-4		SW12-5		SW12-6		SW12-7		SW12-8	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12072		12038		12036		12022		12021		12007	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								13-Dec-97		5-Nov-97		5-Nov-97		3-Nov-97		3-Nov-97		27-Oct-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU																	
Cadmium	UG/L	2.1	13%	3.845011	0	7	52	0.3	U	0.4	U	0.4	U	0.4	U	0.4	U	0.4	U
Calcium	UG/L	130000	98%		0	51	52	71100		98100		113000		52200		36000		130000	
Chromium	UG/L	3.3	21%	139.78605	0	11	52	1.1	U	0.9	U	1.3		0.9	U	0.9	U	0.9	U
Cobalt	UG/L	6	13%	5	1	7	52	1.7	U	1.3	U	1.5		1.3	U	1.3	U	1.3	U
Copper	UG/L	27.6	56%	17.362284	2	29	52	2.3	U	3		2.8		1.1	U	1.1	U	1.1	U
Cyanide	UG/L	0	0%	5.2	0	0	52	5	UJ	5	U	5	U	5	U	5	U	5	U
Iron	UG/L	6830	92%	300	12	48	52	42.9	J	160		[redacted]	J	20.4	U	221		1050	
Lead	UG/L	35.4	8%	1.4624632	4	4	52	1.8	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
Magnesium	UG/L	18600	100%		0	52	52	11800		13200		13300		5380		5740		12700	
Manganese	UG/L	1320	96%		0	50	52	3.7	J	277		504		0.4	U	20.5		144	
Mercury	UG/L	0.11	10%	0.0007	5	5	52	0.1	U	0.1	U	0.1	U	1	U	1	U	1	U
Nickel	UG/L	19.7	52%	100.16198	0	27	52	2.1	U	0.9	U	1.8		0.93		1.6		2.7	
Potassium	UG/L	11800	98%		0	51	52	2010	J	3910		1950		3420		3340		5550	
Selenium	UG/L	0	0%	4.6	0	0	52	4.7	U	4	U	4	U	4	U	4	U	4	U
Silver	UG/L	1.6	12%	0.1	6	6	52	2.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Sodium	UG/L	114000	98%		0	51	52	2780	J	17300		22900		12200		9370		47400	
Thallium	UG/L	6.5	4%	8	0	2	52	6.3	U	6	U	6	U	6	U	6	U	6	U
Vanadium	UG/L	7.2	13%	14	0	7	52	1.6	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
Zinc	UG/L	105	100%	159.63864	0	52	52	19.5	J	4.9		18.8		49.4		16.1		38.5	
ADDITIONAL ANALYSES																			
Ammonia-Nitrogen	MG/L	0.22	100%		0	60	60	0.04		0.02		0.03		0.02		0.02		0.11	
Nitrate/Nitrite	%W/W	1.38	100%		0	47	47			0.01		0.01		0.21		1.1		0.04	
Nitrate/Nitrite	MG/KG	0.68	100%		0	11	11	0.42											
Total Dissolved Solids	MG/L	622	100%		0	58	58	230		386		403		179		170		622	
TOC--Soil 9060	MG/KG	6.3	100%		0	11	11	4											
Total Suspended Solids	MG/L	710	100%		0	58	58	2.1		7.1		8.3		3.7		4.8		55	
Phosphate, Total as P	MG/L	0.91	100%		0	58	58	0.02		0.03		0.05		0.03		0.04		0.12	
Alkalinity	MG/L	288	100%		0	58	58	170		200		276		132		104		108	
Total Hardness as CaCO3	MG/L	395	100%		0	58	58	208		296		316		156		130		395	
TOC--Water 415.1	MG/L	16.4	100%		0	17	17							4.46		4.18		16.4	
pH		8.4	100%		0	57	57	7.48		7.63		7.31		8.26		8.16		7.75	

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-9		SW12-10		SW12-11		SW12-12		SW12-13		SW12-14	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12037		12025		12073		12042		12041		12035	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								5-Nov-97		3-Nov-97		13-Dec-97		6-Nov-97		6-Nov-97		4-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
VOLATILE ORGANICS																			
1,1,1-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropan	UG/L	0	0%		0	0	48	1	UJ	1	UJ	1	U	1	U	1	U	1	UJ
1,2-Dibromoethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (total)	UG/L	0	0%		0	0	4												
1,2-Dichloropropane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Acetone	UG/L	10	6%		0	3	52	5	UJ	5	U	5	U	5	UJ	5	UJ	5	U
Benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	U	1	U	1	U	1	UJ
Carbon disulfide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorodibromomethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	U	1	UJ	1	UJ	1	UJ
Chloroform	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Ethyl benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl bromide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl butyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methyl chloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl ethyl ketone	UG/L	0	0%		0	0	52	5	UJ	5	UJ	5	U	5	UJ	5	UJ	5	UJ
Methyl isobutyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methylene chloride	UG/L	0	0%		0	0	52	2	U	2	U	2	U	2	U	2	U	2	U
Styrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-9		SW12-10		SW12-11		SW12-12		SW12-13		SW12-14	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12037		12025		12073		12042		12041		12035	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								5-Nov-97		3-Nov-97		13-Dec-97		6-Nov-97		6-Nov-97		4-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU																	
Toluene	UG/L	0.4	2%	6000	0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Total Xylenes	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	UG/L	1	2%	40	0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl chloride	UG/L	0	0%		0	0	52	1	UJ	1	U	1	U	1	U	1	U	1	UJ
SEMI VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0%		0	0	4												
2,4,5-Trichlorophenol	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.8	U	2.5	U	2.5	U	2.5	U
2,4,6-Trichlorophenol	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2,4-Dichlorophenol	UG/L	0	0%	1	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2,4-Dimethylphenol	UG/L	0	0%	1000	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2,4-Dinitrophenol	UG/L	0	0%	400	0	0	52	2.5	U	2.5	UJ	2.8	UJ	2.5	U	2.5	U	2.5	U
2,4-Dinitrotoluene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2,6-Dinitrotoluene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2-Chloronaphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2-Chlorophenol	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2-Methylnaphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2-Methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2-Nitroaniline	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.8	U	2.5	U	2.5	U	2.5	U
2-Nitrophenol	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1.1	U	1	UJ	1	UJ	1	UJ
3-Nitroaniline	UG/L	0	0%		0	0	52	2.5	U	2.5	UJ	2.8	UJ	2.5	UJ	2.5	UJ	2.5	U
4,6-Dinitro-2-methylphenol	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.8	U	2.5	UJ	2.5	UJ	2.5	U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
4-Chloroaniline	UG/L	0	0%		0	0	52	1	U	1	UJ	1.1	UJ	1	U	1	U	1	U
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
4-Methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
4-Nitroaniline	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.8	UJ	2.5	UJ	2.5	UJ	2.5	U
4-Nitrophenol	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.8	U	2.5	UJ	2.5	UJ	2.5	U
Acenaphthene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-9		SW12-10		SW12-11		SW12-12		SW12-13		SW12-14	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12037		12025		12073		12042		12041		12035	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								5-Nov-97		3-Nov-97		13-Dec-97		6-Nov-97		6-Nov-97		4-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
Acenaphthylene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Anthracene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Benzo(a)anthracene	UG/L	0.5	2%		0	1	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Benzo(a)pyrene	UG/L	0.6	2%		0	1	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Benzo(ghi)perylene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Benzo(k)fluoranthene	UG/L	1	2%		0	1	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Bis(2-Chloroethyl)ether	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%		0	0	48	1	U	1	U	1.1	U	1	U	1	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	12	8%	0.6	2	4	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Butylbenzylphthalate	UG/L	0.2	19%		0	10	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Carbazole	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1.1	U	1	UJ	1	UJ	1	UJ
Chrysene	UG/L	0.5	2%		0	1	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Di-n-butylphthalate	UG/L	2	12%		0	6	52	1	U	1	U	0.12	J	1	U	1	U	1	U
Di-n-octylphthalate	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Dibenzofuran	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Diethyl phthalate	UG/L	0.46	21%		0	11	52	0.1	J	1	U	1.1	U	1	U	1	U	1	U
Dimethylphthalate	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Fluoranthene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Fluorene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Hexachlorobenzene	UG/L	0	0%	0.00003	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Hexachlorobutadiene	UG/L	0	0%	0.01	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Hexachlorocyclopentadiene	UG/L	0	0%	0.45	0	0	52	1	U	1	U	1.1	UJ	1	U	1	U	1	U
Hexachloroethane	UG/L	0	0%	0.6	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Isophorone	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Naphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	UJ	1	UJ	1	U
Nitrobenzene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Pentachlorophenol	UG/L	2	2%	12.6	0	1	52	2.5	U	2.5	U	2.8	UJ	2.5	U	2.5	U	2.5	U
Phenanthrene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Phenol	UG/L	0	0%	5	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Pyrene	UG/L	1	2%		0	1	52	1	U	1	U	1.1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-9		SW12-10		SW12-11		SW12-12		SW12-13		SW12-14	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12037		12025		12073		12042		12041		12035	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								5-Nov-97		3-Nov-97		13-Dec-97		6-Nov-97		6-Nov-97		4-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU																	
PESTICIDES/PCBS																			
4,4'-DDD	UG/L	0	0%	0.00008	0	0	52	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U	0.01	U
4,4'-DDE	UG/L	0.0056	2%	0.000007	1	1	52	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U	0.01	U
4,4'-DDT	UG/L	0.062	2%	0.00001	1	1	52	0.01	U	0.011	U	0.01	UJ	0.01	U	0.01	U	0.01	U
Aldrin	UG/L	0.0041	2%	0.001	1	1	52	0.005	U	0.0057	U	0.0052	UJ	0.005	U	0.005	U	0.005	U
Alpha-BHC	UG/L	0.09	19%		0	10	52	0.003	J	0.014		0.0052	U	0.005	U	0.005	U	0.005	U
Alpha-Chlordane	UG/L	0.0036	2%		0	1	52	0.005	U	0.0057	U	0.0052	U	0.005	U	0.005	U	0.005	U
Aroclor-1016	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1221	UG/L	0	0%	0.000001	0	0	52	0.2	U	0.23	U	0.21	U	0.2	U	0.2	U	0.2	U
Aroclor-1232	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1242	UG/L	0.44	4%		0	2	52	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1248	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1254	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1260	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
Beta-BHC	UG/L	0.017	10%		0	5	52	0.005	U	0.0057	U	0.0052	U	0.005	U	0.005	U	0.005	U
Delta-BHC	UG/L	0.0046	6%		0	3	52	0.005	U	0.0057	U	0.0052	U	0.005	U	0.005	U	0.005	U
Dieldrin	UG/L	0	0%	0.0000006	0	0	52	0.01	U	0.011	U	0.01	UJ	0.01	U	0.01	U	0.01	U
Endosulfan I	UG/L	0	0%	0.009	0	0	52	0.005	U	0.0057	U	0.0052	U	0.005	U	0.005	U	0.005	U
Endosulfan II	UG/L	0	0%	0.009	0	0	52	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U	0.01	U
Endosulfan sulfate	UG/L	0	0%		0	0	52	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U	0.01	U
Endrin	UG/L	0	0%	0.002	0	0	52	0.01	U	0.011	U	0.01	UJ	0.01	U	0.01	U	0.01	U
Endrin aldehyde	UG/L	0.012	4%		0	2	52	0.0073	J	0.011	U	0.01	U	0.01	U	0.01	U	0.01	U
Endrin ketone	UG/L	0.015	2%		0	1	52	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U	0.01	U
Gamma-BHC/Lindane	UG/L	0.092	10%		0	5	52	0.005	U	0.0057	U	0.0052	UJ	0.005	U	0.005	U	0.005	U
Gamma-Chlordane	UG/L	0	0%		0	0	52	0.005	U	0.0057	U	0.0052	U	0.005	U	0.005	U	0.005	U
Heptachlor	UG/L	0.0063	6%	0.0002	3	3	52	0.005	U	0.0039	J	0.0052	UJ	0.005	U	0.005	U	0.005	U
Heptachlor epoxide	UG/L	0.0033	4%	0.0003	2	2	52	0.005	U	0.0057	U	0.0052	U	0.005	U	0.005	U	0.005	U
Hexachlorobenzene	UG/L	0.02	6%	0.00003	3	3	48	0.01	U	0.02		0.01	UJ	0.01	U	0.01	U	0.01	U
Methoxychlor	UG/L	0	0%	0.03	0	0	52	0.05	U	0.057	U	0.052	U	0.05	U	0.05	U	0.05	U
Toxaphene	UG/L	0	0%	0.000006	0	0	52	0.5	U	0.57	U	0.52	U	0.5	U	0.5	U	0.5	U
METALS																			
Aluminum	UG/L	3430	83%	100	19	43	52	72.4		58.9		12.3	U	29.4		129		209	
Antimony	UG/L	0	0%		0	0	52	2.9	U	2.9	U	3.5	U	2.9	U	2.9	U	2.9	U
Arsenic	UG/L	3.8	10%	150	0	5	52	2.5	U	2.5	U	3.6	U	2.5	U	2.5	U	2.5	U
Barium	UG/L	115	100%		0	52	52	41.1		29.9		24.4	J	23		28.4		23.1	
Beryllium	UG/L	0.18	8%	1100	0	4	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-9		SW12-10		SW12-11		SW12-12		SW12-13		SW12-14	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12037		12025		12073		12042		12041		12035	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								5-Nov-97		3-Nov-97		13-Dec-97		6-Nov-97		6-Nov-97		4-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Cadmium	UG/L	2.1	13%	3.845011	0	7	52	0.4	U	0.4	U	0.3	U	0.4	U	0.4	U	0.4	U
Calcium	UG/L	130000	98%		0	51	52	83400		58000		79400		77400		71500		56200	
Chromium	UG/L	3.3	21%	139.78605	0	11	52	0.9	U	0.9	U	1.1	U	0.9	U	0.9	U	1.2	
Cobalt	UG/L	6	13%	5	1	7	52	1.3	U	1.3	U	1.7	U	1.3	U	1.3	U	1.3	U
Copper	UG/L	27.6	56%	17.362284	2	29	52	3.6		1.1	U	2.3	U	3.6		3.4		2.4	
Cyanide	UG/L	0	0%	5.2	0	0	52	5	U	5	U	5	UJ	5	U	5	U	5	U
Iron	UG/L	6830	92%	300	12	48	52	122		108		25.6	U	59.5		192		**353**	
Lead	UG/L	35.4	8%	1.4624632	4	4	52	1.7	U	1.7	U	1.8	U	1.7	U	1.7	U	1.7	U
Magnesium	UG/L	18600	100%		0	52	52	10600		8030		7880		10600		9090		8960	
Manganese	UG/L	1320	96%		0	50	52	6.3		13		7.1	J	5		41.1		29.7	
Mercury	UG/L	0.11	10%	0.0007	5	5	52	0.1	U	1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	UG/L	19.7	52%	100.16198	0	27	52	2		1.2		2.1	U	0.9	U	1.3		1.8	
Potassium	UG/L	11800	98%		0	51	52	5900		7500		2800	J	2120		3590		2310	
Selenium	UG/L	0	0%	4.6	0	0	52	4	U	4	U	4.7	U	4	U	4	U	4	U
Silver	UG/L	1.6	12%	0.1	6	6	52	1.1	U	1.1	U	2.1	U	1.1	U	**1.2**		**1.3**	
Sodium	UG/L	114000	98%		0	51	52	24400		14600		25700		12500		15800		13000	
Thallium	UG/L	6.5	4%	8	0	2	52	6	U	6	U	6.3	U	6	U	6	U	6	U
Vanadium	UG/L	7.2	13%	14	0	7	52	1.2	U	1.2	U	1.6	U	1.2	U	1.2	U	1.2	U
Zinc	UG/L	105	100%	159.63864	0	52	52	26.5		46.9		51.6		12.5		9.6		28.8	
ADDITIONAL ANALYSES																			
Ammonia-Nitrogen	MG/L	0.22	100%		0	60	60	0.03		0.04		0.04		0.02		0.04		0.02	
Nitrate/Nitrite	%W/W	1.38	100%		0	47	47	0.02		0.22				0.01		0.01		0.2	
Nitrate/Nitrite	MG/KG	0.68	100%		0	11	11					0.01							
Total Dissolved Solids	MG/L	622	100%		0	58	58	366		255		279		299		294		215	
TOC--Soil 9060	MG/KG	6.3	100%		0	11	11					6.3							
Total Suspended Solids	MG/L	710	100%		0	58	58	2.7		2		1.7		3.3		4.2		4.6	
Phosphate, Total as P	MG/L	0.91	100%		0	58	58	0.03		0.06		0.01		0.02		0.07		0.02	
Alkalinity	MG/L	288	100%		0	58	58	172		138		180		192		168		133	
Total Hardness as CaCO3	MG/L	395	100%		0	58	58	240		172		208		224		218		176	
TOC--Water 415.1	MG/L	16.4	100%		0	17	17			7.06									
pH		8.4	100%		0	57	57	7.67		7.91		7.36		8.04		7.56		6.5	

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-15		SW12-16		SW12-17		SW12-18		SW12-19		SW12-20	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12034		12028		12032		12052		12040		12045	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								4-Nov-97		4-Nov-97		4-Nov-97		10-Nov-97		6-Nov-97		6-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
VOLATILE ORGANICS																			
1,1,1-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropan	UG/L	0	0%		0	0	48	1	UJ	1	UJ	1	UJ	1	U	1	U	1	U
1,2-Dibromoethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (total)	UG/L	0	0%		0	0	4												
1,2-Dichloropropane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Acetone	UG/L	10	6%		0	3	52	5	U	5	U	10		5	U	5	UJ	5	U
Benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	UJ	1	U	1	U	1	U
Carbon disulfide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorodibromomethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	UJ	1	U	1	UJ	1	U
Chloroform	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Ethyl benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl bromide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl butyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methyl chloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl ethyl ketone	UG/L	0	0%		0	0	52	5	UJ	5	UJ	5	UJ	5	U	5	UJ	5	U
Methyl isobutyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methylene chloride	UG/L	0	0%		0	0	52	2	U	2	U	2	U	2	U	2	U	2	U
Styrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-15		SW12-16		SW12-17		SW12-18		SW12-19		SW12-20	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12034		12028		12032		12052		12040		12045	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								4-Nov-97		4-Nov-97		4-Nov-97		10-Nov-97		6-Nov-97		6-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
Toluene	UG/L	0.4	2%	6000	0	1	52	1	U	1	U	1	U	1	U	1	U	0.4	J
Total Xylenes	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	UG/L	1	2%	40	0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl chloride	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	UJ	1	U	1	U	1	U
SEMI VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0%		0	0	4												
2,4,5-Trichlorophenol	UG/L	0	0%		0	0	52	2.6	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
2,4,6-Trichlorophenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dichlorophenol	UG/L	0	0%	1	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dimethylphenol	UG/L	0	0%	1000	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dinitrophenol	UG/L	0	0%	400	0	0	52	2.6	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
2,4-Dinitrotoluene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,6-Dinitrotoluene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Chloronaphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Chlorophenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Methylnaphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Nitroaniline	UG/L	0	0%		0	0	52	2.6	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
2-Nitrophenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0%		0	0	52	1	U	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
3-Nitroaniline	UG/L	0	0%		0	0	52	2.6	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0%		0	0	52	2.6	U	2.5	UJ	2.5	U	2.5	U	2.5	UJ	2.5	U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Chloroaniline	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	UJ
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Nitroaniline	UG/L	0	0%		0	0	52	2.6	U	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	U
4-Nitrophenol	UG/L	0	0%		0	0	52	2.6	U	2.5	UJ	2.5	U	2.5	U	2.5	UJ	2.5	U
Acenaphthene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-15		SW12-16		SW12-17		SW12-18		SW12-19		SW12-20	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12034		12028		12032		12052		12040		12045	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								4-Nov-97		4-Nov-97		4-Nov-97		10-Nov-97		6-Nov-97		6-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU																	
Acenaphthylene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Anthracene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(a)anthracene	UG/L	0.5	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(a)pyrene	UG/L	0.6	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(ghi)perylene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(k)fluoranthene	UG/L	1	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Chloroethyl)ether	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	12	8%	0.6	2	4	52	1	U	1	U	1	U	1	U	1	U	0.16	J
Butylbenzylphthalate	UG/L	0.2	19%		0	10	52	0.13	J	0.14	J	1	U	1	U	1	U	1	U
Carbazole	UG/L	0	0%		0	0	52	1	U	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
Chrysene	UG/L	0.5	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Di-n-butylphthalate	UG/L	2	12%		0	6	52	1	U	1	U	1	U	1	U	1	U	1	U
Di-n-octylphthalate	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Dibenzofuran	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Diethyl phthalate	UG/L	0.46	21%		0	11	52	1	U	1	U	1	U	1	U	1	U	0.46	J
Dimethylphthalate	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Fluoranthene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Fluorene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobenzene	UG/L	0	0%	0.00003	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobutadiene	UG/L	0	0%	0.01	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorocyclopentadiene	UG/L	0	0%	0.45	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachloroethane	UG/L	0	0%	0.6	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Isophorone	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	UG/L	0	0%		0	0	52	1	U	1	UJ	1	U	1	U	1	UJ	1	U
Nitrobenzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Pentachlorophenol	UG/L	2	2%	12.6	0	1	52	2.6	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Phenanthrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Phenol	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Pyrene	UG/L	1	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-15		SW12-16		SW12-17		SW12-18		SW12-19		SW12-20	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12034		12028		12032		12052		12040		12045	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								4-Nov-97		4-Nov-97		4-Nov-97		10-Nov-97		6-Nov-97		6-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
PESTICIDES/PCBS																			
4,4'-DDD	UG/L	0	0%	0.00008	0	0	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
4,4'-DDE	UG/L	0.0056	2%	0.000007	1	1	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
4,4'-DDT	UG/L	0.062	2%	0.00001	1	1	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Aldrin	UG/L	0.0041	2%	0.001	1	1	52	0.005	U	0.005	U	[illegible]	J	0.005	U	0.0051	U	0.0051	U
Alpha-BHC	UG/L	0.09	19%		0	10	52	0.005	U	0.022		0.01	U	0.005	U	0.0051	U	0.0051	U
Alpha-Chlordane	UG/L	0.0036	2%		0	1	52	0.005	U	0.005	U	0.06	U	0.005	U	0.0051	U	0.0051	U
Aroclor-1016	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1221	UG/L	0	0%	0.000001	0	0	52	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Aroclor-1232	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1242	UG/L	0.44	4%		0	2	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1248	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1254	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1260	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Beta-BHC	UG/L	0.017	10%		0	5	52	0.005	U	0.005	U	0.005	U	0.005	U	0.0051	U	0.0051	U
Delta-BHC	UG/L	0.0046	6%		0	3	52	0.005	U	0.0031	J	0.005	U	0.005	U	0.0051	U	0.0051	U
Dieldrin	UG/L	0	0%	0.0000006	0	0	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Endosulfan I	UG/L	0	0%	0.009	0	0	52	0.005	U	0.005	U	0.005	U	0.005	U	0.0051	U	0.0051	U
Endosulfan II	UG/L	0	0%	0.009	0	0	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Endosulfan sulfate	UG/L	0	0%		0	0	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Endrin	UG/L	0	0%	0.002	0	0	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Endrin aldehyde	UG/L	0.012	4%		0	2	52	0.01	U	0.01	U	0.01	U	0.01	U	0.012		0.01	U
Endrin ketone	UG/L	0.015	2%		0	1	52	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Gamma-BHC/Lindane	UG/L	0.092	10%		0	5	52	0.005	U	0.0091		0.005	U	0.005	U	0.0051	U	0.0051	U
Gamma-Chlordane	UG/L	0	0%		0	0	52	0.005	U	0.005	U	0.005	U	0.005	U	0.0051	U	0.0051	U
Heptachlor	UG/L	0.0063	6%	0.0002	3	3	52	0.005	U	0.005	U	0.005	U	0.005	U	0.0051	U	0.0051	U
Heptachlor epoxide	UG/L	0.0033	4%	0.0003	2	2	52	0.005	U	0.005	U	0.005	U	0.005	U	0.0051	U	0.0051	U
Hexachlorobenzene	UG/L	0.02	6%	0.00003	3	3	48	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Methoxychlor	UG/L	0	0%	0.03	0	0	52	0.05	U	0.05	U	0.05	U	0.05	U	0.051	U	0.051	U
Toxaphene	UG/L	0	0%	0.000006	0	0	52	0.5	U	0.5	U	0.5	U	0.5	U	0.51	U	0.51	U
METALS																			
Aluminum	UG/L	3430	83%	100	19	43	52	71.6		72.2		[illegible]		1880		170		21.9	U
Antimony	UG/L	0	0%		0	0	52	2.9	U	2.9	U	2.9	U	3.5	U	2.9	U	2.9	U
Arsenic	UG/L	3.8	10%	150	0	5	52	2.5	U	2.5	U	2.5	U	3.6	U	2.6		2.5	U
Barium	UG/L	115	100%		0	52	52	22.3		22.1		47.2		31.7		28.2		48.1	
Beryllium	UG/L	0.18	8%	1100	0	4	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-15		SW12-16		SW12-17		SW12-18		SW12-19		SW12-20	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12034		12028		12032		12052		12040		12045	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								4-Nov-97		4-Nov-97		4-Nov-97		10-Nov-97		6-Nov-97		6-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Cadmium	UG/L	2.1	13%	3.845011	0	7	52	0.4	U	0.4	U	0.4		0.3	U	0.4	U	0.4	U
Calcium	UG/L	130000	98%		0	51	52	54900		45900		26100		64100		69000		84700	
Chromium	UG/L	3.3	21%	139.78605	0	11	52	0.9	U	0.9	U	1.6		1.1	U	0.9	U	0.9	U
Cobalt	UG/L	6	13%	5	1	7	52	1.3	U	1.3	U	2.3		1.7	U	1.3	U	1.3	U
Copper	UG/L	27.6	56%	17.362284	2	29	52	1.7		1.3		7.1		5.1		4.1		1.8	
Cyanide	UG/L	0	0%	5.2	0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Iron	UG/L	6830	92%	300	12	48	52	91.3		97.7		1140	UJ	[illegible]		212		48.4	
Lead	UG/L	35.4	8%	1.4624632	4	4	52	1.7	U	1.7	U	1.7	U	1.8	U	1.7	U	1.7	U
Magnesium	UG/L	18600	100%		0	52	52	9520		8320		5870		7370		8430		14500	
Manganese	UG/L	1320	96%		0	50	52	2.9		2.8		1320		38.4		4.4		4	
Mercury	UG/L	0.11	10%	0.0007	5	5	52	0.1	U	0.11		0.1	U	0.1	U	0.1	U	0.1	U
Nickel	UG/L	19.7	52%	100.16198	0	27	52	0.9	U	0.9	U	3.8		5.5		0.9	U	0.9	U
Potassium	UG/L	11800	98%		0	51	52	2810		2980		11800		4820		2580		1220	
Selenium	UG/L	0	0%	4.6	0	0	52	4	U	4	U	4	U	4.7	U	4	U	4	U
Silver	UG/L	1.6	12%	0.1	6	6	52	1.1	U	1.1	U	1.6		2.1	U	1.1	U	1.1	U
Sodium	UG/L	114000	98%		0	51	52	10200		5320		1170		9310		7370		29000	
Thallium	UG/L	6.5	4%	8	0	2	52	6	U	6	U	6	U	6.3	U	6	U	6	U
Vanadium	UG/L	7.2	13%	14	0	7	52	1.2	U	1.2	U	1.2	U	4.4		1.2	U	1.2	U
Zinc	UG/L	105	100%	159.63864	0	52	52	8.1		6.8		31.2		15		9.4		12	
ADDITIONAL ANALYSES																			
Ammonia-Nitrogen	MG/L	0.22	100%		0	60	60	0.03		0.02		0.13		0.03		0.03		0.02	
Nitrate/Nitrite	%W/W	1.38	100%		0	47	47	0.09		0.02		0.02		0.01		0.01		0.01	
Nitrate/Nitrite	MG/KG	0.68	100%		0	11	11												
Total Dissolved Solids	MG/L	622	100%		0	58	58	210		182		166		233		259		386	
TOC--Soil 9060	MG/KG	6.3	100%		0	11	11												
Total Suspended Solids	MG/L	710	100%		0	58	58	2.8		1.2		39		39.6		24		1.5	
Phosphate, Total as P	MG/L	0.91	100%		0	58	58	0.02		0.05		0.23		0.04		0.03		0.01	
Alkalinity	MG/L	288	100%		0	58	58	129		116		42		232		160		166	
Total Hardness as CaCO3	MG/L	395	100%		0	58	58	164		148		84		184		208		270	
TOC--Water 415.1	MG/L	16.4	100%		0	17	17												
pH		8.4	100%		0	57	57	6.5		7.08		6.5				7.77		8.36	

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-22		SW12-23		SW12-24		SW12-25		SW12-26		SW12-27	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12024		12020		12019		12006		12005		12023	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								3-Nov-97		3-Nov-97		3-Nov-97		27-Oct-97		27-Oct-97		3-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
VOLATILE ORGANICS																			
1,1,1-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropan	UG/L	0	0%		0	0	48	1	UJ	1	U	1	U	1	U	1	U	1	UJ
1,2-Dibromoethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (total)	UG/L	0	0%		0	0	4												
1,2-Dichloropropane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Acetone	UG/L	10	6%		0	3	52	5	U	5	U	5	U	5	UJ	6	J	5	U
Benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	U	1	U	1	U	1	UJ
Carbon disulfide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorodibromomethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	U	1	UJ	1	UJ	1	UJ
Chloroform	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Ethyl benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl bromide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl butyl ketone	UG/L	0	0%		0	0	52	5	U	5	UJ	5	U	5	U	5	U	5	U
Methyl chloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl ethyl ketone	UG/L	0	0%		0	0	52	5	UJ	5	U	5	U	5	U	5	U	5	UJ
Methyl isobutyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methylene chloride	UG/L	0	0%		0	0	52	2	U	2	U	2	U	2	U	2	U	2	U
Styrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-22		SW12-23		SW12-24		SW12-25		SW12-26		SW12-27	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12024		12020		12019		12006		12005		12023	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								3-Nov-97		3-Nov-97		3-Nov-97		27-Oct-97		27-Oct-97		3-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Toluene	UG/L	0.4	2%	6000	0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Total Xylenes	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	UG/L	1	2%	40	0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl chloride	UG/L	0	0%		0	0	52	1	U	1	UJ	1	U	1	U	1	U	1	U
SEMI VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0%		0	0	4												
2,4,5-Trichlorophenol	UG/L	0	0%		0	0	52	2.7	U	2.9	U	2.7	U	2.6	U	2.6	U	2.6	U
2,4,6-Trichlorophenol	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
2,4-Dichlorophenol	UG/L	0	0%	1	0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
2,4-Dimethylphenol	UG/L	0	0%	1000	0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
2,4-Dinitrophenol	UG/L	0	0%	400	0	0	52	2.7	UJ	2.9	UJ	2.7	UJ	2.6	UJ	2.6	UJ	2.6	UJ
2,4-Dinitrotoluene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
2,6-Dinitrotoluene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
2-Chloronaphthalene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
2-Chlorophenol	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
2-Methylnaphthalene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
2-Methylphenol	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
2-Nitroaniline	UG/L	0	0%		0	0	52	2.7	U	2.9	U	2.7	U	2.6	U	2.6	U	2.6	U
2-Nitrophenol	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0%		0	0	52	1.1	UJ	1.2	UJ	1.1	UJ	1.1	UJ	1	UJ	1	UJ
3-Nitroaniline	UG/L	0	0%		0	0	52	2.7	UJ	2.9	UJ	2.7	UJ	2.6	UJ	2.6	UJ	2.6	UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0%		0	0	52	2.7	U	2.9	U	2.7	U	2.6	U	2.6	U	2.6	U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
4-Chloroaniline	UG/L	0	0%		0	0	52	1.1	UJ	1.2	U	1.1	U	1.1	U	1	U	1	UJ
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
4-Methylphenol	UG/L	0	0%		0	0	52	1.1	U	1.2	UJ	1.1	UJ	1.1	U	1	U	1	U
4-Nitroaniline	UG/L	0	0%		0	0	52	2.7	U	2.9	UJ	2.7	UJ	2.6	U	2.6	U	2.6	U
4-Nitrophenol	UG/L	0	0%		0	0	52	2.7	U	2.9	U	2.7	U	2.6	U	2.6	U	2.6	U
Acenaphthene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-22		SW12-23		SW12-24		SW12-25		SW12-26		SW12-27	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12024		12020		12019		12006		12005		12023	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								3-Nov-97		3-Nov-97		3-Nov-97		27-Oct-97		27-Oct-97		3-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Acenaphthylene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Anthracene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Benzo(a)anthracene	UG/L	0.5	2%		0	1	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Benzo(a)pyrene	UG/L	0.6	2%		0	1	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Benzo(ghi)perylene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Benzo(k)fluoranthene	UG/L	1	2%		0	1	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Bis(2-Chloroethyl)ether	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%		0	0	48	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	12	8%	0.6	2	4	52	1	U	1.2	U	1.1	U	1.2		1	U	1	U
Butylbenzylphthalate	UG/L	0.2	19%		0	10	52	1.1	U	0.2	J	1.1	U	1.1	U	1	U	1	U
Carbazole	UG/L	0	0%		0	0	52	1.1	UJ	1.2	UJ	1.1	UJ	1.1	UJ	1	UJ	1	UJ
Chrysene	UG/L	0.5	2%		0	1	52	1.1	U	1.2	UJ	1.1	UJ	1.1	U	1	U	1	U
Di-n-butylphthalate	UG/L	2	12%		0	6	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Di-n-octylphthalate	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	UJ	1	UJ	1	U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Dibenzofuran	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Diethyl phthalate	UG/L	0.46	21%		0	11	52	1.1	U	0.088	J	0.12	J	1.1	U	1	U	1	U
Dimethylphthalate	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Fluoranthene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Fluorene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Hexachlorobenzene	UG/L	0	0%	0.00003	0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Hexachlorobutadiene	UG/L	0	0%	0.01	0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Hexachlorocyclopentadiene	UG/L	0	0%	0.45	0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Hexachloroethane	UG/L	0	0%	0.6	0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Isophorone	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Naphthalene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Nitrobenzene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Pentachlorophenol	UG/L	2	2%	12.6	0	1	52	2.7	U	2.9	U	2.7	U	2.6	U	2.6	U	2.6	U
Phenanthrene	UG/L	0	0%		0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Phenol	UG/L	0	0%	5	0	0	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U
Pyrene	UG/L	1	2%		0	1	52	1.1	U	1.2	U	1.1	U	1.1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-22		SW12-23		SW12-24		SW12-25		SW12-26		SW12-27	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12024		12020		12019		12006		12005		12023	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								3-Nov-97		3-Nov-97		3-Nov-97		27-Oct-97		27-Oct-97		3-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU																	
PESTICIDES/PCBS																			
4,4'-DDD	UG/L	0	0%	0.00008	0	0	52	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
4,4'-DDE	UG/L	0.0056	2%	0.000007	1	1	52	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
4,4'-DDT	UG/L	0.062	2%	0.00001	1	1	52	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Aldrin	UG/L	0.0041	2%	0.001	1	1	52	0.005	U	0.0054	U	0.005	U	0.0054	U	0.005	U	0.005	U
Alpha-BHC	UG/L	0.09	19%		0	10	52	0.022		0.0054	U	0.005	U	0.0054	U	0.005	U	0.005	U
Alpha-Chlordane	UG/L	0.0036	2%		0	1	52	0.005	U	0.0054	U	0.005	U	0.0054	U	0.005	U	0.005	U
Aroclor-1016	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1221	UG/L	0	0%	0.000001	0	0	52	0.2	U	0.22	U	0.2	U	0.22	U	0.2	U	0.2	U
Aroclor-1232	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1242	UG/L	0.44	4%		0	2	52	0.1	U	0.44		0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1248	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1254	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1260	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.1	U
Beta-BHC	UG/L	0.017	10%		0	5	52	0.0079		0.0054	U	0.005	U	0.0054	U	0.005	U	0.005	U
Delta-BHC	UG/L	0.0046	6%		0	3	52	0.005	U	0.0054	U	0.005	U	0.0054	U	0.005	U	0.005	U
Dieldrin	UG/L	0	0%	0.0000006	0	0	52	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Endosulfan I	UG/L	0	0%	0.009	0	0	52	0.005	U	0.0054	U	0.005	U	0.0054	U	0.005	U	0.005	U
Endosulfan II	UG/L	0	0%	0.009	0	0	52	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Endosulfan sulfate	UG/L	0	0%		0	0	52	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Endrin	UG/L	0	0%	0.002	0	0	52	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Endrin aldehyde	UG/L	0.012	4%		0	2	52	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Endrin ketone	UG/L	0.015	2%		0	1	52	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Gamma-BHC/Lindane	UG/L	0.092	10%		0	5	52	0.0047	J	0.0054	U	0.005	U	0.0054	U	0.005	U	0.005	U
Gamma-Chlordane	UG/L	0	0%		0	0	52	0.005	U	0.0054	U	0.005	U	0.0054	U	0.005	U	0.005	U
Heptachlor	UG/L	0.0063	6%	0.0002	3	3	52	0.0054	J	0.0054	U	0.005	U	0.0054	U	0.005	U	0.005	U
Heptachlor epoxide	UG/L	0.0033	4%	0.0003	2	2	52	0.0025		0.0054	U	0.005	U	0.0054	U	0.005	U	0.005	U
Hexachlorobenzene	UG/L	0.02	6%	0.00003	3	3	48	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Methoxychlor	UG/L	0	0%	0.03	0	0	52	0.05	U	0.054	U	0.05	U	0.054	U	0.05	U	0.05	U
Toxaphene	UG/L	0	0%	0.000006	0	0	52	0.5	U	0.54	U	0.5	U	0.54	U	0.5	U	0.5	U
METALS																			
Aluminum	UG/L	3430	83%	100	19	43	52	73.3		76.7		89.1		78.6		189	J	29.6	
Antimony	UG/L	0	0%		0	0	52	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U
Arsenic	UG/L	3.8	10%	150	0	5	52	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Barium	UG/L	115	100%		0	52	52	22.2		44.1		29		18.3		47.2		40	
Beryllium	UG/L	0.18	8%	1100	0	4	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-22		SW12-23		SW12-24		SW12-25		SW12-26		SW12-27	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12024		12020		12019		12006		12005		12023	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								3-Nov-97		3-Nov-97		3-Nov-97		27-Oct-97		27-Oct-97		3-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
Cadmium	UG/L	2.1	13%	3.845011	0	7	52	0.4	U	0.4	U	0.4	U	0.9		0.4	U	0.4	U
Calcium	UG/L	130000	98%		0	51	52	35500		75900		57800		25400		70600	U	71800	
Chromium	UG/L	3.3	21%	139.78605	0	11	52	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U
Cobalt	UG/L	6	13%	5	1	7	52	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
Copper	UG/L	27.6	56%	17.362284	2	29	52	1.1	U	1.1	U	1.1	U	**27.6**		1.1	U	1.1	U
Cyanide	UG/L	0	0%	5.2	0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Iron	UG/L	6830	92%	300	12	48	52	125		109		95.9		222		**404**	J	26.7	
Lead	UG/L	35.4	8%	1.4624632	4	4	52	1.7	U	1.7	U	**2**		**35.4**		1.7	U	1.7	U
Magnesium	UG/L	18600	100%		0	52	52	4440		8800		7450		4280		6520		7340	
Manganese	UG/L	1320	96%		0	50	52	13.2		6.4		2.4		19.6		70.9	U	2	
Mercury	UG/L	0.11	10%	0.0007	5	5	52	1	U	1	U	1	U	1	U	1	U	1	U
Nickel	UG/L	19.7	52%	100.16198	0	27	52	1.1		1.6		1.2		1.4		1.7		0.9	U
Potassium	UG/L	11800	98%		0	51	52	8780		4780		4430		1610		7410	U	2010	
Selenium	UG/L	0	0%	4.6	0	0	52	4	U	4	U	4	U	4	U	4	U	4	U
Silver	UG/L	1.6	12%	0.1	6	6	52	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Sodium	UG/L	114000	98%		0	51	52	6720		23800		17400		2460		12900	U	25200	
Thallium	UG/L	6.5	4%	8	0	2	52	6	U	6	U	6	U	6	U	6	U	6	U
Vanadium	UG/L	7.2	13%	14	0	7	52	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
Zinc	UG/L	105	100%	159.63864	0	52	52	25.8		19.5		6.7		105		14.5		8.4	
ADDITIONAL ANALYSES																			
Ammonia-Nitrogen	MG/L	0.22	100%		0	60	60	0.05		0.03		0.03		0.04		0.09		0.02	
Nitrate/Nitrite	%W/W	1.38	100%		0	47	47	0.1		0.01		0.01		1.38		0.02		0.03	
Nitrate/Nitrite	MG/KG	0.68	100%		0	11	11												
Total Dissolved Solids	MG/L	622	100%		0	58	58	149		112		237		120		316		310	
TOC--Soil 9060	MG/KG	6.3	100%		0	11	11												
Total Suspended Solids	MG/L	710	100%		0	58	58	4.8		12.2		1.9		17.7		9.86		2	
Phosphate, Total as P	MG/L	0.91	100%		0	58	58	0.09		0.04		0.06		0.1		0.05		0.02	
Alkalinity	MG/L	288	100%		0	58	58	102		196		160		47		168		192	
Total Hardness as CaCO3	MG/L	395	100%		0	58	58	106		228		182		82		230		200	
TOC--Water 415.1	MG/L	16.4	100%		0	17	17	9.64		3.87		4.23						1	
pH		8.4	100%		0	57	57	7.8		7.25		7.07		7.31		6.85		7.8	

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-28		SW12-28		SW12-29		SW12-30		SW12-31		SW12-32	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12017		12016		12063		12015		12014		12013	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								29-Oct-97		29-Oct-97		4-Dec-97		28-Oct-97		28-Oct-97		28-Oct-97	
QC_CODE								DU		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
VOLATILE ORGANICS																			
1,1,1-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropan	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (total)	UG/L	0	0%		0	0	4												
1,2-Dichloropropane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Acetone	UG/L	10	6%		0	3	52	5	U	5	U	5	U	5	UJ	5	UJ	5	UJ
Benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Carbon disulfide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorodibromomethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	UJ	1	UJ	1	UJ
Chloroform	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Ethyl benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl bromide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl butyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methyl chloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl ethyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methyl isobutyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methylene chloride	UG/L	0	0%		0	0	52	2	U	2	U	2	U	2	U	2	U	2	U
Styrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-28		SW12-28		SW12-29		SW12-30		SW12-31		SW12-32	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12017		12016		12063		12015		12014		12013	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								29-Oct-97		29-Oct-97		4-Dec-97		28-Oct-97		28-Oct-97		28-Oct-97	
QC_CODE								DU		SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
Toluene	UG/L	0.4	2%	6000	0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Total Xylenes	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	UG/L	1	2%	40	0	1	52	1	U	1	U	1	U	1		1	U	1	U
Vinyl chloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
SEMI VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0%		0	0	4												
2,4,5-Trichlorophenol	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.7	U	2.6	U	2.6	U	2.6	U
2,4,6-Trichlorophenol	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2,4-Dichlorophenol	UG/L	0	0%	1	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2,4-Dimethylphenol	UG/L	0	0%	1000	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2,4-Dinitrophenol	UG/L	0	0%	400	0	0	52	2.5	UJ	2.5	U	2.7	UJ	2.6	UJ	2.6	UJ	2.6	UJ
2,4-Dinitrotoluene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	UJ	1	UJ	1	UJ
2,6-Dinitrotoluene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2-Chloronaphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2-Chlorophenol	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2-Methylnaphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2-Methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
2-Nitroaniline	UG/L	0	0%		0	0	52	2.5	U	2.5	UJ	2.7	UJ	2.6	UJ	2.6	UJ	2.6	U
2-Nitrophenol	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1.1	UJ	1	UJ	1	UJ	1	UJ
3-Nitroaniline	UG/L	0	0%		0	0	52	2.5	UJ	2.5	UJ	2.7	UJ	2.6	UJ	2.6	UJ	2.6	UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.7	U	2.6	U	2.6	U	2.6	U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
4-Chloroaniline	UG/L	0	0%		0	0	52	1	U	1	U	1.1	UJ	1	U	1	U	1	U
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
4-Methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
4-Nitroaniline	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.7	UJ	2.6	U	2.6	U	2.6	U
4-Nitrophenol	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.7	U	2.6	U	2.6	U	2.6	U
Acenaphthene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-28		SW12-28		SW12-29		SW12-30		SW12-31		SW12-32	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12017		12016		12063		12015		12014		12013	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								29-Oct-97		29-Oct-97		4-Dec-97		28-Oct-97		28-Oct-97		28-Oct-97	
QC_CODE								DU		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU																	
Acenaphthylene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Anthracene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Benzo(a)anthracene	UG/L	0.5	2%		0	1	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Benzo(a)pyrene	UG/L	0.6	2%		0	1	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Benzo(ghi)perylene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Benzo(k)fluoranthene	UG/L	1	2%		0	1	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Bis(2-Chloroethyl)ether	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%		0	0	48	1	U	1	U	1.1	U	1	U	1	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	12	8%	0.6	2	4	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Butylbenzylphthalate	UG/L	0.2	19%		0	10	52	1	U	1	U	0.088	J	1	U	1	U	1	U
Carbazole	UG/L	0	0%		0	0	52	1	UJ	1	U	1.1	UJ	1	UJ	1	UJ	1	UJ
Chrysene	UG/L	0.5	2%		0	1	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Di-n-butylphthalate	UG/L	2	12%		0	6	52	1	U	1	U	0.058	J	1	U	1	U	11	U
Di-n-octylphthalate	UG/L	0	0%		0	0	52	1	UJ	1	U	1.1	U	1	U	1	U	1	U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Dibenzofuran	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Diethyl phthalate	UG/L	0.46	21%		0	11	52	1	U	1	U	0.061	J	1	U	1	U	1	U
Dimethylphthalate	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Fluoranthene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Fluorene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Hexachlorobenzene	UG/L	0	0%	0.00003	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Hexachlorobutadiene	UG/L	0	0%	0.01	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Hexachlorocyclopentadiene	UG/L	0	0%	0.45	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Hexachloroethane	UG/L	0	0%	0.6	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Isophorone	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Naphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Nitrobenzene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Pentachlorophenol	UG/L	2	2%	12.6	0	1	52	2.5	U	2.5	U	2.7	UJ	2.6	U	2.6	U	2.6	U
Phenanthrene	UG/L	0	0%		0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Phenol	UG/L	0	0%	5	0	0	52	1	U	1	U	1.1	U	1	U	1	U	1	U
Pyrene	UG/L	1	2%		0	1	52	1	U	1	U	1.1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-28		SW12-28		SW12-29		SW12-30		SW12-31		SW12-32	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12017		12016		12063		12015		12014		12013	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								29-Oct-97		29-Oct-97		4-Dec-97		28-Oct-97		28-Oct-97		28-Oct-97	
QC_CODE								DU		SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
PESTICIDES/PCBS																			
4,4'-DDD	UG/L	0	0%	0.00008	0	0	52	0.01	U	0.01	U	0.011	U	0.011	U	0.012	U	0.011	U
4,4'-DDE	UG/L	0.0056	2%	0.000007	1	1	52	0.01	U	0.01	U	0.01	U	0.011	U	0.012	U	0.011	U
4,4'-DDT	UG/L	0.062	2%	0.00001	1	1	52	0.01	U	0.01	U	0.01	U	0.011	U	0.012	U	0.011	U
Aldrin	UG/L	0.0041	2%	0.001	1	1	52	0.0052	U	0.005	U	0.005	U	0.0056	U	0.006	U	0.0054	U
Alpha-BHC	UG/L	0.09	19%		0	10	52	0.0052	U	0.005	U	0.005	U	0.005	U	0.005	J	0.0054	U
Alpha-Chlordane	UG/L	0.0036	2%		0	1	52	0.0052	U	0.005	U	0.005	U	0.0056	U	0.0036	J	0.0054	U
Aroclor-1016	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.11	U	0.12	U	0.11	U
Aroclor-1221	UG/L	0	0%	0.000001	0	0	52	0.21	U	0.2	U	0.2	U	0.22	U	0.24	U	0.22	U
Aroclor-1232	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.11	U	0.12	U	0.11	U
Aroclor-1242	UG/L	0.44	4%		0	2	52	0.1	U	0.1	U	0.1	U	0.11	U	0.12	U	0.11	U
Aroclor-1248	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.11	U	0.12	U	0.11	U
Aroclor-1254	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.11	U	0.12	U	0.11	U
Aroclor-1260	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.11	U	0.12	U	0.11	U
Beta-BHC	UG/L	0.017	10%		0	5	52	0.0052	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0054	U
Delta-BHC	UG/L	0.0046	6%		0	3	52	0.0052	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0054	U
Dieldrin	UG/L	0	0%	0.0000006	0	0	52	0.01	U	0.01	U	0.01	U	0.011	U	0.012	U	0.011	U
Endosulfan I	UG/L	0	0%	0.009	0	0	52	0.0052	U	0.005	U	0.005	U	0.0056	U	0.006	U	0.0054	U
Endosulfan II	UG/L	0	0%	0.009	0	0	52	0.01	U	0.01	U	0.01	U	0.011	U	0.012	U	0.011	U
Endosulfan sulfate	UG/L	0	0%		0	0	52	0.01	U	0.01	U	0.01	U	0.011	U	0.012	U	0.011	U
Endrin	UG/L	0	0%	0.002	0	0	52	0.01	U	0.01	U	0.01	U	0.011	U	0.012	U	0.011	U
Endrin aldehyde	UG/L	0.012	4%		0	2	52	0.01	U	0.01	U	0.01	U	0.011	U	0.012	U	0.011	U
Endrin ketone	UG/L	0.015	2%		0	1	52	0.01	U	0.01	U	0.01	U	0.011	U	0.012	U	0.011	U
Gamma-BHC/Lindane	UG/L	0.092	10%		0	5	52	0.0052	U	0.005	U	0.005	U	0.005	U	0.005	U	0.0054	U
Gamma-Chlordane	UG/L	0	0%		0	0	52	0.0052	U	0.005	U	0.005	U	0.0056	U	0.006	U	0.0054	U
Heptachlor	UG/L	0.0063	6%	0.0002	3	3	52	0.0052	U	0.005	U	0.005	U	0.0056	U	0.006	U	0.0054	U
Heptachlor epoxide	UG/L	0.0033	4%	0.0003	2	2	52	0.0052	U	0.005	U	0.005	U	0.0056	U	0.006	U	0.0054	U
Hexachlorobenzene	UG/L	0.02	6%	0.00003	3	3	48	0.01	U	0.01	U	**0.0072**	J	0.011	U	0.012	U	0.011	U
Methoxychlor	UG/L	0	0%	0.03	0	0	52	0.052	U	0.05	U	0.05	U	0.056	U	0.06	U	0.054	U
Toxaphene	UG/L	0	0%	0.000006	0	0	52	0.52	U	0.5	U	0.5	U	0.56	U	0.6	U	0.54	U
METALS																			
Aluminum	UG/L	3430	83%	100	19	43	52	**189**	J	**209**	J	32.3	J	**633**	J	21.9	U	89.2	
Antimony	UG/L	0	0%		0	0	52	2.9	U	2.9	U	3.5	U	2.9	U	2.9	U	2.9	U
Arsenic	UG/L	3.8	10%	150	0	5	52	2.5	U	3.6		3.6	U	2.5	U	2.5	U	2.5	U
Barium	UG/L	115	100%		0	52	52	63.4		63.8		45.4	J	22.8		59.3		61.9	
Beryllium	UG/L	0.18	8%	1100	0	4	52	0.1	U	0.1	U	0.13	J	0.1	U	0.1	U	0.1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-28		SW12-28		SW12-29		SW12-30		SW12-31		SW12-32	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12017		12016		12063		12015		12014		12013	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								29-Oct-97		29-Oct-97		4-Dec-97		28-Oct-97		28-Oct-97		28-Oct-97	
QC_CODE								DU		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Cadmium	UG/L	2.1	13%	3.845011	0	7	52	0.4	U	0.4	U	0.46	J	0.4	U	0.4	U	0.4	U
Calcium	UG/L	130000	98%		0	51	52	112000		111000		77900		40500		88800		93000	
Chromium	UG/L	3.3	21%	139.78605	0	11	52	0.9	U	0.9	U	1.1	U	1.5		0.9	U	0.9	U
Cobalt	UG/L	6	13%	5	1	7	52	1.3	U	1.3	U	1.7	U	1.3	U	1.3	U	1.3	U
Copper	UG/L	27.6	56%	17.362284	2	29	52	1.1	U	1.1	U	2.3	U	1.1	U	1.1	U	1.1	U
Cyanide	UG/L	0	0%	5.2	0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Iron	UG/L	6830	92%	300	12	48	52	365		399		42.8	J	610		155		273	
Lead	UG/L	35.4	8%	1.4624632	4	4	52	1.7	U	1.7	U	1.8	U	1.7	U	1.7	U	1.7	U
Magnesium	UG/L	18600	100%		0	52	52	16300		16200		12900		4450		13100		12200	
Manganese	UG/L	1320	96%		0	50	52	43.8		50		3.6	J	25.1		31.8		42.9	
Mercury	UG/L	0.11	10%	0.0007	5	5	52	1	U	1	U	0.1	U	1	U	1	U	1	U
Nickel	UG/L	19.7	52%	100.16198	0	27	52	1.8		1.2		2.3	U	1.3		0.9	U	1.3	
Potassium	UG/L	11800	98%		0	51	52	1760		1680		1290	J	2180		5910		5610	
Selenium	UG/L	0	0%	4.6	0	0	52	4	U	4	U	4.7	U	4	U	4	U	4	U
Silver	UG/L	1.6	12%	0.1	6	6	52	1.1	U	1.1	U	2.1	U	1.1	U	1.1	U	1.1	U
Sodium	UG/L	114000	98%		0	51	52	29800		29400		11600		42000		52400		50100	
Thallium	UG/L	6.5	4%	8	0	2	52	6	U	6	U	6.3	U	6	U	6	U	6	U
Vanadium	UG/L	7.2	13%	14	0	7	52	1.2	U	1.2	U	1.6	U	1.2	U	1.2	U	1.2	U
Zinc	UG/L	105	100%	159.63864	0	52	52	19.7		16.2		6.2	J	57.8		20.6		11.7	
ADDITIONAL ANALYSES																			
Ammonia-Nitrogen	MG/L	0.22	100%		0	60	60	0.03		0.04		0.03		0.03		0.04		0.04	
Nitrate/Nitrite	%W/W	1.38	100%		0	47	47	0.01		0.01				1.1		0.01		0.01	
Nitrate/Nitrite	MG/KG	0.68	100%		0	11	11					0.03							
Total Dissolved Solids	MG/L	622	100%		0	58	58	469		461		274		254		431		426	
TOC--Soil 9060	MG/KG	6.3	100%		0	11	11					1							
Total Suspended Solids	MG/L	710	100%		0	58	58	368		22.86		2.2		12.6		2.7		15.16	
Phosphate, Total as P	MG/L	0.91	100%		0	58	58	0.04		0.03		0.04		0.03		0.03		0.05	
Alkalinity	MG/L	288	100%		0	58	58	280		280		218		178		270		250	
Total Hardness as CaCO3	MG/L	395	100%		0	58	58	350		348		238		130		285		295	
TOC--Water 415.1	MG/L	16.4	100%		0	17	17	4.15		3.82				1		2.29		2.82	
pH		8.4	100%		0	57	57	7.94		7.94		7.97		8.18		8.25		8.02	

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		RI Phase		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-33		67190		SW12-35		SW12-36		SW12-36		SW12-37	
MATRIX								SURFACE WATER		SW12-34		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12012		12018		12033		12030		12031		12029	
SAMP_DEPTH_TOP								0		SA		0		0		0		0	
SAMP_DEPTH_BOT								N/A		0		N/A		N/A		N/A		N/A	
SAMP_DATE								28-Oct-97		0.1		4-Nov-97		4-Nov-97		4-Nov-97		4-Nov-97	
QC_CODE								SA		SURFACE		SA		SA		DU		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	3-Nov-97		RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
VOLATILE ORGANICS																			
1,1,1-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropan	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	UJ	1	UJ	1	UJ
1,2-Dibromoethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (total)	UG/L	0	0%		0	0	4												
1,2-Dichloropropane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Acetone	UG/L	10	6%		0	3	52	5	UJ	5	U	5		5	U	5	U	5	U
Benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	UJ	1	UJ	1	UJ
Carbon disulfide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorodibromomethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	UG/L	0	0%		0	0	52	1	UJ	1	U	1	U	1	UJ	1	UJ	1	UJ
Chloroform	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Ethyl benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl bromide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl butyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methyl chloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl ethyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	UJ	5	UJ	5	UJ
Methyl isobutyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methylene chloride	UG/L	0	0%		0	0	52	2	U	2	U	2	U	2	U	2	U	2	U
Styrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		RI Phase		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-33		67190		SW12-35		SW12-36		SW12-36		SW12-37	
MATRIX								SURFACE WATER		SW12-34		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12012		12018		12033		12030		12031		12029	
SAMP_DEPTH_TOP								0		SA		0		0		0		0	
SAMP_DEPTH_BOT								N/A		0		N/A		N/A		N/A		N/A	
SAMP_DATE								28-Oct-97		0.1		4-Nov-97		4-Nov-97		4-Nov-97		4-Nov-97	
QC_CODE								SA		SURFACE		SA		SA		DU		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	3-Nov-97		RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Toluene	UG/L	0.4	2%	6000	0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Total Xylenes	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	UG/L	1	2%	40	0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl chloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	UJ	1	UJ	1	UJ
SEMI VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0%		0	0	4												
2,4,5-Trichlorophenol	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.6	U	2.5	U	2.5	U	2.5	U
2,4,6-Trichlorophenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dichlorophenol	UG/L	0	0%	1	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dimethylphenol	UG/L	0	0%	1000	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dinitrophenol	UG/L	0	0%	400	0	0	52	2.5	UJ	2.5	UJ	2.6	U	2.5	U	2.5	U	2.5	U
2,4-Dinitrotoluene	UG/L	0	0%		0	0	52	1	UJ	1	U	1	U	1	U	1	U	1	U
2,6-Dinitrotoluene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Chloronaphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Chlorophenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Methylnaphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Nitroaniline	UG/L	0	0%		0	0	52	2.5	UJ	2.5	U	2.6	U	2.5	U	2.5	U	2.5	U
2-Nitrophenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
3-Nitroaniline	UG/L	0	0%		0	0	52	2.5	UJ	2.5	UJ	2.6	UJ	2.5	UJ	2.5	UJ	2.5	UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.6	U	2.5	U	2.5	U	2.5	UJ
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Chloroaniline	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Methylphenol	UG/L	0	0%		0	0	52	1	U	1	UJ	1	U	1	U	1	U	1	U
4-Nitroaniline	UG/L	0	0%		0	0	52	2.5	U	2.5	UJ	2.6	UJ	2.5	U	2.5	UJ	2.5	UJ
4-Nitrophenol	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.6	U	2.5	U	2.5	U	2.5	UJ
Acenaphthene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		RI Phase		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-33		67190		SW12-35		SW12-36		SW12-36		SW12-37	
MATRIX								SURFACE WATER		SW12-34		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12012		12018		12033		12030		12031		12029	
SAMP_DEPTH_TOP								0		SA		0		0		0		0	
SAMP_DEPTH_BOT								N/A		0		N/A		N/A		N/A		N/A	
SAMP_DATE								28-Oct-97		0.1		4-Nov-97		4-Nov-97		4-Nov-97		4-Nov-97	
QC_CODE								SA		SURFACE		SA		SA		DU		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1		3-Nov-97		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Acenaphthylene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Anthracene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(a)anthracene	UG/L	0.5	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(a)pyrene	UG/L	0.6	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(ghi)perylene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(k)fluoranthene	UG/L	1	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Chloroethyl)ether	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	12	8%	0.6	2	4	52	1	U	1	U	1	U	1	U	1	U	1	U
Butylbenzylphthalate	UG/L	0.2	19%		0	10	52	1	U	0.11	J	1	U	0.065	J	0.11	J	1	U
Carbazole	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
Chrysene	UG/L	0.5	2%		0	1	52	1	U	1	UJ	1	U	1	U	1	U	1	U
Di-n-butylphthalate	UG/L	2	12%		0	6	52	1	U	1	U	1	U	1	U	1	U	1	U
Di-n-octylphthalate	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Dibenzofuran	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Diethyl phthalate	UG/L	0.46	21%		0	11	52	1	U	0.13	J	1	U	1	U	1	U	1	U
Dimethylphthalate	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Fluoranthene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Fluorene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobenzene	UG/L	0	0%	0.00003	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobutadiene	UG/L	0	0%	0.01	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorocyclopentadiene	UG/L	0	0%	0.45	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachloroethane	UG/L	0	0%	0.6	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Isophorone	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	UJ
Nitrobenzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Pentachlorophenol	UG/L	2	2%	12.6	0	1	52	2.5	U	2.5	U	2.6	U	2.5	U	2.5	U	2.5	U
Phenanthrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Phenol	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Pyrene	UG/L	1	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		RI Phase		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-33		67190		SW12-35		SW12-36		SW12-36		SW12-37	
MATRIX								SURFACE WATER		SW12-34		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12012		12018		12033		12030		12031		12029	
SAMP_DEPTH_TOP								0		SA		0		0		0		0	
SAMP_DEPTH_BOT								N/A		0		N/A		N/A		N/A		N/A	
SAMP_DATE								28-Oct-97		0.1		4-Nov-97		4-Nov-97		4-Nov-97		4-Nov-97	
QC_CODE								SA		SURFACE		SA		SA		DU		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1	Step 1	3-Nov-97		RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU																	
PESTICIDES/PCBS																			
4,4'-DDD	UG/L	0	0%	0.00008	0	0	52	0.011	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U
4,4'-DDE	UG/L	0.0056	2%	0.000007	1	1	52	0.011	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U
4,4'-DDT	UG/L	0.062	2%	0.00001	1	1	52	0.011	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U
Aldrin	UG/L	0.0041	2%	0.001	1	1	52	0.0054	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U
Alpha-BHC	UG/L	0.09	19%		0	10	52	0.0054	U	0.0066		0.09		0.0027	J	0.005	U	0.005	U
Alpha-Chlordane	UG/L	0.0036	2%		0	1	52	0.0054	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U
Aroclor-1016	UG/L	0	0%	0.000001	0	0	52	0.11	U	0.1	U	0.2	U	0.1	U	0.1	U	0.1	U
Aroclor-1221	UG/L	0	0%	0.000001	0	0	52	0.22	U	0.2	U	0.4	U	0.2	U	0.2	U	0.2	U
Aroclor-1232	UG/L	0	0%	0.000001	0	0	52	0.11	U	0.1	U	0.2	U	0.1	U	0.1	U	0.1	U
Aroclor-1242	UG/L	0.44	4%		0	2	52	0.11	U	0.1	U	0.2	U	0.1	U	0.1	U	0.1	U
Aroclor-1248	UG/L	0	0%	0.000001	0	0	52	0.11	U	0.1	U	0.2	U	0.1	U	0.1	U	0.1	U
Aroclor-1254	UG/L	0	0%	0.000001	0	0	52	0.11	U	0.1	U	0.2	U	0.1	U	0.1	U	0.1	U
Aroclor-1260	UG/L	0	0%	0.000001	0	0	52	0.11	U	0.1	U	0.2	U	0.1	U	0.1	U	0.1	U
Beta-BHC	UG/L	0.017	10%		0	5	52	0.0054	U	0.0088		0.017	J	0.005	U	0.005	U	0.005	U
Delta-BHC	UG/L	0.0046	6%		0	3	52	0.0054	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Dieldrin	UG/L	0	0%	0.0000006	0	0	52	0.011	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U
Endosulfan I	UG/L	0	0%	0.009	0	0	52	0.0054	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U
Endosulfan II	UG/L	0	0%	0.009	0	0	52	0.011	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U
Endosulfan sulfate	UG/L	0	0%		0	0	52	0.011	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U
Endrin	UG/L	0	0%	0.002	0	0	52	0.011	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U
Endrin aldehyde	UG/L	0.012	4%		0	2	52	0.011	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U
Endrin ketone	UG/L	0.015	2%		0	1	52	0.011	U	0.01	U	0.02	U	0.01	U	0.01	U	0.01	U
Gamma-BHC/Lindane	UG/L	0.092	10%		0	5	52	0.0054	U	0.005	U	0.092		0.005	U	0.005	U	0.005	U
Gamma-Chlordane	UG/L	0	0%		0	0	52	0.0054	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U
Heptachlor	UG/L	0.0063	6%	0.0002	3	3	52	0.0054	U	0.005	U	0.0079	U	0.005	U	0.005	U	0.005	U
Heptachlor epoxide	UG/L	0.0033	4%	0.0003	2	2	52	0.0054	U	0.005	U	0.01	U	0.005	U	0.005	U	0.005	U
Hexachlorobenzene	UG/L	0.02	6%	0.00003	3	3	48	0.011	U	0.01	U	0.013	J	0.01	U	0.01	U	0.01	U
Methoxychlor	UG/L	0	0%	0.03	0	0	52	0.054	U	0.05	U	0.1	U	0.05	U	0.05	U	0.05	U
Toxaphene	UG/L	0	0%	0.000006	0	0	52	0.54	U	0.5	U	1	U	0.5	U	0.5	U	0.5	U
METALS																			
Aluminum	UG/L	3430	83%	100	19	43	52	41.2		58		3430		36		41.5		24.2	
Antimony	UG/L	0	0%		0	0	52	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U
Arsenic	UG/L	3.8	10%	150	0	5	52	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Barium	UG/L	115	100%		0	52	52	74.3		24.1		115		34.7		34.9		33.9	
Beryllium	UG/L	0.18	8%	1100	0	4	52	0.1	U	0.1	U	0.18		0.1	U	0.1	U	0.1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		RI Phase		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-33		67190		SW12-35		SW12-36		SW12-36		SW12-37	
MATRIX								SURFACE WATER		SW12-34		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12012		12018		12033		12030		12031		12029	
SAMP_DEPTH_TOP								0		SA		0		0		0		0	
SAMP_DEPTH_BOT								N/A		0		N/A		N/A		N/A		N/A	
SAMP_DATE								28-Oct-97		0.1		4-Nov-97		4-Nov-97		4-Nov-97		4-Nov-97	
QC_CODE								SA		SURFACE		SA		SA		DU		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	3-Nov-97		RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Cadmium	UG/L	2.1	13%	3.845011	0	7	52	0.4	U	0.4	U	2.1		0.4	U	0.4	U	0.4	U
Calcium	UG/L	130000	98%		0	51	52	124000		50200		29300		59200		59700		58700	
Chromium	UG/L	3.3	21%	139.78605	0	11	52	0.9	U	0.9	U	3.3		0.9	U	0.9	U	0.9	U
Cobalt	UG/L	6	13%	5	1	7	52	1.3	U	1.3	U	6		1.3	U	1.3	U	1.3	U
Copper	UG/L	27.6	56%	17.362284	2	29	52	1.1	U	1.1	U	21.2		1.6		2.5		1.9	
Cyanide	UG/L	0	0%	5.2	0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Iron	UG/L	6830	92%	300	12	48	52	191		86.2		6830	J	67		76.7		60.6	
Lead	UG/L	35.4	8%	1.4624632	4	4	52	1.7	U	1.7	U	13.8		1.7	U	1.7	U	1.7	U
Magnesium	UG/L	18600	100%		0	52	52	14500		5560		4990		7180		7230		7070	
Manganese	UG/L	1320	96%		0	50	52	43.5		2.3		1000		1.1		1.2		1.5	
Mercury	UG/L	0.11	10%	0.0007	5	5	52	1	U	1	U	0.1		0.1	U	0.1	U	0.1	U
Nickel	UG/L	19.7	52%	100.16198	0	27	52	0.9	U	1.7		19.7		0.9	U	1.1		0.9	U
Potassium	UG/L	11800	98%		0	51	52	10900		4040		6140		3130		3170		3100	
Selenium	UG/L	0	0%	4.6	0	0	52	4	U	4	U	4	U	4	U	4	U	4	U
Silver	UG/L	1.6	12%	0.1	6	6	52	1.1	U	1.1	U	1.1	U	1.1	U	1.2		1.1	U
Sodium	UG/L	114000	98%		0	51	52	114000		24800		955		29000		29300		28000	
Thallium	UG/L	6.5	4%	8	0	2	52	6	U	6	U	6	U	6	U	6	U	6	U
Vanadium	UG/L	7.2	13%	14	0	7	52	1.2	U	1.2	U	7.2		1.2	U	1.2	U	1.2	U
Zinc	UG/L	105	100%	159.63864	0	52	52	13.4		12.7		104		15.2		16.1		12.7	
ADDITIONAL ANALYSES																			
Ammonia-Nitrogen	MG/L	0.22	100%		0	60	60	0.05		0.02		0.22		0.03		0.01		0.02	
Nitrate/Nitrite	%W/W	1.38	100%		0	47	47	0.01		0.01		0.16		0.01				0.02	
Nitrate/Nitrite	MG/KG	0.68	100%		0	11	11												
Total Dissolved Solids	MG/L	622	100%		0	58	58	119		190		127		257				261	
TOC--Soil 9060	MG/KG	6.3	100%		0	11	11												
Total Suspended Solids	MG/L	710	100%		0	58	58	2.7		2.3		384		0.8				1.6	
Phosphate, Total as P	MG/L	0.91	100%		0	58	58	0.16		0.02		0.91		0.02				0.02	
Alkalinity	MG/L	288	100%		0	58	58	276		160		25		172				168	
Total Hardness as CaCO3	MG/L	395	100%		0	58	58	390		152		96		152				204	
TOC--Water 415.1	MG/L	16.4	100%		0	17	17	3.21		2.41									
pH		8.4	100%		0	57	57			6.77		6.5		6.5		6.5		6.87	

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-38		SW12-39		SW12-40		SW12-41		SW12-42		SW12-43	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12027		12026		12010		12009		12044		12051	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								4-Nov-97		4-Nov-97		28-Oct-97		28-Oct-97		6-Nov-97		9-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
VOLATILE ORGANICS																			
1,1,1-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropan	UG/L	0	0%		0	0	48	1	UJ	1	UJ	1	U	1	U	1	U	1	U
1,2-Dibromoethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (total)	UG/L	0	0%		0	0	4												
1,2-Dichloropropane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Acetone	UG/L	10	6%		0	3	52	5	U	5	U	5	UJ	5	UJ	5	U	5	U
Benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	U	1	U	1	U	1	U
Carbon disulfide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chlorodibromomethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	UJ	1	UJ	1	U	1	U
Chloroform	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Ethyl benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl bromide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl butyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methyl chloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Methyl ethyl ketone	UG/L	0	0%		0	0	52	5	UJ	5	UJ	5	U	5	U	5	U	5	U
Methyl isobutyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Methylene chloride	UG/L	0	0%		0	0	52	2	U	2	U	2	U	2	U	2	U	2	U
Styrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-38		SW12-39		SW12-40		SW12-41		SW12-42		SW12-43	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12027		12026		12010		12009		12044		12051	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								4-Nov-97		4-Nov-97		28-Oct-97		28-Oct-97		6-Nov-97		9-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU																	
Toluene	UG/L	0.4	2%	6000	0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Total Xylenes	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	UG/L	1	2%	40	0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl chloride	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	U	1	U	1	U	1	U
SEMI VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0%		0	0	4												
2,4,5-Trichlorophenol	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.6	U	2.6	U	2.5	U	2.6	U
2,4,6-Trichlorophenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dichlorophenol	UG/L	0	0%	1	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dimethylphenol	UG/L	0	0%	1000	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,4-Dinitrophenol	UG/L	0	0%	400	0	0	52	2.5	U	2.5	U	2.6	UJ	2.6	UJ	2.5	U	2.6	UJ
2,4-Dinitrotoluene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2,6-Dinitrotoluene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Chloronaphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Chlorophenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Methylnaphthalene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
2-Nitroaniline	UG/L	0	0%		0	0	52	2.5	U	2.5	U	2.6	U	2.6	U	2.5	U	2.6	U
2-Nitrophenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	UJ
3,3'-Dichlorobenzidine	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ
3-Nitroaniline	UG/L	0	0%		0	0	52	2.5	UJ	2.5	UJ	2.6	UJ	2.6	UJ	2.5	UJ	2.6	U
4,6-Dinitro-2-methylphenol	UG/L	0	0%		0	0	52	2.5	UJ	2.5	UJ	2.6	U	2.6	U	2.5	U	2.6	U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Chloroaniline	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	UJ	1	U
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Methylphenol	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
4-Nitroaniline	UG/L	0	0%		0	0	52	2.5	UJ	2.5	UJ	2.6	U	2.6	U	2.5	U	2.6	UJ
4-Nitrophenol	UG/L	0	0%		0	0	52	2.5	UJ	2.5	UJ	2.6	U	2.6	U	2.5	U	2.6	U
Acenaphthene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-38		SW12-39		SW12-40		SW12-41		SW12-42		SW12-43	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12027		12026		12010		12009		12044		12051	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								4-Nov-97		4-Nov-97		28-Oct-97		28-Oct-97		6-Nov-97		9-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Acenaphthylene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Anthracene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(a)anthracene	UG/L	0.5	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(a)pyrene	UG/L	0.6	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(ghi)perylene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Benzo(k)fluoranthene	UG/L	1	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Chloroethyl)ether	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U	1	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	12	8%	0.6	2	4	52	1	U	1	U	1	U	1	U	0.28	J	1	U
Butylbenzylphthalate	UG/L	0.2	19%		0	10	52	0.16	J	1	U	1	U	1	U	1	U	1	UJ
Carbazole	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	UJ	1	UJ	1	UJ	1	U
Chrysene	UG/L	0.5	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U
Di-n-butylphthalate	UG/L	2	12%		0	6	52	1	U	1	U	1	U	1	U	1	U	1	U
Di-n-octylphthalate	UG/L	0	0%		0	0	52	1	U	1	U	1	UJ	1	UJ	1	U	1	U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Dibenzofuran	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Diethyl phthalate	UG/L	0.46	21%		0	11	52	1	U	1	U	0.068	J	1	U	0.11	J	1	U
Dimethylphthalate	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Fluoranthene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Fluorene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobenzene	UG/L	0	0%	0.00003	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobutadiene	UG/L	0	0%	0.01	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorocyclopentadiene	UG/L	0	0%	0.45	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Hexachloroethane	UG/L	0	0%	0.6	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Isophorone	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	UG/L	0	0%		0	0	52	1	UJ	1	UJ	1	U	1	U	1	U	1	U
Nitrobenzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Pentachlorophenol	UG/L	2	2%	12.6	0	1	52	2.5	U	2.5	U	2.6	U	2.6	U	2.5	U	2.6	U
Phenanthrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Phenol	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U	1	U	1	U
Pyrene	UG/L	1	2%		0	1	52	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-38		SW12-39		SW12-40		SW12-41		SW12-42		SW12-43	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12027		12026		12010		12009		12044		12051	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								4-Nov-97		4-Nov-97		28-Oct-97		28-Oct-97		6-Nov-97		9-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID								RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
PESTICIDES/PCBS																			
4,4'-DDD	UG/L	0	0%	0.00008	0	0	52	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U
4,4'-DDE	UG/L	0.0056	2%	0.000007	1	1	52	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U
4,4'-DDT	UG/L	0.062	2%	0.00001	1	1	52	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U
Aldrin	UG/L	0.0041	2%	0.001	1	1	52	0.005	U	0.005	U	0.005	U	0.0055	U	0.0051	U	0.005	U
Alpha-BHC	UG/L	0.09	19%		0	10	52	0.005	U	0.012		0.005	U	0.0055	U	0.0051	U	0.005	U
Alpha-Chlordane	UG/L	0.0036	2%		0	1	52	0.005	U	0.005	U	0.005	U	0.0055	U	0.0051	U	0.005	U
Aroclor-1016	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1221	UG/L	0	0%	0.000001	0	0	52	0.2	U	0.2	U	0.2	U	0.22	U	0.2	U	0.2	U
Aroclor-1232	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1242	UG/L	0.44	4%		0	2	52	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1248	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1254	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1260	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U
Beta-BHC	UG/L	0.017	10%		0	5	52	0.005	U	0.005	U	0.005	U	0.0055	U	0.0051	U	0.005	U
Delta-BHC	UG/L	0.0046	6%		0	3	52	0.005	U	0.0046	J	0.005	U	0.0029	J	0.0051	U	0.005	U
Dieldrin	UG/L	0	0%	0.0000006	0	0	52	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U
Endosulfan I	UG/L	0	0%	0.009	0	0	52	0.005	U	0.005	U	0.005	U	0.0055	U	0.0051	U	0.005	U
Endosulfan II	UG/L	0	0%	0.009	0	0	52	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U
Endosulfan sulfate	UG/L	0	0%		0	0	52	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U
Endrin	UG/L	0	0%	0.002	0	0	52	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U
Endrin aldehyde	UG/L	0.012	4%		0	2	52	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U
Endrin ketone	UG/L	0.015	2%		0	1	52	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U
Gamma-BHC/Lindane	UG/L	0.092	10%		0	5	52	0.005	U	0.0058		0.005	U	0.0055	U	0.0051	U	0.005	U
Gamma-Chlordane	UG/L	0	0%		0	0	52	0.005	U	0.005	U	0.005	U	0.0055	U	0.0051	U	0.005	U
Heptachlor	UG/L	0.0063	6%	0.0002	3	3	52	0.005	U	0.005	U	0.005	U	0.0055	U	0.0051	U	0.005	U
Heptachlor epoxide	UG/L	0.0033	4%	0.0003	2	2	52	0.005	U	0.005	U	0.005	U	0.0055	U	0.0051	U	0.005	U
Hexachlorobenzene	UG/L	0.02	6%	0.00003	3	3	48	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U
Methoxychlor	UG/L	0	0%	0.03	0	0	52	0.05	U	0.05	U	0.05	U	0.055	U	0.051	U	0.05	U
Toxaphene	UG/L	0	0%	0.000006	0	0	52	0.5	U	0.5	U	0.5	U	0.55	U	0.51	U	0.5	U
METALS																			
Aluminum	UG/L	3430	83%	100	19	43	52	42.7		38.5		73.4		21.9	U	21.9	U	**144**	
Antimony	UG/L	0	0%		0	0	52	2.9	U	2.9	U	2.9	U	2.9	U	2.9	U	3.5	U
Arsenic	UG/L	3.8	10%	150	0	5	52	2.5	U	2.5	U	3		2.5	U	2.5	U	3.6	U
Barium	UG/L	115	100%		0	52	52	27.6		29.4		46.4		111		48.3		25.7	
Beryllium	UG/L	0.18	8%	1100	0	4	52	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-38		SW12-39		SW12-40		SW12-41		SW12-42		SW12-43	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12027		12026		12010		12009		12044		12051	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								4-Nov-97		4-Nov-97		28-Oct-97		28-Oct-97		6-Nov-97		9-Nov-97	
QC_CODE								SA		SA		SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU																	
Cadmium	UG/L	2.1	13%	3.845011	0	7	52	0.4		0.4	U	0.4	U	0.4	U	0.4	U	0.34	
Calcium	UG/L	130000	98%		0	51	52	51100		52800		66000		110000		88900		47800	
Chromium	UG/L	3.3	21%	139.78605	0	11	52	0.9	U	0.9	U	0.9	U	0.9	U	0.9	U	1.1	U
Cobalt	UG/L	6	13%	5	1	7	52	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.7	U
Copper	UG/L	27.6	56%	17.362284	2	29	52	3.3		1.8		1.1	U	1.1	U	3.9		3	
Cyanide	UG/L	0	0%	5.2	0	0	52	5	U	5	U	5	U	5	U	5	U	5	U
Iron	UG/L	6830	92%	300	12	48	52	77.6		64.5		206		22.2		31.8		185	
Lead	UG/L	35.4	8%	1.4624632	4	4	52	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.8	U
Magnesium	UG/L	18600	100%		0	52	52	7500		7790		11400		18600		10300		5360	
Manganese	UG/L	1320	96%		0	50	52	2.1		2.4		57.8		5.1		4.2		2.2	
Mercury	UG/L	0.11	10%	0.0007	5	5	52	0.1	U	0.1	U	1	U	1	U	0.1	U	0.1	U
Nickel	UG/L	19.7	52%	100.16198	0	27	52	0.9	U	0.9	U	1.8		0.9	U	0.9	U	2.1	U
Potassium	UG/L	11800	98%		0	51	52	3000		3470		6260		4430		4030		3660	
Selenium	UG/L	0	0%	4.6	0	0	52	4	U	4	U	4	U	4	U	4	U	4.7	U
Silver	UG/L	1.6	12%	0.1	6	6	52	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	2.1	U
Sodium	UG/L	114000	98%		0	51	52	18300		17100		51600		47700		7060		2960	
Thallium	UG/L	6.5	4%	8	0	2	52	6	U	6	U	6	U	6	U	6	U	6.3	U
Vanadium	UG/L	7.2	13%	14	0	7	52	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U	1.6	U
Zinc	UG/L	105	100%	159.63864	0	52	52	20.4		9		24.5		9.9		11.6		8.5	
ADDITIONAL ANALYSES																			
Ammonia-Nitrogen	MG/L	0.22	100%		0	60	60	0.03		0.02		0.15		0.02		0.04		0.02	
Nitrate/Nitrite	%W/W	1.38	100%		0	47	47	0.06		0.01		0.65		0.02		0.01		0.01	
Nitrate/Nitrite	MG/KG	0.68	100%		0	11	11												
Total Dissolved Solids	MG/L	622	100%		0	58	58	208		234		417		557		326		187	
TOC--Soil 9060	MG/KG	6.3	100%		0	11	11												
Total Suspended Solids	MG/L	710	100%		0	58	58	1.6		1		2.9		3.68		2.9		2	
Phosphate, Total as P	MG/L	0.91	100%		0	58	58	0.03		0.04		0.06		0.02		0.02		0.01	
Alkalinity	MG/L	288	100%		0	58	58	138		136		182		288		204		128	
Total Hardness as CaCO3	MG/L	395	100%		0	58	58	172		156		220		360		262		142	
TOC--Water 415.1	MG/L	16.4	100%		0	17	17					4.69		1					
pH		8.4	100%		0	57	57	6.77		7.74		7.8		7.59		7.9		7.82	

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-44		SW12-45		SW12-46		SW12-47	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12064		12050		12043		12046	
SAMP_DEPTH_TOP								0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A	
SAMP_DATE								5-Dec-97		9-Nov-97		6-Nov-97		7-Nov-97	
QC_CODE								SA		SA		SA		SA	
STUDY_ID			FREQUENCY	NYS AWQS	NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	OF DETECTION	CLASS C (AQUATIC)	ABOVE CLASS C	OF DETECTS	OF ANALYSES								
VOLATILE ORGANICS															
1,1,1-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
1,1-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
1,1-Dichloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropan	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U
1,2-Dibromoethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U
1,2-Dichloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
1,2-Dichloroethene (total)	UG/L	0	0%		0	0	4								
1,2-Dichloropropane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	48	1	U	1	U	1	U	1	U
Acetone	UG/L	10	6%		0	3	52	5	U	5	U	5	UJ	5	U
Benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Bromochloromethane	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U
Bromodichloromethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Bromoform	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	UJ
Carbon disulfide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Chlorobenzene	UG/L	0	0%	5	0	0	52	1	U	1	U	1	U	1	U
Chlorodibromomethane	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Chloroethane	UG/L	0	0%		0	0	52	1	U	1	U	1	UJ	1	U
Chloroform	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Ethyl benzene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Methyl bromide	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Methyl butyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U
Methyl chloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Methyl ethyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	UJ	5	U
Methyl isobutyl ketone	UG/L	0	0%		0	0	52	5	U	5	U	5	U	5	U
Methylene chloride	UG/L	0	0%		0	0	52	2	U	2	U	2	U	2	U
Styrene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Tetrachloroethene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-44		SW12-45		SW12-46		SW12-47	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12064		12050		12043		12046	
SAMP_DEPTH_TOP								0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A	
SAMP_DATE								5-Dec-97		9-Nov-97		6-Nov-97		7-Nov-97	
QC_CODE								SA		SA		SA		SA	
STUDY_ID			FREQUENCY	NYS AWQS	NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU	OF DETECTION	CLASS C (AQUATIC)	ABOVE CLASS C	OF DETECTS	OF ANALYSES								
Toluene	UG/L	0.4	2%	6000	0	1	52	1	U	1	U	1	U	1	U
Total Xylenes	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0%		0	0	48	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
Trichloroethene	UG/L	1	2%	40	0	1	52	1	U	1	U	1	U	1	U
Vinyl chloride	UG/L	0	0%		0	0	52	1	U	1	U	1	U	1	U
SEMI VOLATILE ORGANICS															
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	52	2.1	U	1	U	1.1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	52	2.1	U	1	U	1.1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	52	2.1	U	1	U	1.1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	52	2.1	U	1	U	1.1	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0%		0	0	4								
2,4,5-Trichlorophenol	UG/L	0	0%		0	0	52	5.3	U	2.5	U	2.7	U	2.6	U
2,4,6-Trichlorophenol	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
2,4-Dichlorophenol	UG/L	0	0%	1	0	0	52	2.1	U	1	U	1.1	U	1	U
2,4-Dimethylphenol	UG/L	0	0%	1000	0	0	52	2.1	U	1	U	1.1	U	1	U
2,4-Dinitrophenol	UG/L	0	0%	400	0	0	52	5.3	UJ	2.5	UJ	2.7	U	2.6	UJ
2,4-Dinitrotoluene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
2,6-Dinitrotoluene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
2-Chloronaphthalene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
2-Chlorophenol	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
2-Methylnaphthalene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
2-Methylphenol	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
2-Nitroaniline	UG/L	0	0%		0	0	52	5.3	UJ	2.5	U	2.7	U	2.6	U
2-Nitrophenol	UG/L	0	0%		0	0	52	2.1	U	1	UJ	1.1	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0%		0	0	52	2.1	UJ	1	UJ	1.1	UJ	1	UJ
3-Nitroaniline	UG/L	0	0%		0	0	52	5.3	UJ	2.5	U	2.7	UJ	2.6	UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0%		0	0	52	5.3	U	2.5	U	2.7	U	2.6	U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
4-Chloroaniline	UG/L	0	0%		0	0	52	2.1	UJ	1	U	1.1	UJ	1	U
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
4-Methylphenol	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
4-Nitroaniline	UG/L	0	0%		0	0	52	5.3	UJ	2.5	UJ	2.7	U	2.6	UJ
4-Nitrophenol	UG/L	0	0%		0	0	52	5.3	U	2.5	U	2.7	U	2.6	U
Acenaphthene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-44		SW12-45		SW12-46		SW12-47	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12064		12050		12043		12046	
SAMP_DEPTH_TOP								0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A	
SAMP_DATE								5-Dec-97		9-Nov-97		6-Nov-97		7-Nov-97	
QC_CODE								SA		SA		SA		SA	
STUDY_ID			FREQUENCY	NYS AWQS	NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU	OF DETECTION	CLASS C (AQUATIC)	ABOVE CLASS C	OF DETECTS	OF ANALYSES								
Acenaphthylene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Anthracene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Benzo(a)anthracene	UG/L	0.5	2%		0	1	52	2.1	U	1	U	1.1	U	1	U
Benzo(a)pyrene	UG/L	0.6	2%		0	1	52	2.1	U	1	U	1.1	U	1	U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Benzo(ghi)perylene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Benzo(k)fluoranthene	UG/L	1	2%		0	1	52	2.1	U	1	U	1.1	U	1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Bis(2-Chloroethyl)ether	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%		0	0	48	2.1	U	1	U	1.1	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	12	8%	0.6	2	4	52	12	J	1	U	1	U	1	U
Butylbenzylphthalate	UG/L	0.2	19%		0	10	52	2.1	U	1	UJ	1.1	U	1	U
Carbazole	UG/L	0	0%		0	0	52	2.1	UJ	1	U	1.1	UJ	1	UJ
Chrysene	UG/L	0.5	2%		0	1	52	2.1	U	1	U	1.1	U	1	U
Di-n-butylphthalate	UG/L	2	12%		0	6	52	2.1	U	1	U	1.1	U	1	U
Di-n-octylphthalate	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Dibenzofuran	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Diethyl phthalate	UG/L	0.46	21%		0	11	52	2.1	U	1	U	0.065	J	1	U
Dimethylphthalate	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Fluoranthene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Fluorene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Hexachlorobenzene	UG/L	0	0%	0.00003	0	0	52	2.1	U	1	U	1.1	U	1	U
Hexachlorobutadiene	UG/L	0	0%	0.01	0	0	52	2.1	U	1	U	1.1	U	1	U
Hexachlorocyclopentadiene	UG/L	0	0%	0.45	0	0	52	2.1	U	1	U	1.1	U	1	U
Hexachloroethane	UG/L	0	0%	0.6	0	0	52	2.1	U	1	U	1.1	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Isophorone	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Naphthalene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Nitrobenzene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Pentachlorophenol	UG/L	2	2%	12.6	0	1	52	5.3	UJ	2.5	U	2.7	U	2.6	U
Phenanthrene	UG/L	0	0%		0	0	52	2.1	U	1	U	1.1	U	1	U
Phenol	UG/L	0	0%	5	0	0	52	2.1	U	1	U	1.1	U	1	U
Pyrene	UG/L	1	2%		0	1	52	2.1	U	1	U	1.1	U	1	U

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-44		SW12-45		SW12-46		SW12-47	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12064		12050		12043		12046	
SAMP_DEPTH_TOP								0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A	
SAMP_DATE								5-Dec-97		9-Nov-97		6-Nov-97		7-Nov-97	
QC_CODE								SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMU													
PESTICIDES/PCBS															
4,4'-DDD	UG/L	0	0%	0.00008	0	0	52	0.01	U	0.01	U	0.012	U	0.01	U
4,4'-DDE	UG/L	0.0056	2%	0.000007	1	1	52	0.01	U	0.0056	J	0.012	U	0.01	U
4,4'-DDT	UG/L	0.062	2%	0.00001	1	1	52	0.01	U	0.062		0.012	U	0.01	U
Aldrin	UG/L	0.0041	2%	0.001	1	1	52	0.0053	U	0.0051	U	0.006	U	0.0052	U
Alpha-BHC	UG/L	0.09	19%		0	10	52	0.0053	U	0.0051	U	0.006	U	0.0052	U
Alpha-Chlordane	UG/L	0.0036	2%		0	1	52	0.0053	U	0.0051	U	0.006	U	0.0052	U
Aroclor-1016	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.12	U	0.1	U
Aroclor-1221	UG/L	0	0%	0.000001	0	0	52	0.21	U	0.2	U	0.24	U	0.21	U
Aroclor-1232	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.12	U	0.1	U
Aroclor-1242	UG/L	0.44	4%		0	2	52	0.1	U	0.1	U	0.12	U	0.1	U
Aroclor-1248	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.12	U	0.1	U
Aroclor-1254	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.12	U	0.1	U
Aroclor-1260	UG/L	0	0%	0.000001	0	0	52	0.1	U	0.1	U	0.12	U	0.1	U
Beta-BHC	UG/L	0.017	10%		0	5	52	0.0053	U	0.0051	U	0.006	U	0.0052	U
Delta-BHC	UG/L	0.0046	6%		0	3	52	0.0053	U	0.0051	U	0.006	U	0.0052	U
Dieldrin	UG/L	0	0%	0.0000006	0	0	52	0.01	U	0.01	U	0.012	U	0.01	U
Endosulfan I	UG/L	0	0%	0.009	0	0	52	0.0053	U	0.0051	U	0.006	U	0.0052	U
Endosulfan II	UG/L	0	0%	0.009	0	0	52	0.01	U	0.01	U	0.012	U	0.01	U
Endosulfan sulfate	UG/L	0	0%		0	0	52	0.01	U	0.01	U	0.012	U	0.01	U
Endrin	UG/L	0	0%	0.002	0	0	52	0.01	U	0.01	U	0.012	U	0.01	U
Endrin aldehyde	UG/L	0.012	4%		0	2	52	0.01	U	0.01	U	0.012	U	0.01	U
Endrin ketone	UG/L	0.015	2%		0	1	52	0.015		0.01	U	0.012	U	0.01	U
Gamma-BHC/Lindane	UG/L	0.092	10%		0	5	52	0.0053	U	0.0051	U	0.006	U	0.0052	U
Gamma-Chlordane	UG/L	0	0%		0	0	52	0.01	U	0.0051	U	0.006	U	0.0052	U
Heptachlor	UG/L	0.0063	6%	0.0002	3	3	52	0.0053	U	0.0051	U	0.006	U	0.0052	U
Heptachlor epoxide	UG/L	0.0033	4%	0.0003	2	2	52	0.0053	U	0.0051	U	0.006	U	0.0052	U
Hexachlorobenzene	UG/L	0.02	6%	0.00003	3	3	48	0.01	U	0.01	U	0.012	U	0.01	U
Methoxychlor	UG/L	0	0%	0.03	0	0	52	0.053	U	0.051	U	0.06	U	0.052	U
Toxaphene	UG/L	0	0%	0.000006	0	0	52	0.53	U	0.51	U	0.6	U	0.52	U
METALS															
Aluminum	UG/L	3430	83%	100	19	43	52	12.3	U	16.3		1050		1660	
Antimony	UG/L	0	0%		0	0	52	3.5	U	3.5	U	2.9	U	3.5	U
Arsenic	UG/L	3.8	10%	150	0	5	52	3.6	U	3.6	U	2.8		3.8	
Barium	UG/L	115	100%		0	52	52	37.2	J	20.3		64.8		52.7	
Beryllium	UG/L	0.18	8%	1100	0	4	52	0.15	J	0.1	U	0.1	U	0.12	

TABLE I-2
SITE METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-44		SW12-45		SW12-46		SW12-47	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12064		12050		12043		12046	
SAMP_DEPTH_TOP								0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A	
SAMP_DATE								5-Dec-97		9-Nov-97		6-Nov-97		7-Nov-97	
QC_CODE								SA		SA		SA		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMU													
Cadmium	UG/L	2.1	13%	3.845011	0	7	52	0.3	U	0.3	U	0.4	U	0.91	
Calcium	UG/L	130000	98%		0	51	52	79200		46500		97100		106000	
Chromium	UG/L	3.3	21%	139.78605	0	11	52	2.4	J	1.1	U	1.5		1.1	U
Cobalt	UG/L	6	13%	5	1	7	52	1.7	U	1.7	U	1.5		1.7	U
Copper	UG/L	27.6	56%	17.362284	2	29	52	2.3	U	3		7.2		7.1	
Cyanide	UG/L	0	0%	5 2	0	0	52	5	U	5	U	5	U	5	U
Iron	UG/L	6830	92%	300	12	48	52	49.2	J	38		[redacted]	J	[redacted]	
Lead	UG/L	35.4	8%	1.4624632	4	4	52	1.8	U	1.8	U	1.7	U	2.3	
Magnesium	UG/L	18600	100%		0	52	52	9240		5170		13100		16700	
Manganese	UG/L	1320	96%		0	50	52	0.5	J	0.72		410		158	
Mercury	UG/L	0.11	10%	0.0007	5	5	52	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	UG/L	19.7	52%	100.16198	0	27	52	2.3	U	2.1	U	3.3		4.4	
Potassium	UG/L	11800	98%		0	51	52	2640	J	1640		1760		3800	
Selenium	UG/L	0	0%	4.6	0	0	52	4.7	U	4.7	U	4	U	4.7	U
Silver	UG/L	1.6	12%	0.1	6	6	52	2.1	U	2.1	U	1.1	U	2.1	U
Sodium	UG/L	114000	98%		0	51	52	5630		6370		3420		4360	
Thallium	UG/L	6.5	4%	8	0	2	52	6.3	U	6.3	U	6.5		6.3	U
Vanadium	UG/L	7.2	13%	14	0	7	52	1.6	U	1.6	U	1.2	U	3.1	
Zinc	UG/L	105	100%	159.63864	0	52	52	8.9	J	23.8		37.8		33.6	
ADDITIONAL ANALYSES															
Ammonia-Nitrogen	MG/L	0.22	100%		0	60	60	0.02		0.02		0.11		0.05	
Nitrate/Nitrite	%W/W	1.38	100%		0	47	47			0.17		0.01		0.01	
Nitrate/Nitrite	MG/KG	0.68	100%		0	11	11	0.03							
Total Dissolved Solids	MG/L	622	100%		0	58	58	262		168		386		434	
TOC--Soil 9060	MG/KG	6.3	100%		0	11	11	2.84							
Total Suspended Solids	MG/L	710	100%		0	58	58	0.7		0.5		710		18	
Phosphate, Total as P	MG/L	0.91	100%		0	58	58	0.02		0.03		0.5		0.07	
Alkalinity	MG/L	288	100%		0	58	58	185		112		212		168	
Total Hardness as CaCO3	MG/L	395	100%		0	58	58	220		156		328		372	
TOC--Water 415.1	MG/L	16.4	100%		0	17	17								
pH		8.4	100%		0	57	57	7.21				7.73		7.69	

TABLE I-3
DOWNGRADIENT METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-48		SW12-49		SW12-50		SW12-51		SW12-51		SW12-52	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12062		12061		12060		12059		12210		12069	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97		10-Dec-97	
QC_CODE								SA		SA		SA		SA		DU		SA	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM																	
VOLATILE ORGANICS																			
1,1,1-Trichloroethane	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropan	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	11			1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	11			1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	11			1	U	1	U	1	U	1	U	1	U
Acetone	UG/L	0	0%		0	0	11			5	U	5	U	5	U	5	U	5	U
Benzene	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Bromochloromethane	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Bromoform	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Carbon disulfide	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Chlorobenzene	UG/L	0	0%	5	0	0	11			1	U	1	U	1	U	1	U	1	U
Chlorodibromomethane	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Chloroethane	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Chloroform	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Ethyl benzene	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Methyl bromide	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Methyl butyl ketone	UG/L	0	0%		0	0	11			5	U	5	U	5	U	5	U	5	U
Methyl chloride	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Methyl ethyl ketone	UG/L	0	0%		0	0	11			5	U	5	U	5	U	5	U	5	U
Methyl isobutyl ketone	UG/L	0	0%		0	0	11			5	U	5	U	5	U	5	U	5	U
Methylene chloride	UG/L	0	0%		0	0	11			2	U	2	U	2	U	2	U	2	U
Styrene	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Toluene	UG/L	0	0%	6000	0	0	11			1	U	1	U	1	U	1	U	1	U

TABLE I-3
DOWNGRADIENT METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-48		SW12-49		SW12-50		SW12-51		SW12-51		SW12-52	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12062		12061		12060		12059		12210		12069	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97		10-Dec-97	
QC_CODE								SA		SA		SA		SA		DU		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Total Xylenes	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
Trichloroethene	UG/L	0	0%	40	0	0	11			1	U	1	U	1	U	1	U	1	U
Vinyl chloride	UG/L	0	0%		0	0	11			1	U	1	U	1	U	1	U	1	U
SEMI VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
2,4,5-Trichlorophenol	UG/L	0	0%		0	0	12	2.6	UJ	2.7	U	2.6	U	2.6	U	2.5	U	2.6	U
2,4,6-Trichlorophenol	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
2,4-Dichlorophenol	UG/L	0	0%	1	0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
2,4-Dimethylphenol	UG/L	0	0%	1000	0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
2,4-Dinitrophenol	UG/L	0	0%	400	0	0	12	2.6	UJ	2.7	U	2.6	U	2.6	U	2.5	U	2.6	U
2,4-Dinitrotoluene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
2,6-Dinitrotoluene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
2-Chloronaphthalene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
2-Chlorophenol	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
2-Methylnaphthalene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
2-Methylphenol	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
2-Nitroaniline	UG/L	0	0%		0	0	12	2.6	UJ	2.7	U	2.6	U	2.6	U	2.5	U	2.6	U
2-Nitrophenol	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0%		0	0	12	1	UJ	1.1	UJ	1	UJ	1.1	UJ	1	U	1	U
3-Nitroaniline	UG/L	0	0%		0	0	12	2.6	UJ	2.7	UJ	2.6	UJ	2.6	UJ	2.5	U	2.6	UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0%		0	0	12	2.6	UJ	2.7	U	2.6	U	2.6	U	2.5	U	2.6	U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
4-Chloroaniline	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	UJ
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
4-Methylphenol	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
4-Nitroaniline	UG/L	0	0%		0	0	12	2.6	UJ	2.7	UJ	2.6	UJ	2.6	UJ	2.5	U	2.6	UJ
4-Nitrophenol	UG/L	0	0%		0	0	12	2.6	UJ	2.7	U	2.6	U	2.6	U	2.5	U	2.6	U
Acenaphthene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Acenaphthylene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Anthracene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U

TABLE I-3
DOWNGRADIENT METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-48		SW12-49		SW12-50		SW12-51		SW12-51		SW12-52	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12062		12061		12060		12059		12210		12069	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97		10-Dec-97	
QC_CODE								SA		SA		SA		SA		DU		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Benzo(a)anthracene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Benzo(a)pyrene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Benzo(ghi)perylene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Benzo(k)fluoranthene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Bis(2-Chloroethyl)ether	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	0.26	17%	0.6	0	2	12	0.14	J	1.1	U	1	U	1.1	U	0.26	J	1	U
Butylbenzylphthalate	UG/L	0.12	17%		0	2	12	1	UJ	1.1	U	1	U	1.1	U	1	U	0.11	J
Carbazole	UG/L	0	0%		0	0	12	1	UJ	1.1	UJ	1	UJ	1.1	UJ	1	U	1	UJ
Chrysene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Di-n-butylphthalate	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Di-n-octylphthalate	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Dibenzofuran	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Diethyl phthalate	UG/L	0.072	17%		0	2	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Dimethylphthalate	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Fluoranthene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Fluorene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Hexachlorobenzene	UG/L	0	0%	0.00003	0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Hexachlorobutadiene	UG/L	0	0%	0.01	0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	UJ
Hexachlorocyclopentadiene	UG/L	0	0%	0.45	0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	UJ
Hexachloroethane	UG/L	0	0%	0.6	0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Isophorone	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Naphthalene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Nitrobenzene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Pentachlorophenol	UG/L	0	0%	12.6	0	0	12	2.6	UJ	2.7	U	2.6	U	2.6	U	2.5	U	2.6	U
Phenanthrene	UG/L	0	0%		0	0	12	1	UJ	1.1	U	1	U	1.1	U	1	U	1	U
Phenol	UG/L	0	0%	5	0	0	12	1	U	1.1	U	1	U	1.1	U	1	U	1	U
Pyrene	UG/L	0	0%		0	0	12	1	U	1.1	U	1	U	1.1	U	1	U	0.005	U
PESTICIDES/PCBS																			
4,4'-DDD	UG/L	0	0%	0.00008	0	0	12	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U

TABLE I-3
DOWNGRADIENT METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOC_ID								SW12-48		SW12-49		SW12-50		SW12-51		SW12-51		SW12-52	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER	
SAMP_ID								12062		12061		12060		12059		12210		12069	
SAMP_DEPTH_TOP								0		0		0		0		0		0	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A	
SAMP_DATE								11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97		10-Dec-97	
QC_CODE								SA		SA		SA		SA		DU		SA	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1
PARAMETER	UNIT	MAXIMUM	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
4,4'-DDE	UG/L	0	0%	0.000007	0	0	12	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
4,4'-DDT	UG/L	0	0%	0.00001	0	0	12	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Aldrin	UG/L	0	0%	0.001	0	0	12	0.005	U	0.0051	U	0.0051	U	0.005	U	0.005	U	0.0051	U
Alpha-BHC	UG/L	0	0%		0	0	12	0.005	U	0.0051	U	0.0051	U	0.005	U	0.005	U	0.0051	U
Alpha-Chlordane	UG/L	0	0%		0	0	12	0.005	U	0.0051	U	0.0051	U	0.005	U	0.005	U	0.0051	U
Aroclor-1016	UG/L	0	0%	0.000001	0	0	12	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1221	UG/L	0	0%	0.000001	0	0	12	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Aroclor-1232	UG/L	0	0%	0.000001	0	0	12	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1242	UG/L	0	0%		0	0	12	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1248	UG/L	0	0%	0.000001	0	0	12	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1254	UG/L	0	0%	0.000001	0	0	12	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Aroclor-1260	UG/L	0	0%	0.000001	0	0	12	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Beta-BHC	UG/L	0	0%		0	0	12	0.005	U	0.0051	U	0.0051	U	0.005	U	0.005	U	0.0051	U
Delta-BHC	UG/L	0	0%		0	0	12	0.005	U	0.0051	U	0.0051	U	0.005	U	0.005	U	0.0051	U
Dieldrin	UG/L	0	0%	0.0000006	0	0	12	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Endosulfan I	UG/L	0	0%	0.009	0	0	12	0.005	U	0.0051	U	0.0051	U	0.005	U	0.005	U	0.0051	U
Endosulfan II	UG/L	0	0%	0.009	0	0	12	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Endosulfan sulfate	UG/L	0	0%		0	0	12	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Endrin	UG/L	0	0%	0.002	0	0	12	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Endrin aldehyde	UG/L	0	0%		0	0	12	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Endrin ketone	UG/L	0	0%		0	0	12	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Gamma-BHC/Lindane	UG/L	0	0%		0	0	12	0.005	U	0.0051	U	0.0051	U	0.005	U	0.005	U	0.0051	U
Gamma-Chlordane	UG/L	0	0%		0	0	12	0.005	U	0.0051	U	0.0051	U	0.005	U	0.005	U	0.0051	U
Heptachlor	UG/L	0	0%	0.0002	0	0	12	0.005	U	0.0051	U	0.0051	U	0.005	U	0.005	U	0.0051	U
Heptachlor epoxide	UG/L	0	0%	0.0003	0	0	12	0.005	U	0.0051	U	0.0051	U	0.005	U	0.005	U	0.0051	U
Hexachlorobenzene	UG/L	0.013	8%	0.00003	1	1	12	0.013		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Methoxychlor	UG/L	0	0%	0.03	0	0	12	0.05	U	0.051	U	0.051	U	0.05	U	0.05	U	0.051	U
Toxaphene	UG/L	0	0%	0.000006	0	0	12	0.5	U	0.51	U	0.51	U	0.5	U	0.5	U	0.51	U
METALS																			
Aluminum	UG/L	79.9	42%	100	0	5	12	12.3	U	79.9		28.5		54.1		74.5		49.6	J
Antimony	UG/L	0	0%		0	0	12	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U	3.5	U
Arsenic	UG/L	0	0%	150	0	0	12	3.6	U	3.6	U	3.6	U	3.6	U	3.6	U	3.6	U
Barium	UG/L	53.2	100%		0	12	12	43		42.9		40.4		42.5		42.2		53.2	J
Beryllium	UG/L	0.21	67%	1100	0	8	12	0.1		0.21		0.18		0.11		0.1	U	0.1	U
Cadmium	UG/L	1.2	42%	3.845011	0	5	12	0.3	U	1.2		0.78		0.45		0.3	U	0.3	U
Calcium	UG/L	98400	100%		0	12	12	88300		84100		82500		85600		83800		98400	

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DOWNGRADIENT METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12
LOC_ID								SW12-48		SW12-49		SW12-50		SW12-51		SW12-51		SW12-52
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER
SAMP_ID								12062		12061		12060		12059		12210		12069
SAMP_DEPTH_TOP								0		0		0		0		0		0
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		N/A
SAMP_DATE								11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97		11-Nov-97		10-Dec-97
QC_CODE								SA		SA		SA		SA		DU		SA
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1
PARAMETER	UNIT	MAXIMUM	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES											
Chromium	UG/L	0	0%	139.78605	0	0	12	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Cobalt	UG/L	0	0%	5	0	0	12	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
Copper	UG/L	2.6	8%	17.362284	0	1	12	2.6		2.3	U	2.3	U	2.3	U	2.3	U	2.3	U
Cyanide	UG/L	0	0%	5.2	0	0	12	5	U	5	U	5	U	5	U	5	U	5	U
Iron	UG/L	140	75%	300	0	9	12	25.6	U	140		56.1		97.1		113		79	J
Lead	UG/L	0	0%	1.4624632	0	0	12	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
Magnesium	UG/L	15600	100%		0	12	12	11800		12600		12400		12800		12600		15100	
Manganese	UG/L	16.9	100%		0	12	12	1		4.2		2		12		11.8		9.5	J
Mercury	UG/L	0	0%	0.0007	0	0	12	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	UG/L	0	0%	100.16198	0	0	12	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.3	U
Potassium	UG/L	2930	100%		0	12	12	2930		2870		2650		2720		2790		1810	J
Selenium	UG/L	0	0%	4.6	0	0	12	4.7	U	4.7	U	4.7	U	4.7	U	4.7	U	4.7	U
Silver	UG/L	0	0%	0.1	0	0	12	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
Sodium	UG/L	32400	100%		0	12	12	32400		28600		28000		29200		28900		18300	
Thallium	UG/L	0	0%	8	0	0	12	6.3	U	6.3	U	6.3	U	6.3	U	6.3	U	6.3	U
Vanadium	UG/L	0	0%	14	0	0	12	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
Zinc	UG/L	15.4	92%	159.63864	0	11	12	13.1		10.8		12.5		10		9.6		6.2	J
ADDITIONAL ANALYSES																			
Ammonia-Nitrogen	MG/L	0.22	100%		0	60	60	0.02		0.02		0.02		0.02		0.01		0.02	
Nitrate/Nitrite	%W/W	1.38	100%		0	47	47	0.06		0.01		0.01		0.02					
Nitrate/Nitrite	MG/KG	0.68	100%		0	11	11											0.13	
Total Dissolved Solids	MG/L	622	100%		0	58	58	424		379		383		372				365	
TOC--Soil 9060	MG/KG	6.3	100%		0	11	11											3.6	
Total Suspended Solids	MG/L	710	100%		0	58	58	0.6		32.6		1.2		1.5				1.4	
Phosphate, Total as P	MG/L	0.91	100%		0	58	58	0.02		0.01		0.01		0.01				0.02	
Alkalinity	MG/L	288	100%		0	58	58	224		200		200		208				235	
Total Hardness as CaCO3	MG/L	395	100%		0	58	58	297		263		260		263				290	
TOC--Water 415.1	MG/L	16.4	100%		0	17	17												
pH		8.4	100%		0	57	57	7.6		7.85		8.4		8.33		8.33		7.78	

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DOWNGRADIENT METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		RI Phase	
LOC_ID								SW12-53		SW12-54		SW12-55		SW12-56		SW12-57		67669	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SW12-58	
SAMP_ID								12070		12071		12068		12067		12066		12065	
SAMP_DEPTH_TOP								0		0		0		0		0		SA	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		0	
SAMP_DATE								10-Dec-97		10-Dec-97		9-Dec-97		9-Dec-97		9-Dec-97		0.1	
QC_CODE								SA		SA		SA		SA		SA		SURFACE	
STUDY_ID								RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	9-Dec-97	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES												
VOLATILE ORGANICS																			
1,1,1-Trichloroethane	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropan	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Acetone	UG/L	0	0%		0	0	11	5	U	5	U	5	U	5	U	5	U	5	U
Benzene	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Carbon disulfide	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Carbon tetrachloride	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	UG/L	0	0%	5	0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Chlorodibromomethane	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Ethyl benzene	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Methyl bromide	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Methyl butyl ketone	UG/L	0	0%		0	0	11	5	U	5	U	5	U	5	U	5	U	5	U
Methyl chloride	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Methyl ethyl ketone	UG/L	0	0%		0	0	11	5	U	5	U	5	U	5	U	5	U	5	U
Methyl isobutyl ketone	UG/L	0	0%		0	0	11	5	U	5	U	5	U	5	U	5	U	5	U
Methylene chloride	UG/L	0	0%		0	0	11	2	U	2	U	2	U	2	U	2	U	2	U
Styrene	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	UG/L	0	0%	6000	0	0	11	1	U	1	U	1	U	1	U	1	U	1	U

TABLE I-3
DOWNGRADIENT METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		RI Phase	
LOC_ID								SW12-53		SW12-54		SW12-55		SW12-56		SW12-57		67669	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SW12-58	
SAMP_ID								12070		12071		12068		12067		12066		12065	
SAMP_DEPTH_TOP								0		0		0		0		0		SA	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		0	
SAMP_DATE								10-Dec-97		10-Dec-97		9-Dec-97		9-Dec-97		9-Dec-97		0.1	
QC_CODE								SA		SA		SA		SA		SA		SURFACE	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		9-Dec-97	
PARAMETER	UNIT	MAXIMUM	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Total Xylenes	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	UG/L	0	0%	40	0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl chloride	UG/L	0	0%		0	0	11	1	U	1	U	1	U	1	U	1	U	1	U
SEMI VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
1,2-Dichlorobenzene	UG/L	0	0%	5	0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
1,3-Dichlorobenzene	UG/L	0	0%	5	0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
1,4-Dichlorobenzene	UG/L	0	0%	5	0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
2,4,5-Trichlorophenol	UG/L	0	0%		0	0	12	2.7	U	2.7	U	2.6	U	2.6	U	2.6	U	2.7	U
2,4,6-Trichlorophenol	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
2,4-Dichlorophenol	UG/L	0	0%	1	0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
2,4-Dimethylphenol	UG/L	0	0%	1000	0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
2,4-Dinitrophenol	UG/L	0	0%	400	0	0	12	2.7	U	2.7	U	2.6	U	2.6	U	2.6	U	2.7	U
2,4-Dinitrotoluene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
2,6-Dinitrotoluene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
2-Chloronaphthalene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
2-Chlorophenol	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
2-Methylnaphthalene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
2-Methylphenol	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
2-Nitroaniline	UG/L	0	0%		0	0	12	2.7	U	2.7	U	2.6	U	2.6	U	2.6	U	2.7	U
2-Nitrophenol	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
3,3'-Dichlorobenzidine	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
3-Nitroaniline	UG/L	0	0%		0	0	12	2.7	UJ	2.7	UJ	2.6	UJ	2.6	UJ	2.6	UJ	2.7	UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0%		0	0	12	2.7	U	2.7	U	2.6	U	2.6	U	2.6	U	2.7	U
4-Bromophenyl phenyl ether	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
4-Chloro-3-methylphenol	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
4-Chloroaniline	UG/L	0	0%		0	0	12	1.1	UJ	1.1	UJ	1	UJ	1	UJ	1	UJ	1.1	UJ
4-Chlorophenyl phenyl ether	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
4-Methylphenol	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
4-Nitroaniline	UG/L	0	0%		0	0	12	2.7	UJ	2.7	UJ	2.6	UJ	2.6	UJ	2.6	UJ	2.7	UJ
4-Nitrophenol	UG/L	0	0%		0	0	12	2.7	U	2.7	U	2.6	U	2.6	U	2.6	U	2.7	U
Acenaphthene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Acenaphthylene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Anthracene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U

TABLE I-3
DOWNGRADIENT METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		RI Phase	
LOC_ID								SW12-53		SW12-54		SW12-55		SW12-56		SW12-57		67669	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SW12-58	
SAMP_ID								12070		12071		12068		12067		12066		12065	
SAMP_DEPTH_TOP								0		0		0		0		0		SA	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		0	
SAMP_DATE								10-Dec-97		10-Dec-97		9-Dec-97		9-Dec-97		9-Dec-97		0.1	
QC_CODE								SA		SA		SA		SA		SA		SURFACE	
STUDY_ID			FREQUENCY OF DETECTION	NYS AWQS CLASS C (AQUATIC)	NUMBER ABOVE CLASS C	NUMBER OF DETECTS	NUMBER OF ANALYSES	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	9-Dec-97	
PARAMETER	UNIT	MAXIMUM																	
Benzo(a)anthracene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Benzo(a)pyrene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Benzo(b)fluoranthene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Benzo(ghi)perylene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Benzo(k)fluoranthene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Bis(2-Chloroethyl)ether	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Bis(2-Ethylhexyl)phthalate	UG/L	0.26	17%	0.6	0	2	12	1.1	U	1.1	UJ	1	U	1	U	1	U	1.1	U
Butylbenzylphthalate	UG/L	0.12	17%		0	2	12	1.1	U	1.1	U	1	U	1	U	0.12	J	1.1	U
Carbazole	UG/L	0	0%		0	0	12	1.1	UJ	1.1	UJ	1	UJ	1	UJ	1	UJ	1.1	UJ
Chrysene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Di-n-butylphthalate	UG/L	0	0%		0	0	12	1.1	U	1.1	UJ	1	U	1	U	1	U	1.1	U
Di-n-octylphthalate	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Dibenz(a,h)anthracene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Dibenzofuran	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Diethyl phthalate	UG/L	0.072	17%		0	2	12	1.1	U	0.072	J	0.06	J	1	U	1	U	1.1	U
Dimethylphthalate	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Fluoranthene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Fluorene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Hexachlorobenzene	UG/L	0	0%	0.00003	0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Hexachlorobutadiene	UG/L	0	0%	0.01	0	0	12	1.1	UJ	1.1	U	1	UJ	1	UJ	1	UJ	1.1	UJ
Hexachlorocyclopentadiene	UG/L	0	0%	0.45	0	0	12	1.1	UJ	1.1	UJ	1	UJ	1	UJ	1	UJ	1.1	UJ
Hexachloroethane	UG/L	0	0%	0.6	0	0	12	1.1	U	1.1	UJ	1	U	1	U	1	U	1.1	U
Indeno(1,2,3-cd)pyrene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Isophorone	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
N-Nitrosodiphenylamine	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
N-Nitrosodipropylamine	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Naphthalene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Nitrobenzene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Pentachlorophenol	UG/L	0	0%	12.6	0	0	12	2.7	U	2.7	U	2.6	U	2.6	U	2.6	U	2.7	U
Phenanthrene	UG/L	0	0%		0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Phenol	UG/L	0	0%	5	0	0	12	1.1	U	1.1	U	1	U	1	U	1	U	1.1	U
Pyrene	UG/L	0	0%		0	0	12	0.011	U	0.005	U	0.005	U	0.005	U	0.005	U	0.011	U
PESTICIDES/PCBS																			
4,4'-DDD	UG/L	0	0%	0.00008	0	0	12	0.011	U	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U

TABLE I-3
DOWNGRADIENT METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		RI Phase	
LOC_ID								SW12-53		SW12-54		SW12-55		SW12-56		SW12-57		67669	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SW12-58	
SAMP_ID								12070		12071		12068		12067		12066		12065	
SAMP_DEPTH_TOP								0		0		0		0		0		SA	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		0	
SAMP_DATE								10-Dec-97		10-Dec-97		9-Dec-97		9-Dec-97		9-Dec-97		0 1	
QC_CODE								SA		SA		SA		SA		SA		SURFACE	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		RI Phase 1 Step 1		9-Dec-97	
PARAMETER	UNIT	MAXIMUM	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
4,4'-DDE	UG/L	0	0%	0.000007	0	0	12	0.011	U	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
4,4'-DDT	UG/L	0	0%	0 00001	0	0	12	0.011	U	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
Aldrin	UG/L	0	0%	0.001	0	0	12	0.0053	U	0.0051	U	0 0052	U	0.0052	U	0.005	U	0.0053	U
Alpha-BHC	UG/L	0	0%		0	0	12	0.0053	U	0.0051	U	0.0052	U	0.0052	U	0.005	U	0.0053	U
Alpha-Chlordane	UG/L	0	0%		0	0	12	0.0053	U	0.0051	U	0.0052	U	0.0052	U	0.005	U	0.0053	U
Aroclor-1016	UG/L	0	0%	0.000001	0	0	12	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U
Aroclor-1221	UG/L	0	0%	0.000001	0	0	12	0.21	U	0.2	U	0.21	U	0.21	U	0.2	U	0.21	U
Aroclor-1232	UG/L	0	0%	0.000001	0	0	12	0.11	U	0.1	U	0.1	U	0 1	U	0.1	U	0.11	U
Aroclor-1242	UG/L	0	0%		0	0	12	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U
Aroclor-1248	UG/L	0	0%	0.000001	0	0	12	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U	0.11	U
Aroclor-1254	UG/L	0	0%	0.000001	0	0	12	0.11	U	0.1	U	0.1	U	0 1	U	0.1	U	0.11	U
Aroclor-1260	UG/L	0	0%	0.000001	0	0	12	0.11	U	0.1	U	0.1	U	0.01	U	0.1	U	0.11	U
Beta-BHC	UG/L	0	0%		0	0	12	0.0053	U	0.0051	U	0.0052	U	0.0052	U	0.005	U	0.0053	U
Delta-BHC	UG/L	0	0%		0	0	12	0.0053	U	0.0051	U	0 0052	U	0.0052	U	0.005	U	0.0053	U
Dieldrin	UG/L	0	0%	0.0000006	0	0	12	0.011	U	0.01	U	0.01	U	0 01	U	0.01	U	0.011	U
Endosulfan I	UG/L	0	0%	0.009	0	0	12	0.0053	U	0.0051	U	0.0052	U	0.0052	U	0.005	U	0.0053	U
Endosulfan II	UG/L	0	0%	0.009	0	0	12	0.011	U	0 01	U	0.01	U	0.01	U	0.01	U	0.011	U
Endosulfan sulfate	UG/L	0	0%		0	0	12	0 011	U	0.01	U	0 01	U	0.01	U	0.01	U	0.011	U
Endrin	UG/L	0	0%	0.002	0	0	12	0.011	U	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
Endrin aldehyde	UG/L	0	0%		0	0	12	0.011	U	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
Endrin ketone	UG/L	0	0%		0	0	12	0.011	U	0.01	U	0 01	U	0.01	U	0.01	U	0.011	U
Gamma-BHC/Lindane	UG/L	0	0%		0	0	12	0.0053	U	0.0051	U	0.0052	U	0.0052	U	0.005	U	0 0053	U
Gamma-Chlordane	UG/L	0	0%		0	0	12	0.0053	U	0.0051	U	0.0052	U	0.0052	U	0.005	U	0.0053	U
Heptachlor	UG/L	0	0%	0.0002	0	0	12	0.0053	U	0.0051	U	0.0052	U	0.0052	U	0.005	U	0.0053	U
Heptachlor epoxide	UG/L	0	0%	0.0003	0	0	12	0.0053	U	0.0051	U	0.0052	U	0.0052	U	0.005	U	0.0053	U
Hexachlorobenzene	UG/L	0.013	8%	0.00003	1	1	12	0.011	U	0.01	U	0.01	U	0.01	U	0.01	U	0.011	U
Methoxychlor	UG/L	0	0%	0.03	0	0	12	0.053	U	0.051	U	0.052	U	0.052	U	0.05	U	0.053	U
Toxaphene	UG/L	0	0%	0.000006	0	0	12	0.53	U	0.51	U	0.52	U	0.52	U	0.5	U	0.53	U
METALS																			
Aluminum	UG/L	79.9	42%	100	0	5	12	12.3	U	12.3	U	12 3	U	12 3	U	12 3	U	12.3	U
Antimony	UG/L	0	0%		0	0	12	3.5	U	3.5	U	3 5	U	3.5	U	3 5	U	3.5	U
Arsenic	UG/L	0	0%	150	0	0	12	3.6	U	3.6	U	3.6	U	3.6	U	3 6	U	3.6	U
Barium	UG/L	53.2	100%		0	12	12	50.5	J	50.6	J	50.8	J	49.6	J	49.4	J	52.2	J
Beryllium	UG/L	0.21	67%	1100	0	8	12	0 1	U	0.16	J	0 1	U	0 15	J	0.16	J	0.14	J
Cadmium	UG/L	1.2	42%	3.845011	0	5	12	0.3	U	0.3	U	0.3	U	0.45	J	0.44	J	0.3	U
Calcium	UG/L	98400	100%		0	12	12	97100		92700		93800		93700		95700		98300	

TABLE I-3
DOWNGRADIENT METALS DATA-SURFACE WATER
SEAD-12 REMEDIATION INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		RI Phase	
LOC_ID								SW12-53		SW12-54		SW12-55		SW12-56		SW12-57		67669	
MATRIX								SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SURFACE WATER		SW12-58	
SAMP_ID								12070		12071		12068		12067		12066		12065	
SAMP_DEPTH_TOP								0		0		0		0		0		SA	
SAMP_DEPTH_BOT								N/A		N/A		N/A		N/A		N/A		0	
SAMP_DATE								10-Dec-97		10-Dec-97		9-Dec-97		9-Dec-97		9-Dec-97		0.1	
QC_CODE								SA		SA		SA		SA		SA		SURFACE	
STUDY_ID			FREQUENCY OF	NYS AWQS CLASS C	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	RI Phase 1	Step 1	9-Dec-97	
PARAMETER	UNIT	MAXIMUM	DETECTION	(AQUATIC)	CLASS C	DETECTS	ANALYSES												
Chromium	UG/L	0	0%	139.78605	0	0	12	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
Cobalt	UG/L	0	0%	5	0	0	12	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
Copper	UG/L	2.6	8%	17.362284	0	1	12	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U
Cyanide	UG/L	0	0%	5.2	0	0	12	5	U	5	U	5	U	5	U	5	U	5	U
Iron	UG/L	140	75%	300	0	9	12	26.3	J	36.8	J	36.6	J	50	J	25.6	U	25.6	U
Lead	UG/L	0	0%	1.4624632	0	0	12	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
Magnesium	UG/L	15600	100%		0	12	12	14600		13800		14600		14700		15200		15600	
Manganese	UG/L	16.9	100%		0	12	12	7.3	J	8.2	J	5.4	J	8.8	J	2	J	16.9	
Mercury	UG/L	0	0%	0.0007	0	0	12	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	UG/L	0	0%	100.16198	0	0	12	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U
Potassium	UG/L	2930	100%		0	12	12	1660	J	1630	J	1970	J	1990	J	1990	J	2020	J
Selenium	UG/L	0	0%	4.6	0	0	12	4.7	U	4.7	U	4.7	U	4.7	U	4.7	U	4.7	U
Silver	UG/L	0	0%	0.1	0	0	12	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
Sodium	UG/L	32400	100%		0	12	12	15900		12700		18000		18300		18700		19200	
Thallium	UG/L	0	0%	8	0	0	12	6.3	U	6.3	U	6.3	U	6.3	U	6.3	U	6.3	U
Vanadium	UG/L	0	0%	14	0	0	12	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
Zinc	UG/L	15.4	92%	159.63864	0	11	12	3.1	U	3.8	J	4	J	15.4	J	3.7	J	4.7	J
ADDITIONAL ANALYSES																			
Ammonia-Nitrogen	MG/L	0.22	100%		0	60	60	0.02		0.02		0.03		0.03		0.03		0.04	
Nitrate/Nitrite	%W/W	1.38	100%		0	47	47												
Nitrate/Nitrite	MG/KG	0.68	100%		0	11	11	0.01		0.01		0.27		0.25		0.68		0.66	
Total Dissolved Solids	MG/L	622	100%		0	58	58	348		332		362		366		368		388	
TOC--Soil 9060	MG/KG	6.3	100%		0	11	11	3.6		3.5		3.5		3.6		3.4		3.5	
Total Suspended Solids	MG/L	710	100%		0	58	58	0.9		0.5		0.5		1		0.5		1.1	
Phosphate, Total as P	MG/L	0.91	100%		0	58	58	0.02		0.02		0.02		0.03		0.04		0.03	
Alkalinity	MG/L	288	100%		0	58	58	230		230		228		222		222		228	
Total Hardness as CaCO3	MG/L	395	100%		0	58	58	285		290		285		285		285		295	
TOC--Water 415.1	MG/L	16.4	100%		0	17	17												
pH		8.4	100%		0	57	57	7.65		7.77		8.18		8.19		8.12		8.02	

TABLE I-4
BACKGROUND RADIOLOGICAL DATA-SURFACE SOIL
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-59			SW12-60			SW12-61		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12053			12054			12055		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH TO BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									10-Nov-97			10-Nov-97			11-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
PARAMETER	UNIT	MAXIMU	AVERAGE	OF DETECTION	RAD GUIDELINE	ABOVE RAD	OF DETECTS	OF NALYSE	N			N			N		
Bismuth-214	pCi/L	21.9	16.60	100%	0	0	9	9	20.2		+/-8.9	14.5		+/-5	21.9		+/-6
Cesium-137	pCi/L	4.5	1.61	11%	0	0	1	9	5.9	U		6.2	U		0.7	U	
Cobalt-57	pCi/L	0.6	0.37	11%	0	0	1	9	0.7	U		0.3	U		1	U	
Cobalt-60	pCi/L	2.9	1.51	11%	0	0	1	9	4.9	U		4	U		0.5	U	
Gross Alpha	pCi/L	11.5	3.63	44%	0	0	4	9	1.4	U	+/-0.8	0.4		+/-1.1	2.5	U	+/-1.4
Gross Beta	pCi/L	27.4	9.57	56%	0	0	5	9	3.1	J	+/-0.9	3.9	J	+/-0.9	2.5	U	+/-1.3
Lead-211	pCi/L	464	108.51	22%	0	0	2	9	16.1	U		196	U		464		+/-220
Lead-214	pCi/L	15.5	9.61	33%	0	0	3	9	15.2		+/-6.8	15.5		+/-4.9	32.6	U	
Plutonium-239/240	pCi/L	0.2	0.11	11%	0	0	1	9	0.1	U	+/-0.1	0.1	U	+/-0.2	0.2	U	+/-0.1
Promethium-147	pCi/L	61.3	39.13	29%	0	0	2	7	57.2		+/-40.1	61.3		+/-33.7	63.9	U	+/-40.2
Radium-223	pCi/L	0.5	0.25	11%	0	0	1	9	0.5	UJ		0.5	UJ		0.5	UJ	
Radium-226	pCi/L	0.5	0.25	11%	0	0	1	9	0.5	UJ	+/-0.2	0.5	UJ	+/-0.2	0.5	UJ	+/-0.2
Radon 222	pCi/L	68.8	40.28	56%	0	0	5	9	51.3		+/-37.2	36.7		+/-37.1	66.9	U	+/-33.1
Thorium-227	pCi/L	0.2	0.11	44%	0	0	4	9	0.1		+/-0.1	0.2	U	+/-0.1	0.1		+/-0.1
Thorium-230	pCi/L	0.4	0.13	11%	0	0	1	9	0.1	U	+/-0.2	0.4	U	+/-0.3	0.2	U	+/-0.2
Thorium-232	pCi/L	0.1	0.11	22%	0	0	2	9	0.2	U	+/-0.1	0.2	U	+/-0.1	0.2	U	+/-0.1
Tritium	pCi/L	158	119.01	44%	0	0	4	9	158	J	+/-184	63.1	J	+/-180	113	UJ	+/-176
Uranium-233/234	pCi/L	0.3	0.11	11%	0	0	1	9	0.5	U	+/-0.3	0.8	U	+/-0.3	0.3	U	+/-0.2
Uranium-235	pCi/L	0.1	0.09	78%	0	0	7	9	0.1		+/-0.1	0.1		+/-0.1	0.2	UJ	+/-0.1
Uranium-238	pCi/L	0.3	0.12	44%		0	4	9	0.1			0.1			0.1	U	

TABLE I-4
BACKGROUND RADIOLOGICAL DATA-SURFACE SOIL
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-63			SW12-63			SW12-64		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12048			12049			12056		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH TO BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									9-Nov-97			10-Nov-97			11-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMU	AVERAGE	OF DETECTION	RAD GUIDELINE	ABOVE RAD	OF DETECTS	OF NALYSE	N			N			N		
Bismuth-214	pCi/L	21.9	16.60	100%	0	0	9	9	16.7		+/-5.7	18		+/-7.6	16.1		+/-4.3
Cesium-137	pCi/L	4.5	1.61	11%	0	0	1	9	2.4	U		2.9	U		1.5	U	
Cobalt-57	pCi/L	0.6	0.37	11%	0	0	1	9	0.5	U		0.7	U		1.4	U	
Cobalt-60	pCi/L	2.9	1.51	11%	0	0	1	9	3.2	U		0.4	U		0.5	U	
Gross Alpha	pCi/L	11.5	3.63	44%	0	0	4	9	11.5		+/-1.7	7.4		+/-1.5	2.5	U	+/-1.4
Gross Beta	pCi/L	27.4	9.57	56%	0	0	5	9	23	J	+/-1.4	27.4	J	+/-1.4	2.9	U	+/-1.5
Lead-211	pCi/L	464	108.51	22%	0	0	2	9	22.9	U		219	U		279	U	
Lead-214	pCi/L	15.5	9.61	33%	0	0	3	9	18.4	U		12.2	U		17.7	U	
Plutonium-239/240	pCi/L	0.2	0.11	11%	0	0	1	9	0.3	U	+/-0.1	0.2	U	+/-0.2	0.2	U	+/-0.1
Promethium-147	pCi/L	61.3	39.13	29%	0	0	2	7				69.8	U		70.6	U	+/-33.8
Radium-223	pCi/L	0.5	0.25	11%	0	0	1	9	0.5	UJ		0.5	UJ		0.5	UJ	
Radium-226	pCi/L	0.5	0.25	11%	0	0	1	9	0.5	UJ	+/-0.2	0.5	UJ	+/-0.2	0.5	UJ	+/-0.2
Radon 222	pCi/L	68.8	40.28	56%	0	0	5	9	68.8		+/-43.9	55.9		+/-36.8	54.8	U	+/-33.1
Thorium-227	pCi/L	0.2	0.11	44%	0	0	4	9	0.2	U	+/-0.1	0.1		+/-0.1	0.2	U	+/-0.1
Thorium-230	pCi/L	0.4	0.13	11%	0	0	1	9	0.6	U	+/-0.3	0.6	U	+/-0.3	0.4	U	+/-0.3
Thorium-232	pCi/L	0.1	0.11	22%	0	0	2	9	0.1		+/-0.1	0.2	U	+/-0.1	0.3	U	+/-0.1
Tritium	pCi/L	158	119.01	44%	0	0	4	9	13.5	J	+/-181	289	UJ	+/-169	286	UJ	+/-167
Uranium-233/234	pCi/L	0.3	0.11	11%	0	0	1	9	0.5	U	+/-0.3	0.4	U	+/-0.3	0.6	U	+/-0.3
Uranium-235	pCi/L	0.1	0.09	78%	0	0	7	9	0.1	U	+/-0.1	0.1		+/-0.1	0.1	J	+/-0.1
Uranium-238	pCi/L	0.3	0.12	44%		0	4	9	0.1	U		0.3			0.2	U	

TABLE I-4
BACKGROUND RADIOLOGICAL DATA-SURFACE SOIL
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-65			SW12-66			SW12-67		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12057			12058			12047		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH TO BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									11-Nov-97			11-Nov-97			9-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
				OF	RAD	ABOVE	OF	OF									
PARAMETER	UNIT	MAXIMU	AVERAGE	DETECTION	GUIDELINE	RAD	DETECTS	NALYSE	N			N			N		
Bismuth-214	pCi/L	21.9	16.60	100%	0	0	9	9	10.4		+/-3.4	17.9		+/-7.2	13.7		+/-6.3
Cesium-137	pCi/L	4.5	1.61	11%	0	0	1	9	3	U		1.9	U		4.5		
Cobalt-57	pCi/L	0.6	0.37	11%	0	0	1	9	0.7	U		0.8	U		0.6		
Cobalt-60	pCi/L	2.9	1.51	11%	0	0	1	9	2.8	U		8	U		2.9		
Gross Alpha	pCi/L	11.5	3.63	44%	0	0	4	9	2.7	U	+/-1.5	2.5	U	+/-1.5	7.6		+/-1.5
Gross Beta	pCi/L	27.4	9.57	56%	0	0	5	9	2.5	U	+/-1.3	2.2	U	+/-1.2	23.7		+/-1.1
Lead-211	pCi/L	464	108.51	22%	0	0	2	9	9.3	U		269	U		13.8		
Lead-214	pCi/L	15.5	9.61	33%	0	0	3	9	11.3	U	+/-3.4	14.9	U	+/-4.6	12.7		+/-5.3
Plutonium-239/240	pCi/L	0.2	0.11	11%	0	0	1	9	0.2	U	+/-0.1	0.3	U	+/-0.2	0.2		+/-0.2
Promethium-147	pCi/L	61.3	39.13	29%	0	0	2	7	55.1	U	+/-33.6	49.1	U	+/-40			
Radium-223	pCi/L	0.5	0.25	11%	0	0	1	9	0.5	UJ		0.5	UJ		0.5		
Radium-226	pCi/L	0.5	0.25	11%	0	0	1	9	0.5	UJ	+/-0.2	0.5	UJ	+/-0.2	0.5		+/-0.2
Radon 222	pCi/L	68.8	40.28	56%	0	0	5	9	57.5	U	+/-33.4	82.3	U	+/-33.9	41.7		+/-43.4
Thorium-227	pCi/L	0.2	0.11	44%	0	0	4	9	0.3	U	+/-0.1	0.2	U	+/-0.1	0.2		+/-0.1
Thorium-230	pCi/L	0.4	0.13	11%	0	0	1	9	0.3	U	+/-0.2	0.2	U	+/-0.2	0.4		+/-0.3
Thorium-232	pCi/L	0.1	0.11	22%	0	0	2	9	0.2	U	+/-0.1	0.2	U	+/-0.1	0.1		+/-0.1
Tritium	pCi/L	158	119.01	44%	0	0	4	9	153	UJ	+/-177	58.6	UJ	+/-173	113		+/-186
Uranium-233/234	pCi/L	0.3	0.11	11%	0	0	1	9	0.4	U	+/-0.2	0.5	U	+/-0.3	0.3		+/-0.2
Uranium-235	pCi/L	0.1	0.09	78%	0	0	7	9	0.1	J	+/-0.1	0.1	J	+/-0.1	0.1		+/-0.1
Uranium-238	pCi/L	0.3	0.12	44%		0	4	9	0.4	U		0.2	U		0.2		

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12	
LOCATION ID									SW12-1			SW12-10			SW12-11	
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER	
SAMPLE ID									12039			12025			12073	
DEPTH TO TOP OF SAMPLE									0			0			0	
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A	
SAMPLE DATE									5-Nov-97			3-Nov-97			13-Dec-97	
QC CODE									SA			SA			SA	
STUDY ID				FREQUENCY OF	RAD	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	GUIDELINE	RAD	DETECTS	NALYSES								
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	4.1	UJ		16.3	J	+/-5.6	34.6	+/-7.9
Cesium-137	pCi/L	0		0%		0	0	47	2.1	U		0.5	U		5.3	U
Cobalt-57	pCi/L	0		0%		0	0	47	0.6	U		0.5	U		2.9	U
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	0.4	UJ		0.9	UJ		0.8	U
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	0.9	J	+/-1.1	1.1	J	+/-1.1	3.1	U	+/-1.7
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	1.3	J	+/-1.1	7.4	J	+/-1	2.4	U	+/-1.3
Lead-211	pCi/L	352	51.468478	2%		0	1	47	8.6	U		24.7	U		234	U
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	9	J	+/-4.1	8.2	J	+/-3.3	19	U
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.2	U	+/-0.2	0.1	U	+/-0.1	0.4	U	+/-0.3
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23	62.1	U		62.1	U			
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.1			0.4	U		0.4	U
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.1		+/-0.3	0.4	U	+/-0.1	0.4	U	+/-0.1
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	59.5	J	+/-20.6	32.2		+/-21.1	52.8		+/-26.5
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.5	U	+/-0.1	0.2	U	+/-0.1	0.2	UJ	+/-0.1
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	1.2	J	+/-0.8	0.5	U	+/-0.3	1.1	UJ	+/-0.5
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.6	U	+/-0.1	0.2	U	+/-0.1	0.2	J	+/-0.2
Tritium	pCi/L	432	157.55119	81%		0	35	43	225	J	+/-180	369	J	+/-194	207	J	+/-186
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.4	UJ	+/-0.2	0.3	U	+/-0.2	0.6	UJ	+/-0.3
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1	U	+/-0.1	0.1	U	+/-0.1	0.2	UJ	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.2			0.3	UJ		0.6	J	

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-12			SW12-13			SW12-14		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12042			12041			12035		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									6-Nov-97			6-Nov-97			4-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY OF	RAD	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	GUIDELINE	RAD	DETECTS	NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	26.7	UJ	+/-7	14.1	UJ	+/-5.2	6.8	J	+/-2.1
Cesium-137	pCi/L	0		0%		0	0	47	3.6	U		4	U		0.4	U	
Cobalt-57	pCi/L	0		0%		0	0	47	1.5	U		0.6	U		0.5	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	4.4	U		2.5	U		5.4	UJ	
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	1.7	UJ	+/-1.4	2.5	J	+/-1.5	2.3	J	+/-1
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	1.3	UJ	+/-0.9	6.5	J	+/-0.8	1.9	J	+/-0.8
Lead-211	pCi/L	352	51.468478	2%		0	1	47	436	U		27.1	U		45	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	16.8	U	+/-5.3	13.6	U	+/-4.9	9.7	J	+/-3.2
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.2	U	+/-0.2	0.3	U	+/-0.2	0.2	U	+/-0.1
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23	69.4	U	+/-33.8	31	U	+/-33.1	62.1	U	
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.1			0.6	U		0.6	U	
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.1		+/-0.3	0.6	U	+/-0.2	0.6	U	+/-0.2
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	36.3	UJ	+/-18.4	38.2	UJ	+/-18.3	84	J	+/-23
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.3	UJ	+/-0.1	0.3	UJ	+/-0.4	0.1	U	+/-0.3
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	0.3	UJ	+/-0.3	0.3	UJ	+/-0.5	0.9	J	+/-0.8
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.3	UJ	+/-0.1	0.7	UJ	+/-0.2	0.8	U	+/-0.3
Tritium	pCi/L	432	157.55119	81%		0	35	43	108	UJ	+/-189	171	UJ	+/-196	104	J	+/-172
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	1	J	+/-0.4	0.5	UJ	+/-0.3	0.7	J	+/-0.3
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1	U	+/-0.2	0.1	U	+/-0.1	0.2	U	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.4	U		0.6			0.4		

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-15			SW12-16			SW12-17		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12034			12028			12032		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									4-Nov-97			4-Nov-97			4-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	OF DETECTION	RAD GUIDELINE	ABOVE RAD	OF DETECTS	OF NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	7	J	+/-2.3	15.1	J	+/-5.2	29.2	J	+/-2.2
Cesium-137	pCi/L	0		0%		0	0	47	1.2	U		2.1	U		0.8	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.9	U		0.7	U		0.3	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	4.4	UJ		6	UJ		1.6	UJ	
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	1.6	J	+/-0.8	1.1	J	+/-0.8	1.7	J	+/-0.6
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	2	J	+/-0.8	3.3	J	+/-0.7	18	J	+/-0.8
Lead-211	pCi/L	352	51.468478	2%		0	1	47	17.6	U		329	U		9.9	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	7.9	J	+/-2.8	10.7	J	+/-5.2	28.8	J	+/-2.7
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.1	UJ	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23	69.8	U		62.1	U		62.1	U	
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.6	U		4	U		6	U	
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.6	U	+/-0.2	0.4	U	+/-0.1	0.6	U	+/-0.1
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	70.8	J	+/-22.5	45.8		+/-19.5	27.4	J	+/-21.5
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.2	U	+/-0.4	0.4	UJ	+/-0.1	0.6	U	+/-0.1
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	1.8	J	+/-1.1	0.5	UJ	+/-0.5	1.7	J	+/-1
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.7	U	+/-0.3	0.1	J	+/-0.2	0.5	U	+/-0.1
Tritium	pCi/L	432	157.55119	81%		0	35	43	279	J	+/-183	85.6	J	+/-172	432	J	+/-230
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.6	J	+/-0.3	0.6	U	+/-0.3	0.1	UJ	+/-0.1
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.2			0.3	UJ		0.1		

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-18			SW12-19			SW12-2		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12052			12040			12001		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									10-Nov-97			6-Nov-97			26-Oct-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY OF	RAD	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	GUIDELINE	RAD	DETECTS	NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	19.3		+/-6.4	25.8	UJ	+/-7.4	20.4		+/-5.8
Cesium-137	pCi/L	0		0%		0	0	47	2	U		5.5	U		4	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.5	U		0.6	U		0.7	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	2.5	U		2	U		5.6		+/-2.6
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	0.6		+/-1.1	1.9	UJ	+/-1.4	0.6	J	+/-2.1
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	9.6	J	+/-1.7	8	J	+/-0.8	2.6	U	+/-1.5
Lead-211	pCi/L	352	51.468478	2%		0	1	47	467	U		306	U		28.5	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	12.6		+/-5.1	17.2	U		19.6	UJ	+/-4.2
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.1	U	+/-0.2	0.1	U	+/-0.2	0.1	UJ	+/-0.2
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23				83	U	+/-36.4			
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.4	J		0.1			0.5	U	
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.4	J	+/-0.3	0.1		+/-0.3	0.5	U	+/-0.2
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	66.3		+/-38.7	43.6	UJ	+/-18.2	354	U	+/-82.8
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.2	U	+/-0.1	0.1	UJ	+/-0.2	0.4	UJ	+/-0.3
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	1.1	U	+/-0.5	0.4	UJ	+/-0.4	0.3	UJ	+/-0.4
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.2	U	+/-0.1	0.1	UJ	+/-0.1	0.7	UJ	+/-0.2
Tritium	pCi/L	432	157.55119	81%		0	35	43	31.5	J	+/-178	4.5	UJ	+/-184			
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.4	U	+/-0.2	0.5	UJ	+/-0.3	0.7	U	+/-0.3
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1		+/-0.1	0.2	U	+/-0.1	0.1	U	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.2			0.5	U		0.2	U	

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-20			SW12-22			SW12-23		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12045			12024			12020		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									6-Nov-97			3-Nov-97			3-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	OF DETECTION	RAD GUIDELINE	ABOVE RAD	OF DETECTS	OF NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	14.7	J	+/-4.3	6		+/-1.4	9.4		+/-3.9
Cesium-137	pCi/L	0		0%		0	0	47	2.1	U		1.8	U		1	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.5	U		0.3	U		0.3	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	1.4	U		1.2	U		0.8	U	
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	13.6		+/-2.5	0.5	U	+/-0.9	2.9	U	+/-1.7
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	80.8	J	+/-3.4	11.3	U	+/-1.1	14.9	U	+/-1.3
Lead-211	pCi/L	352	51.468478	2%		0	1	47	352		+/-153	18.5	U		4.4	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	11.4	J	+/-4.3	5.9		+/-1.6	5.5		+/-1.9
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.3	U	+/-0.1	0.2	UJ	+/-0.1	0.1	U	+/-0.1
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23									
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.1			0.2			0.1		
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.1		+/-0.3	0.2		+/-0.2	0.1		+/-0.2
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	78.9	J	+/-19.3	413	U	+/-112	343	U	+/-109
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.2	UJ	+/-0.1	0.3	UJ	+/-0.1	0.3	UJ	+/-0.3
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	0.1	UJ	+/-0.2	0.6	UJ	+/-0.5	0.1	UJ	+/-0.3
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.1	J	+/-0.1	0.4	UJ	+/-0.2	0.1	UJ	+/-0.2
Tritium	pCi/L	432	157.55119	81%		0	35	43	203	J	+/-176	176		+/-207	313	U	+/-182
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.7	U	+/-0.3	0.1		+/-0.2	0.7		+/-0.4
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1	U	+/-0.1	0.2	U	+/-0.1	0.2	U	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.3	UJ		0.1	U		0.4	U	

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-24			SW12-25			SW12-26		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12019			12006			12005		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									3-Nov-97			27-Oct-97			27-Oct-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
				OF	RAD	ABOVE	OF	OF									
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	GUIDELINE	RAD	DETECTS	NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	10.5	U		31.8	U		21.1	U	
Cesium-137	pCi/L	0		0%		0	0	47	1.5	U		1.8	U		1.7	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.4	U		0.7	U		0.5	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	5.7	U		6.7	U		3.2	U	
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	0.7	U	+/-1.2	2	UJ	+/-0.7	0.6	J	+/-1.4
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	3.8	U	+/-1	2.1		+/-1	8.6		+/-1.2
Lead-211	pCi/L	352	51.468478	2%		0	1	47	35.1	U		91.5	U		15.8	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	5.8		+/-1.5	26.5	UJ	+/-5.4	18.7	UJ	+/-5.5
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.1	U	+/-0.1	0.5	UJ	+/-0.2	0.1	UJ	+/-0.2
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23									
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.5	U		0.1			0.5	U	
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.5	U	+/-0.1	0.1		+/-0.2	0.5	U	+/-0.1
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	432	U	+/-111	282	U	+/-67.8	243	U	+/-66.8
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.3	UJ	+/-0.4	0.5	UJ	+/-0.4	0.2	UJ	+/-0.2
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	0.4	UJ	+/-0.5	1	UJ	+/-0.6	0.9	UJ	+/-0.3
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.6	UJ	+/-0.2	0.1	UJ	+/-0.3	0.6	UJ	+/-0.2
Tritium	pCi/L	432	157.55119	81%		0	35	43	63.1		+/-188						
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.2	U	+/-0.2	0.4	U	+/-0.2	0.7	U	+/-0.3
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1		+/-0.1	0.2	U	+/-0.1	0.1		+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.1	U		0.2	U		0.1	U	

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-27			SW12-28			SW12-29		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12023			12016			12063		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									3-Nov-97			29-Oct-97			4-Dec-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY OF	RAD	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	GUIDELINE	RAD	DETECTS	NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	7.8		+/-2.9	13.3	UJ		30.1	UJ	
Cesium-137	pCi/L	0		0%		0	0	47	0.3	U		1.3	U		4.1	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.4	U		0.3	U		1	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	2.8	U		0.9	U		9.4	U	
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	0.2	U	+/-1.4	0.9	UJ	+/-2.2	1.6		+/-1.6
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	0.6	U	+/-0.9	5.9		+/-1.5	2	UJ	+/-1.2
Lead-211	pCi/L	352	51.468478	2%		0	1	47	12.5	U		19.1	U		334	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	10.6	U		13.2	UJ	+/-3.5	21	J	+/-7.2
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.2	U	+/-0.2	0.3	U	+/-0.2	0.1	U	+/-0.2
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23				62.1	U		70.6		+/-50.1
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.5	U		0.1	U		0.5	U	
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.5	U	+/-0.2	0.1	U	+/-0.2	0.5	UJ	+/-0.15
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	412	U	+/-111	48.1	UJ	+/-30.5	126		+/-44.5
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.4	UJ	+/-0.2	0.3	UJ	+/-0.1	0.3	U	+/-0.1
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	0.5	UJ	+/-0.4	0.3	UJ	+/-0.3	0.6	U	+/-0.3
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.3	UJ	+/-0.1	0.3	U	+/-0.1	0.2	U	+/-0.1
Tritium	pCi/L	432	157.55119	81%		0	35	43	67.6		+/-182	4.5	J	+/-178	49.5	J	+/-159
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.7		+/-0.4	0.6		+/-0.3	0.6	U	+/-0.3
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1		+/-0.2	0.1	U	+/-0.1	0.1	U	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.2	U		0.2			0.3	UJ	

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-3			SW12-30			SW12-31		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12072			12015			12014		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									13-Dec-97			28-Oct-97			28-Oct-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY OF	RAD	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	GUIDELINE	RAD	DETECTS	NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	12.4		+/-3.2	8.3	UJ	+/-3.9	12.9	UJ	+/-4.5
Cesium-137	pCi/L	0		0%		0	0	47	2	U		2.6	U		0.9	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.6	U		0.3	U		0.5	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	7.6	U		0.9	U		3.8	U	
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	2.9	U	+/-1.7	3	UJ	+/-1.3	3.3	UJ	+/-1.9
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	1.8	U	+/-1	3.5		+/-1	2.5		+/-1.3
Lead-211	pCi/L	352	51.468478	2%		0	1	47	229	U		58.1	U		58.9	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	16.1		+/-5.9	7.4	UJ	+/-2.7	13	UJ	+/-3.5
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.2	U	+/-0.2	0.3	U	+/-0.1	0.2	U	+/-0.1
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23				62.1	U		62.1	U	
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.4	U		5	U		0.5	U	
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.4	U	+/-0.1	0.5	U	+/-0.2	0.5	U	+/-0.1
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	77.4		+/-26.8	153	UJ	+/-36.2	32.9		+/-33.9
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.1	J	+/-0.2	0.2	UJ	+/-0.1	0.2	UJ	+/-0.1
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	0.8	UJ	+/-0.6	0.2	UJ	+/-0.3	0.3	UJ	+/-0.2
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.4	J	+/-0.3	0.1	U	+/-0.1	0.2	U	+/-0.1
Tritium	pCi/L	432	157.55119	81%		0	35	43	108	J	+/-178	299	UJ	+/-177	13.5	J	+/-179
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.6	UJ	+/-0.3	0.2	U	+/-0.2	0.4	U	+/-0.2
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1		+/-0.1	0.2	U	+/-0.1	0.1	U	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.3			0.1			0.3		

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-32			SW12-33			SW12-34		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12013			12012			12018		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									28-Oct-97			28-Oct-97			3-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
				OF	RAD	ABOVE	OF	OF									
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	GUIDELINE	RAD	DETECTS	NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	11.5	J	+/-3.3	9.6	J	+/-3.3	8		+/-4
Cesium-137	pCi/L	0		0%		0	0	47	0.8	U		0.8	U		0.6	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.3	U		0.4	U		0.1	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	5.8	U		0.6	U		0.7	U	
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	1.9	J	+/-2.2	0.8	J	+/-3.6	2	U	+/-1.4
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	15.3		+/-1.7	15.3		+/-3	17.7	U	+/-1.2
Lead-211	pCi/L	352	51.468478	2%		0	1	47	15.2	U		12.5	U		11.4	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	7.6	J	+/-2.4	4.6	UJ		9.5		+/-2.6
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.3	U	+/-0.1	0.1	U	+/-0.2	0.1	U	+/-0.2
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23									
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.5	U		0.5	U		0.5	U	
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.5	U	+/-0.2	0.5	U	+/-0.2	0.5	U	+/-0.2
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	**343**		+/-109	**364**		+/-108	367	U	+/-109
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.1		+/-0.1	0.5	J	+/-0.4	0.2	UJ	+/-0.3
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	0.4	U	+/-0.3	0.6	UJ	+/-0.5	1	UJ	+/-0.7
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.2	U	+/-0.1	0.1	J	+/-0.2	0.5	UJ	+/-0.2
Tritium	pCi/L	432	157.55119	81%		0	35	43	31.5	J	+/-179	40.5	J	+/-183	63.1		+/-184
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.6		+/-0.3	0.7		+/-0.3	0.2	U	+/-0.2
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1	U	+/-0.1	0.2	U	+/-0.1	0.1		+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.4			0.4			0.2	U	

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-35			SW12-36			SW12-36		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12033			12030			12031		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									4-Nov-97			4-Nov-97			4-Nov-97		
QC CODE									SA			SA			DU		
STUDY ID				FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	OF DETECTION	RAD GUIDELINE	ABOVE RAD	OF DETECTS	OF NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	10.2	J	+/-1.9	19.6	UJ		17.2	J	+/-5.6
Cesium-137	pCi/L	0		0%		0	0	47	0.9	U		1.5	U		6.8	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.3	U		0.5	U		0.8	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	3.9	J	+/-1.6	1.3	UJ		5.1	UJ	
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	2	J	+/-0.6	1.2	UJ	+/-1.1	3.7	J	+/-1.3
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	15.4	J	+/-0.8	10.4	J	+/-1.1	3.1	J	+/-1.1
Lead-211	pCi/L	352	51.468478	2%		0	1	47	14.9	U		27.1	U		23.7	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	13.7	J	+/-3.5	18.3	UJ		14.6	J	+/-4.3
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.1	UJ	+/-0.1	0.2	U	+/-0.2	0.1	U	+/-0.2
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23	62.1	U		62.1	U		62.1	U	
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	6	U		4	U		4	U	
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.6	U	+/-0.2	0.4	U	+/-0.1	0.4	U	+/-0.1
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	69.2	J	+/-22.4	43.5	J	+/-19.7	31.6	J	+/-19.9
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.3	U	+/-0.4	0.3	U	+/-0.1	0.3	U	+/-0.1
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	1.5	J	+/-1	0.4	U	+/-0.3	0.4	U	+/-0.3
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.1		+/-0.2	0.1	J	+/-0.2	0.2	UJ	+/-0.1
Tritium	pCi/L	432	157.55119	81%		0	35	43	342	J	+/-210	81.1	J	+/-171	167	J	+/-176
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.1	UJ	+/-0.1	1	U	+/-0.4	0.6	U	+/-0.3
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.1	J		0.1	UJ		0.2	UJ	

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-37			SW12-38			SW12-39		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12029			12027			12026		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									4-Nov-97			4-Nov-97			4-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY OF	RAD	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	GUIDELINE	RAD	DETECTS	NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	18.4	J	+/-7.3	14.3	J	+/-7.2	7.2	J	+/-3.2
Cesium-137	pCi/L	0		0%		0	0	47	1.1	U		4.2	U		3.7	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.4	U		1.1	U		0.4	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	1.3	UJ		4	UJ		5.7	UJ	
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	1.8	UJ	+/-1.1	1.6	UJ	+/-0.9	0.8	J	+/-1
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	16	UJ	+/-1.2	0.1	J	+/-1.1	2.7	J	+/-1
Lead-211	pCi/L	352	51.468478	2%		0	1	47	17.9	U		22.4	U		29.4	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	12.4	J	+/-5.4	12.2	UJ		13.5	UJ	
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.1	U	+/-0.1	0.1	U	+/-0.1	0.3	U	+/-0.1
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23	62.1	U		62.1	U		62.1	U	
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.4	U		4	U		4	U	
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.4	U	+/-0.1	0.4	U	+/-0.1	0.4	U	+/-0.1
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	34.2		+/-16.6	40.8		+/-19.3	34.9		+/-19
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.1	U	+/-0.1	0.1	J	+/-0.1	0.3	U	+/-0.1
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	0.4	U	+/-0.2	0.2	UJ	+/-0.3	0.1	U	+/-0.2
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.2	U	+/-0.1	0.3	UJ	+/-0.1	0.1		+/-0.1
Tritium	pCi/L	432	157.55119	81%		0	35	43	293	J	+/-182	67.6	J	+/-172	225	J	+/-180
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.6	U	+/-0.3	0.5	U	+/-0.3	0.6	U	+/-0.3
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.3	UJ		0.2	UJ		0.3	UJ	

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-4			SW12-40			SW12-41		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12038			12010			12009		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									5-Nov-97			28-Oct-97			28-Oct-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY OF DETECTION	RAD GUIDELINE	NUMBER ABOVE RAD	NUMBER OF DETECTS	NUMBER OF NALYSE	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
PARAMETER	UNIT	MAXIMUM	AVERAGE														
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	16.9	J	+/-7.6	8.2	UJ		10.3	J	+/-4.7
Cesium-137	pCi/L	0		0%		0	0	47	6.3	U		2.2	U		0.5	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.5	U		0.4	U		0.5	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	2.8	UJ		5.1	U		0.9	U	
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	2.6	J	+/-1.7	2.3	J	+/-2	7.7	J	+/-4.5
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	3.6	J	+/-1.2	7.2		+/-1.4	3.3		+/-3.1
Lead-211	pCi/L	352	51.468478	2%		0	1	47	17.4	U		21.8	U		5.1	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	9.3	J	+/-2.4	6.5	J	+/-2.5	7.2	J	+/-2.9
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.1	U	+/-0.1	0.3	UJ	+/-0.1	0.5	UJ	+/-0.4
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23	62.1	U							
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	6	U		0.3			0.5	U	
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.6	U	+/-0.1	0.3		+/-0.3	0.5	U	+/-0.2
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	53.3		+/-20.5	395		+/-110	401		+/-110
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	1.1	UJ	+/-0.1	0.1	J	+/-0.1	0.2	UJ	+/-0.1
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	2.2	J	+/-1.5	0.2	UJ	+/-0.2	0.3	UJ	+/-0.3
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.3	UJ	+/-0.6	0.1	J	+/-0.1	0.2	J	+/-0.2
Tritium	pCi/L	432	157.55119	81%		0	35	43	297	J	+/-180	310	UJ	+/-179	49.5	J	+/-179
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.6	J	+/-0.3	0.6		+/-0.3	0.5		+/-0.3
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1	U	+/-0.1	0.1		+/-0.1	0.2	U	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.3	J		0.4			0.2		

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-42			SW12-43			SW12-44		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12044			12051			12064		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									6-Nov-97			9-Nov-97			5-Dec-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY OF	RAD	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	GUIDELINE	RAD	DETECTS	NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	15.8	UJ	+/-4.7	19.9		+/-6.1	22.7	J	+/-9
Cesium-137	pCi/L	0		0%		0	0	47	1.6	U		2	U		3.2	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.3	U		1.8	U		1.3	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	4.9		+/-1.7	3.6		+/-0.9	9.7	U	
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	1.1	UJ	+/-1.5	1.9	U	+/-1.1	1.1		+/-1.4
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	9.2	J	+/-0.9	14	J	+/-1.7	3	UJ	+/-1
Lead-211	pCi/L	352	51.468478	2%		0	1	47	20.5	U		181	U		471	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	13.7	U		11.6		+/-4.7	28.1	UJ	
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.3	U	+/-0.2	0.3	U	+/-0.1	0.2	U	+/-0.2
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23	32.8	U	+/-33.2						
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.1			0.5	UJ		0.5	U	
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.1		+/-0.3	0.5	UJ	+/-0.2	0.5	J	+/-0.21
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	71.4	UJ	+/-18.7	51.1		+/-43.5	83.5		+/-36.3
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.1	UJ	+/-0.2	0.2	U	+/-0.1	0.2	U	+/-0.1
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	0.3	UJ	+/-0.4	0.3	U	+/-0.3	0.5	U	+/-0.3
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.6	UJ	+/-0.3	0.1		+/-0.1	0.2	U	+/-0.1
Tritium	pCi/L	432	157.55119	81%		0	35	43	207	J	+/-187	310	UJ	+/-179	266	J	+/-172
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.8	J	+/-0.4	0.9	U	+/-0.4	0.4	U	+/-0.3
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1	U	+/-0.2	0.2		+/-0.2	0.1	U	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.3	U		0.3			0.1	UJ	

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-45			SW12-46			SW12-47		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12050			12043			12046		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									9-Nov-97			6-Nov-97			7-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY OF	RAD	NUMBER ABOVE	NUMBER OF	NUMBER OF	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	GUIDELINE	RAD	DETECTS	NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	12.2		+/-6.1	19.9	J	+/-8.9	17.7	J	+/-7.5
Cesium-137	pCi/L	0		0%		0	0	47	1.4	U		4.7	U		4.2	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.4	U		0.6	U		0.7	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	5.1	U		9.2		+/-1.6	8.7		+/-1.4
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	0.8		+/-0.8	12.6		+/-2.1	14.5		+/-2.4
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	8.5	J	+/-1	57.4	J	+/-2.2	36.3	J	+/-2
Lead-211	pCi/L	352	51.468478	2%		0	1	47	8.3	U		27.7	U		230	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	18.7	U		17.1	UJ		16.5	J	+/-4.2
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.1	U	+/-0.2	0.3	U	+/-0.2	0.2	U	+/-0.1
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23									
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.1	J		0.6	U		0.2		
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.1	J	+/-0.2	0.6	U	+/-0.2	0.2		+/-0.3
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	103		+/-44.5	106	J	+/-19.5	120	J	+/-21.1
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.1		+/-0.1	0.1	J	+/-0.2	0.3	J	+/-0.5
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	0.4	U	+/-0.2	0.3	UJ	+/-0.3	1.3	UJ	+/-0.1
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.2	U	+/-0.1	0.2	UJ	+/-0.1	0.1	J	+/-0.3
Tritium	pCi/L	432	157.55119	81%		0	35	43	36	J	+/-176	176	J	+/-175	302	J	+/-184
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.6	U	+/-0.3	0.5	U	+/-0.3	0.5	U	+/-0.3
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1		+/-0.1	0.2	U	+/-0.2	0.1	U	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.2			0.5	UJ		0.3	UJ	

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-5			SW12-6			SW12-7		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12036			12022			12021		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									5-Nov-97			3-Nov-97			3-Nov-97		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
PARAMETER	UNIT	MAXIMUM	AVERAGE	OF DETECTION	RAD GUIDELINE	ABOVE RAD	OF DETECTS	OF NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	7.8	J	+/-2.2	14.9	U		9.4		+/-3.3
Cesium-137	pCi/L	0		0%		0	0	47	0.7	U		1.2	U		0.7	U	
Cobalt-57	pCi/L	0		0%		0	0	47	0.3	U		0.2	U		0.7	U	
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	0.3	UJ		3.4	U		2.3	U	
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	2	J	+/-1.6	0.3	U	+/-1	0.6	U	+/-0.8
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	2.3	J	+/-1.6	3.2	U	+/-1.1	6.4	U	+/-1
Lead-211	pCi/L	352	51.468478	2%		0	1	47	14.6	U		13.9	U		31.2	U	
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	10.4	J	+/-3.7	6.9		+/-2.5	9.3		+/-3.3
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.1	U	+/-0.1	0.3	U	+/-0.2	0.2	U	+/-0.1
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23	69.8	U							
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.6	U		0.5	U		0.5	U	
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.6	U	+/-0.2	0.5	U	+/-0.1	0.5	U	+/-0.2
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	79	J	+/-20.4	314	U	+/-108	394	U	+/-109
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.1	U	+/-0.3	0.2	UJ	+/-0.3	1.4	J	+/-0.8
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	1.6	J	+/-0.9	0.5	UJ	+/-0.4	0.7	UJ	+/-0.5
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	0.2	U	+/-0.5	0.2	UJ	+/-0.3	0.1	UJ	+/-0.2
Tritium	pCi/L	432	157.55119	81%		0	35	43	207	J	+/-177	321	U	+/-185	67.6		+/-192
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.5	UJ	+/-0.2	0.4	U	+/-0.3	0.3	U	+/-0.2
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.2	U	+/-0.1	0.1		+/-0.1	0.2	U	+/-0.1
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.1			0.2	U		0.1	U	

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-8			SW12-9			SW12A-1		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12007			12037			SW12A-1		
DEPTH TO TOP OF SAMPLE									0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A		
SAMPLE DATE									27-Oct-97			5-Nov-97			24-Jun-94		
QC CODE									SA			SA			SA		
STUDY ID				FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			ESI		
PARAMETER	UNIT	MAXIMUM	AVERAGE	OF DETECTION	RAD GUIDELINE	ABOVE RAD	OF DETECTS	OF NALYSE									
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47	30.9	U		4.9	J	+/-1.6			
Cesium-137	pCi/L	0		0%		0	0	47	6.6	U		1.5	U				
Cobalt-57	pCi/L	0		0%		0	0	47	0.8	U		0.4	U				
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47	2.3	U		3.8	UJ				
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	3.1	J	+/-5.2	2.8	J	+/-1.5	8		+/-3
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	10.2		+/-3.5	10.3	J	+/-1.6	13		+/-3
Lead-211	pCi/L	352	51.468478	2%		0	1	47	10.3	U		18.9	U				
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47	10.7	UJ	+/-4	9	J	+/-3.7			
Plutonium-239/240	pCi/L	0		0%		0	0	47	0.1	UJ	+/-0.2	0.3	U	+/-0.2			
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23				69.8	U				
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47	0.2			0.6	U				
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47	0.2		+/-0.2	0.6	U	+/-0.2			
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47	294	U	+/-70.5	57.7	J	+/-20.3			
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47	0.4	UJ	+/-0.4	0.8	U	+/-0.1			
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47	0.3	UJ	+/-0.5	1.2	J	+/-0.9			
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47	1	UJ	+/-0.2	0.9	U	+/-0.1			
Tritium	pCi/L	432	157.55119	81%		0	35	43				149	J	+/-180			
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47	0.7	U	+/-0.3	0.4	UJ	+/-0.2			
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47	0.1		+/-0.1	0.1		+/-0.1			
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47	0.7			0.3					

TABLE I-5
SITE RADIOLOGICAL DATA-SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12	
LOCATION ID									SW12A-1			SW12A-2			SW12A-3	
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER	
SAMPLE ID									SW12A-20			SW12A-2			SW12A-3	
DEPTH TO TOP OF SAMPLE									0			0			0	
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A	
SAMPLE DATE									24-Jun-94			11-Jun-94			11-Jun-94	
QC CODE									DU			SA			SA	
STUDY ID				FREQUENCY		NUMBER	NUMBER	NUMBER	ESI			ESI			ESI	
				OF	RAD	ABOVE	OF	OF								
PARAMETER	UNIT	MAXIMUM	AVERAGE	DETECTION	GUIDELINE	RAD	DETECTS	NALYSE								
Bismuth-214	pCi/L	34.6	11.378261	66%		0	31	47								
Cesium-137	pCi/L	0		0%		0	0	47								
Cobalt-57	pCi/L	0		0%		0	0	47								
Cobalt-60	pCi/L	9.2	2.2184783	13%		0	6	47								
Gross Alpha	pCi/L	14.5	2.552551	59%	15	0	30	51	9	+/-3		-1	+/-3		2	+/-3
Gross Beta	pCi/L	80.8	8.4755102	73%		0	37	51	9	+/-3		5	+/-4		6	+/-4
Lead-211	pCi/L	352	51.468478	2%		0	1	47								
Lead-214	pCi/L	28.8	8.3048913	57%		0	27	47								
Plutonium-239/240	pCi/L	0		0%		0	0	47								
Promethium-147	pCi/L	70.6	32.797727	4%		0	1	23								
Radium-223	pCi/L	0.4	0.6021739	28%		0	13	47								
Radium-226	pCi/L	0.5	0.2318478	30%	5	0	14	47								
Radon 222	pCi/L	401	87.96413	64%	300	4	30	47								
Thorium-227	pCi/L	1.4	0.2336957	19%		0	9	47								
Thorium-230	pCi/L	2.2	0.4586957	17%		0	8	47								
Thorium-232	pCi/L	0.4	0.2108696	26%		0	12	47								
Tritium	pCi/L	432	157.55119	81%		0	35	43								
Uranium-234	pCi/L	1	0.3668478	28%	124846.8	0	13	47								
Uranium-235	pCi/L	0.2	0.088587	26%	43.4	0	12	47								
Uranium-238	pCi/L	0.7	0.1902174	47%	6.7	0	22	47								

TABLE I-6
SITE RADIOLOGICAL DATA- SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID									SW12-51			SW12-52			SW12-53			SW12-54		
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER			SURFACE WATER		
SAMPLE ID									12210			12069			12070			12071		
DEPTH TO TOP OF SAMPLE									0			0			0			0		
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A			N/A		
SAMPLE DATE									11-Nov-97			10-Dec-97			10-Dec-97			10-Dec-97		
QC CODE									DU			SA			SA			SA		
STUDY ID				FREQUENCY OF DETECTION	RAD GUIDELINE	NUMBER ABOVE RAD	NUMBER OF DETECTS	NUMBER OF NALYSE	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
PARAMETER	UNIT	MAXIMUM	AVERAGE																	
Bismuth-214	pCi/L	33.7	20.525	83%		0	10	12	16.7	J	+/-4.2	17.4	J	+/-7.4	15.9	J	+/-6.8	20.8	J	+/-6.9
Cesium-137	pCi/L	0		0%		0	0	12	5.3	U		1.5	U		4	U		2.7	U	
Cobalt-57	pCi/L	0		0%		0	0	12	0.3	U		0.5	U		0.7	U		0.5	U	
Cobalt-60	pCi/L	0		0%		0	0	12	5.6	U		1.8	U		2.8	U		1.9	U	
Gross Alpha	pCi/L	2.2	1.3045455	50%	15	0	6	12	1.1	J	+/-1.8	0.9		+/-1.8	3.2	U	+/-1.9	0.2	U	+/-1.7
Gross Beta	pCi/L	24.6	8.0772727	67%		0	8	12	6.1	J	+/-1.8	9		+/-1.5	2.5	U	+/-1.5	2.3	U	+/-1.9
Lead-211	pCi/L	0		0%		0	0	12	447	U		28.6	U		339	U		21.8	U	
Lead-214	pCi/L	20.5		67%		0	8	12	10	J	+/-3.1	15.1	U		16.1		+/-5.5	20.5		+/-6.4
Plutonium-239/240	pCi/L	0		0%		0	0	12	0.1	U	+/-0.1	0.1	U	+/-0.1	0.2	U	+/-0.2	0.1	U	+/-0.2
Radium-223	pCi/L	0.2	0.2318182	25%		0	3	12	0.2			0.5	U		0.5	U		0.5	U	
Radium-226	pCi/L	0.2	0.2413636	25%	5	0	3	12	0.2	J	+/-0.2	0.5	UJ	+/-0.15	0.5	UJ	+/-0.18	0.5	UJ	+/-0.09
Radon 222	pCi/L	106	44.609091	100%	300	0	12	12	38.8	J	+/-33.5	11.8		+/-30.7	36.4		+/-31.6	35.9		+/-32
Thorium-227	pCi/L	0.1	0.1181818	8%		0	1	12	0.2	U	+/-0.1	0.1	UJ	+/-0.1	0.2	U	+/-0.2	0.1	U	+/-0.2
Thorium-230	pCi/L	0.8	0.2045455	8%		0	1	12	0.6	U	+/-0.4	0.2	U	+/-0.1	0.3	U	+/-0.2	0.4	U	+/-0.2
Thorium-232	pCi/L	0.1	0.0772727	50%		0	6	12	0.2	UJ	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1
Tritium	pCi/L	324	188.92273	100%		0	12	12	81.1	J	+/-174	324	J	+/-173	140	J	+/-165	243	J	+/-171
Uranium-234	pCi/L	1.1	0.3863636	50%	124846.8	0	6	12	1.1	J	+/-0.4	0.6		+/-0.3	0.8		+/-0.4	0.5		+/-0.3
Uranium-235	pCi/L	0.3	0.1136364	58%	43.4	0	7	12	0.2	UJ	+/-0.1	0.1	U	+/-0.1	0.1	U	+/-0.1	0.1		+/-0.1
Uranium-238	pCi/L	0.6	0.3454545	100%	6.7	0	12	12	0.4	J		0.2			0.1			0.2		

TABLE I-6
SITE RADIOLOGICAL DATA- SURFACE WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY									SEAD-12			SEAD-12			SEAD-12			SEAD-12	
LOCATION ID									SW12-55			SW12-56			SW12-57			SW12-58	
MATRIX									SURFACE WATER			SURFACE WATER			SURFACE WATER			SURFACE WATER	
SAMPLE ID									12068			12067			12066			12065	
DEPTH TO TOP OF SAMPLE									0			0			0			0	
DEPTH OF BOTTOM OF SAMPLE									N/A			N/A			N/A			N/A	
SAMPLE DATE									9-Dec-97			9-Dec-97			9-Dec-97			9-Dec-97	
QC CODE									SA			SA			SA			SA	
STUDY ID				FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1	
PARAMETER	UNIT	MAXIMUM	AVERAGE	OF DETECTION	RAD GUIDELINE	ABOVE RAD	OF DETECTS	OF NALYSE											
Bismuth-214	pCi/L	33.7	20.525	83%		0	10	12	16.2	J	+/-5.7	18.1	J	+/-6 5	25.1	J	+/-6.5	31.6	J
Cesium-137	pCi/L	0		0%		0	0	12	1.5	U		1.5	U		1 1	U		2 5	U
Cobalt-57	pCi/L	0		0%		0	0	12	0 4	U		0.7	U		0.8	U		0.8	U
Cobalt-60	pCi/L	0		0%		0	0	12	5.2	U		0.6	U		5.4	U		3 7	U
Gross Alpha	pCi/L	2.2	1.3045455	50%	15	0	6	12	0.7		+/-1.7	0.7		+/-1.7	0.3	U	+/-2	3.2	U
Gross Beta	pCi/L	24.6	8.0772727	67%		0	8	12	2.7	U	+/-1.6	2.8	U	+/-1.6	24.6		+/-2.5	10.1	
Lead-211	pCi/L	0		0%		0	0	12	545	U		32.3	U		119	U		27.7	U
Lead-214	pCi/L	20.5		67%		0	8	12	19.6	U		13.9		+/-5.6	16.9		+/-4 1	20	
Plutonium-239/240	pCi/L	0		0%		0	0	12	0.1	U	+/-0.1	0.3	U	+/-0.2	0.3	U	+/-0.1	0.2	U
Radium-223	pCi/L	0.2	0.2318182	25%		0	3	12	0.5	U		0.5	U		0.5	U		0.5	U
Radium-226	pCi/L	0.2	0.2413636	25%	5	0	3	12	0.5	UJ	+/-0.18	0.5	UJ	+/-0.21	0.5	UJ	+/-0.18	0.5	UJ
Radon 222	pCi/L	106	44.609091	100%	300	0	12	12	21.6		+/-35.4	21		+/-35.1	62.5		+/-36	73.3	
Thorium-227	pCi/L	0.1	0.1181818	8%		0	1	12	0.2	U	+/-0.2	0.3	U	+/-0.1	0.3	U	+/-0.1	0.1	U
Thorium-230	pCi/L	0.8	0.2045455	8%		0	1	12	0.2	U	+/-0.2	0.8		+/-0.4	0.3	U	+/-0 2	0.4	U
Thorium-232	pCi/L	0.1	0.0772727	50%		0	6	12	0.1	U	+/-0.1	0.1		+/-0.1	0.1		+/-0.1	0.1	U
Tritium	pCi/L	324	188.92273	100%		0	12	12	261	J	+/-169	270	J	+/-170	234	J	+/-170	207	J
Uranium-234	pCi/L	1.1	0.3863636	50%	124846.8	0	6	12	0.4	U	+/-0.3	0.4	U	+/-0 2	0.5		+/-0.4	0.3	UJ
Uranium-235	pCi/L	0.3	0 1136364	58%	43.4	0	7	12	0.1		+/-0.1	0.1		+/-0 1	0.3	U	+/-0.1	0.2	UJ
Uranium-238	pCi/L	0.6	0.3454545	100%	6.7	0	12	12	0.3			0.4			0.3			0 4	J

APPENDIX J

BACKGROUND , PHASE I RI CHEMICAL AND RADIOLOGICAL DATA-GROUND WATER

- **TABLE J-1: BACKGROUND METALS DATA-GROUND WATER**
- **TABLE J-2: SITE CHEMICAL DATA-GROUND WATER**
- **TABLE J-3: BACKGROUND RADIOLOGICAL DATA-GROUND WATER**
- **TABLE J-4: SITE RADIOLOGICAL DATA-GROUND WATER**

SPECIFIC NOTES-

THE SAMPLE DEPTH TO TOP OF SAMPLE AND TO BOTTOM ON ALL TABLES ARE IN FEET.

CHEMICAL CRITERIA BASED ON NYSDEC CLASS GA STDS. FOR GROUND WATER.

GROSS ALPHA VALUES ARE BASED ON EPA MCL AND NYSDEC CLASS GA STDS.

GROSS BETA VALUES ARE BASED ON NYSDEC CLASS GA STDS.

RADIUM-226 = 3 pCi/L PER NYSDEC CLASS GA STDS.

RADIUM-226 AND-228 = 5 pCi/L TOTAL FOR NYSDEC CLASS GA AND EPA MCL STDS.

RADON-222 = 300 pCi/L FOR PROPOSED EPA MCL .

GROSS ALPHA VALUES BASED ON EPA MCL AND NYSDEC CLASS GA STDS.

GROSS BETA VALUES BASED ON NYSDEC CLASS GA AND EPA MCL STDS.

RADIUM-223 = 3 pCi/L NYSDEC CLASS GA STDS.

RADIUM-226 AND –228 = 5 pCi/L TOTAL FOR NYSDEC CLASS GA AND EPA MCL STDS.

RADON-222 = 300 pCi/L FOR NYSDEC CLASS GA AND EPA MCL STDS.

URANIUM-234 = 124847 pCi/L , URANIUM-235 = 43.4pCi/L, AND URANIUM-238 = 6.7 pCi/L FOR PROPOSED EPA MCL STDS.
[CONVERSION COMPLETED USING THE EQUATION; $mg/L_{water} = (2.8 \times 10^{-15}) \times A \times T_{1/2} \times pCi/L$]

LABORATORY RESULTS FOR URANIUM-233/234 AND –234 WERE COMBINED IN THIS TABLE.

TABLE J-1
BACKGROUND METALS DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

STUDY ID:								3Q93		RI PHASE1		ESI		ESI	
LOC ID:								MW-35		MW-35		MW11-1		MW13-1	
QC CODE:								SA		SA		SA		SA	
SAMP. DETH TOP:								NONE		NONE		NONE		NONE	
SAMP. DEPTH BOT:								NONE		NONE		NONE		NONE	
MATRIX:				NYSDEC	NUMBER	NUMBER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
SAMP ID:	UNIT		FREQUENCY OF	STANDARD	STANDARD ABOVE	DETECTS OF	NUMBER OF	MW35OB3Q93M		MW-35GW		MW11-1-1		MW13-1-1	
PARAMETER	UNIT	MAXIMUM	DETECTION	TAGM	TAGM	DETECTS	ANALYSES								
METALS															
Aluminum	UG/L	42400	87%		0	27	31	207		7550	J	53.7	J	42400	
Antimony	UG/L	52.7	13%		0	4	31	16.8	U	55.5	U	21.4	U	33.9	J
Arsenic	UG/L	10	13%	25	0	4	31	1	B	3.5	U	0.8	U	9.3	J
Barium	UG/L	337	94%	1000	0	29	31	97.3	B	103	J	25.2	J	337	
Beryllium	UG/L	2.2	13%		0	4	31	0.3	U	1.8	R	0.4	U	2.2	J
Cadmium	UG/L	0	0%	10	0	0	31	2.4	U	2.9	U	2.1	U	2.1	U
Calcium	UG/L	181000	100%		0	31	31	108000		94700		97500		181000	
Chromium	UG/L	69.4	48%	50	1	15	31	3.3	U	15.3	R	2.6	U		
Cobalt	UG/L	34.6	45%		0	14	31	2.7	U	19.9	J	4.4	U	34.6	J
Copper	UG/L	32.5	48%	200	0	15	31	2.1	U	14.4	U	3.1	U	23.3	J
Cyanide	UG/L	2.8	3%	100	0	1	31	2.8	B	10	UJ	5	U	5	U
Iron	UG/L	69400	100%	300	22	31	31					41.4	J	69400	
Lead	UG/L	34.8	32%	25	1	10	31	2.8	B	3.3		1.1	J	34.8	
Magnesium	UG/L	58200	100%		0	31	31	15600		14600		29700		50300	
Manganese	UG/L	1120	97%	300	8	30	31	23.4		557	J	278		1120	
Mercury	UG/L	0.06	23%	0.7	0	7	31	0.1	U	0.18	R	0.04	U	0.05	J
Nickel	UG/L	99.8	61%	100	0	19	31	8.3	U	15.9	U	4	U	99.8	
Potassium	UG/L	10200	94%		0	29	31	1400	B	4180	J	7100		10100	
Selenium	UG/L	3.6	19%	10	0	6	31	1.2	B	1.1	J	0.7	U	3.6	J
Silver	UG/L	0.98	6%	50	0	2	31	2.6	U	9	U	4.2	U	4.2	U
Sodium	UG/L	59400	97%	20000	7	30	31	13400		44100		4860	J	9350	
Thallium	UG/L	4.7	13%		0	4	31	1.2	U	3.2	U	1.2	U	1.2	U
Vanadium	UG/L	70.8	52%		0	16	31	3	U	30.3	U	3.7	U	70.8	
Zinc	UG/L	143	84%	300	0	26	31	72.7		58.2		21.4		143	

TABLE J-1
BACKGROUND METALS DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

STUDY ID:								ESI		RI ROUND1		RI ROUND2		RI ROUND1	
LOC ID:								MW13-6		MW16-1		MW16-1		MW17-1	
QC CODE:								SA		SA		SA		SA	
SAMP. DETH TOP:								NONE		3.3		731.5		3.4	
SAMP. DEPTH BOT:								NONE		5.3		728.4		7.4	
MATRIX:				NYSDEC	NUMBER	NUMBER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
SAMP ID:	UNIT		FREQUENCY OF	STANDARD	STANDARD ABOVE	DETECTS OF	NUMBER OF	MW13-6-1		16101		16152		16108	
PARAMETER	UNIT	MAXIMUM	DETECTION	TAGM	TAGM	DETECTS	ANALYSES								
METALS															
Aluminum	UG/L	42400	87%		0	27	31	2810		1850		143	U	90.4	
Antimony	UG/L	52.7	13%		0	4	31	52.7	J	2	U	3	U	2	U
Arsenic	UG/L	10	13%	25	0	4	31	1.4	U	2.7	U	4.4	U	2.7	U
Barium	UG/L	337	94%	1000	0	29	31	34.3	J	74.2		48.2	U	85	
Beryllium	UG/L	2.2	13%		0	4	31	0.4	U	0.23		0.2	U	0.26	
Cadmium	UG/L	0	0%	10	0	0	31	2.1	U	0.3	U	0.6	U	0.3	U
Calcium	UG/L	181000	100%		0	31	31	81500		157000		116000		108000	
Chromium	UG/L	69.4	48%	50	1	15	31	6.1	J	2.7		1	U	1	U
Cobalt	UG/L	34.6	45%		0	14	31	4.4	U	2.1		1.3	U	1.2	U
Copper	UG/L	32.5	48%	200	0	15	31	3.1	U	4.9		1.9	U	3.1	
Cyanide	UG/L	2.8	3%	100	0	1	31	5	U	5	U	5	UJ	5	U
Iron	UG/L	69400	100%	300	22	31	31	4550		2400	J	296		119	
Lead	UG/L	34.8	32%	25	1	10	31	1.5	J	1.7	U	1.5	U	1.7	U
Magnesium	UG/L	58200	100%		0	31	31	51500		23300		17600		22600	
Manganese	UG/L	1120	97%	300	8	30	31	376		210		64.2		21.3	
Mercury	UG/L	0.06	23%	0.7	0	7	31	0.04	U	0.1	U	0.1	U	0.1	U
Nickel	UG/L	99.8	61%	100	0	19	31	8.6	J	4.7		2.5	U	1.8	
Potassium	UG/L	10200	94%		0	29	31	6780	J	1670		998	U	472	
Selenium	UG/L	3.6	19%	10	0	6	31	2.3	J	2.4	U	4.7	UJ	2.4	U
Silver	UG/L	0.98	6%	50	0	2	31	4.2	U	1.3	U	1.5	U	1.3	U
Sodium	UG/L	59400	97%	20000	7	30	31	7880		8750		3870	U	9290	
Thallium	UG/L	4.7	13%		0	4	31	1.2	U	4.2	U	5.9	U	4.4	
Vanadium	UG/L	70.8	52%		0	16	31	5.9	J	3.3		1.6	U	1.2	U
Zinc	UG/L	143	84%	300	0	26	31	50.6		15.6	R	5.8	U	2.5	R

TABLE J-1
BACKGROUND METALS DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

STUDY ID:								RI ROUND2		RI ROUND1		RI ROUND2		ESI	
LOC ID:								MW17-1		MW25-6		MW25-6		MW26-1	
QC CODE:								SA		SA		SA		SA	
SAMP. DETH TOP:								731.1		NONE		NONE		NONE	
SAMP. DEPTH BOT:								727.1		NONE		NONE		NONE	
MATRIX:				NYSDEC	NUMBER	NUMBER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
SAMP ID:	UNIT		FREQUENCY OF	STANDARD	STANDARD ABOVE	DETECTS OF	NUMBER OF	16171		MW25-6		25008		MW26-1-1	
PARAMETER	UNIT	MAXIMUM	DETECTION	TAGM	TAGM	DETECTS	ANALYSES								
METALS															
Aluminum	UG/L	42400	87%		0	27	31	386		162		529		188	J
Antimony	UG/L	52.7	13%		0	4	31	3	U	2.2	U	2.3	U	21.5	U
Arsenic	UG/L	10	13%	25	0	4	31	4.4	U	2.1	U	3.5	U	0.8	U
Barium	UG/L	337	94%	1000	0	29	31	90.4	U	85.6		72.3		31.9	J
Beryllium	UG/L	2.2	13%		0	4	31	0.2	U	0.27	U	0.13	U	0.4	U
Cadmium	UG/L	0	0%	10	0	0	31	0.6	U	0.3	U	0.32	U	2.1	U
Calcium	UG/L	181000	100%		0	31	31	104000		133000		118000		115000	
Chromium	UG/L	69.4	48%	50	1	15	31	1	U	2.2		1.3	U	2.6	U
Cobalt	UG/L	34.6	45%		0	14	31	2	U	1.3		1.1	U	4.4	U
Copper	UG/L	32.5	48%	200	0	15	31	1.1	U	0.99		1.1		3.1	U
Cyanide	UG/L	2.8	3%	100	0	1	31	5	UJ	5	U	5	UJ	5	U
Iron	UG/L	69400	100%	300	22	31	31	[illegible]	J	**308**		**623**		286	
Lead	UG/L	34.8	32%	25	1	10	31	1.5	U	4.4		1.1	U	0.5	U
Magnesium	UG/L	58200	100%		0	31	31	22900		35900		32900		16700	
Manganese	UG/L	1120	97%	300	8	30	31	9.7	U	56		22		**529**	
Mercury	UG/L	0.06	23%	0.7	0	7	31	0.1	U	0.02	U	0.1	U	0.05	J
Nickel	UG/L	99.8	61%	100	0	19	31	2.5	U	2.6		1.7	U	4	U
Potassium	UG/L	10200	94%		0	29	31	843	U	1840	J	1420		10200	
Selenium	UG/L	3.6	19%	10	0	6	31	4.7	UJ	3.7	U	3.4	U	0.7	U
Silver	UG/L	0.98	6%	50	0	2	31	1.5	U	0.8	U	1.1	U	4.2	U
Sodium	UG/L	59400	97%	20000	7	30	31	8190		**20400**	J	16500		**30300**	
Thallium	UG/L	4.7	13%		0	4	31	4.1	U	3	U	3.5	U	1.2	U
Vanadium	UG/L	70.8	52%		0	16	31	1.6	U	1.4		1.2	U	3.7	U
Zinc	UG/L	143	84%	300	0	26	31	14.4	U	7.5		2.2		26.7	

TABLE J-1
BACKGROUND METALS DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

STUDY ID:								RI ROUND1		RI ROUND2		ESI		ESI	
LOC ID:								MW26-1		MW26-1		MW4-1		MW44A-1	
QC CODE:								SA		SA		SA		SA	
SAMP. DETH TOP:								NONE		NONE		NONE		NONE	
SAMP. DEPTH BOT:								NONE		NONE		NONE		NONE	
MATRIX:				NYSDEC	NUMBER	NUMBER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
SAMP ID:	UNIT		FREQUENCY	STANDARD	STANDARD	DETECTS	NUMBER	MW26-1		26001		MW4-1-1		MW44A-1-1	
PARAMETER	UNIT	MAXIMUM	OF DETECTION	TAGM	ABOVE TAGM	OF DETECTS	OF ANALYSES								
METALS															
Aluminum	UG/L	42400	87%		0	27	31	457		38.7		41.9	U	69	J
Antimony	UG/L	52.7	13%		0	4	31	2.2	U	1.4		21.6	U	1.3	U
Arsenic	UG/L	10	13%	25	0	4	31	2.1	U	4	U	2.2	J	2	U
Barium	UG/L	337	94%	1000	0	29	31	33.2		29.9		19.6	J	102	J
Beryllium	UG/L	2.2	13%		0	4	31	0.27	U	0.1	U	0.4	U	0.1	U
Cadmium	UG/L	0	0%	10	0	0	31	0.3	U	0.3	U	2.1	U	0.2	U
Calcium	UG/L	181000	100%		0	31	31	121000		110000		137000		92200	
Chromium	UG/L	69.4	48%	50	1	15	31	4.7		0.73		2.6	U	0.4	U
Cobalt	UG/L	34.6	45%		0	14	31	1.1		0.9	U	4.6	J	0.5	U
Copper	UG/L	32.5	48%	200	0	15	31	5.7		1	U	3.1	U	0.5	U
Cyanide	UG/L	2.8	3%	100	0	1	31	5	U	5	U	5	U	5	U
Iron	UG/L	69400	100%	300	22	31	31	[illegible]		58.4	J	332		114	J
Lead	UG/L	34.8	32%	25	1	10	31	7.8		1.9	U	0.5	U	0.9	U
Magnesium	UG/L	58200	100%		0	31	31	16600		15500		57600		19000	
Manganese	UG/L	1120	97%	300	8	30	31	27.5		2.5		346		18.2	
Mercury	UG/L	0.06	23%	0.7	0	7	31	0.02	U	0.2	U	0.04	U	0.04	U
Nickel	UG/L	99.8	61%	100	0	19	31	6.2		1.6	U	4	U	0.7	U
Potassium	UG/L	10200	94%		0	29	31	3620		3860	J	7380		1050	J
Selenium	UG/L	3.6	19%	10	0	6	31	3.7	U	3.4	U	2.1	J	2.7	U
Silver	UG/L	0.98	6%	50	0	2	31	0.8	U	1.3	U	4.2	U	0.5	U
Sodium	UG/L	59400	97%	20000	7	30	31	24600		34900		11700		2310	J
Thallium	UG/L	4.7	13%		0	4	31	4.3		4.7	U	1.2	U	1.9	U
Vanadium	UG/L	70.8	52%		0	16	31	1.3	J	1.1	U	3.7	U	0.5	U
Zinc	UG/L	143	84%	300	0	26	31	20.5		3.1	J	19.1	J	3.8	J

TABLE J-1
BACKGROUND METALS DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

STUDY ID:								ESI		ESI		ESI		ESI	
LOC ID:								MW44B-1		MW57-1		MW58-1		MW64A-1	
QC CODE:								SA		SA		SA		SA	
SAMP. DETH TOP:								NONE		NONE		NONE		NONE	
SAMP. DEPTH BOT:								NONE		NONE		NONE		NONE	
MATRIX:				NYSDEC	NUMBER	NUMBER		GROUNDWATE		GROUNDWATER		GROUNDWATER		GROUNDWATER	
SAMP ID:	UNIT		FREQUENCY OF	STANDARD	STANDARD ABOVE	DETECTS OF	NUMBER OF	MW44B-1-1		MW57-1-1		MW58-1-1		MW64A-1-1G	
PARAMETER	UNIT	MAXIMUM	DETECTION	TAGM	TAGM	DETECTS	ANALYSES								
METALS															
Aluminum	UG/L	42400	87%		0	27	31	288	J	4200		440		398	
Antimony	UG/L	52.7	13%		0	4	31	1.3	U	44.7	J	1.3	U	1.3	U
Arsenic	UG/L	10	13%	25	0	4	31	2	U	1.4	U	2	U	2	U
Barium	UG/L	337	94%	1000	0	29	31	72.6	J	36.5	J	71.9	J	42	J
Beryllium	UG/L	2.2	13%		0	4	31	0.1	U	0.4	U	0.1	U	0.1	U
Cadmium	UG/L	0	0%	10	0	0	31	0.2	U	2.1	U	0.2	U	0.2	U
Calcium	UG/L	181000	100%		0	31	31	120000		82000		113000		109000	
Chromium	UG/L	69.4	48%	50	1	15	31	0.4	U	7.7	J	0.82	J	0.49	J
Cobalt	UG/L	34.6	45%		0	14	31	0.91	J	4.4	U	0.64	J	0.5	U
Copper	UG/L	32.5	48%	200	0	15	31	0.5	U	3.1	U	1.5	J	0.61	J
Cyanide	UG/L	2.8	3%	100	0	1	31	5	U	5	U	5	U	5	U
Iron	UG/L	69400	100%	300	22	31	31	[redacted]		6360		678		[redacted]	J
Lead	UG/L	34.8	32%	25	1	10	31	0.9	U	2.1	J	0.89	U	0.89	U
Magnesium	UG/L	58200	100%		0	31	31	31800		11400		17300		16800	
Manganese	UG/L	1120	97%	300	8	30	31	219		245		84		28.3	
Mercury	UG/L	0.06	23%	0.7	0	7	31	0.04	U	0.04	U	0.04	U	0.04	J
Nickel	UG/L	99.8	61%	100	0	19	31	0.73	J	8.2	J	1.6	J	1	J
Potassium	UG/L	10200	94%		0	29	31	2150	J	3860	J	1460	J	1790	J
Selenium	UG/L	3.6	19%	10	0	6	31	2.7	U	0.69	U	2.7	U	2.7	U
Silver	UG/L	0.98	6%	50	0	2	31	0.68	J	4.2	U	0.5	U	0.5	U
Sodium	UG/L	59400	97%	20000	7	30	31	7190		4080	J	4180	J	2180	J
Thallium	UG/L	4.7	13%		0	4	31	4.7	J	1.2	U	1.9	U	1.9	U
Vanadium	UG/L	70.8	52%		0	16	31	0.5	U	7.6	J	0.81	J	1.3	J
Zinc	UG/L	143	84%	300	0	26	31	2.2	U	57.4		7.1	J	3.9	J

TABLE J-1
BACKGROUND METALS DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

STUDY ID:								ESI		ESI		ESI		RI PHASE2	
LOC ID:								MW64B-1		MW64C-9		MW64D-1		PT-10	
QC CODE:								SA		SA		SA		SA	
SAMP. DETH TOP:								NONE		NONE		NONE		NONE	
SAMP. DEPTH BOT:								NONE		NONE		NONE		NONE	
MATRIX:								GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
SAMP ID:	UNIT		FREQUENCY OF DETECTION	NYSDEC STANDARD	NUMBER STANDARD ABOVE TAGM	NUMBER DETECTS OF DETECTS	NUMBER OF ANALYSES	MW64B-1-1G		MW64C-9-1		MW64D-1-1		PT10GW1	
PARAMETER	UNIT	MAXIMUM		TAGM											
METALS															
Aluminum	UG/L	42400	87%		0	27	31	198	J	38.2	J	177	J	72	U
Antimony	UG/L	52.7	13%		0	4	31	1.3	U	1.3	U	1.3	U	49.5	UJ
Arsenic	UG/L	10	13%	25	0	4	31	2	U	2	U	2	U	1.4	UJ
Barium	UG/L	337	94%	1000	0	29	31	104	J	20.4	J	88.6	J	193	J
Beryllium	UG/L	2.2	13%		0	4	31	0.1	U	0.1	U	0.1	U	0.89	U
Cadmium	UG/L	0	0%	10	0	0	31	0.2	U	0.2	U	0.2	U	2.8	U
Calcium	UG/L	181000	100%		0	31	31	138000		121000		142000		79100	
Chromium	UG/L	69.4	48%	50	1	15	31	0.41	J	0.4	U	0.4	U	2.7	UJ
Cobalt	UG/L	34.6	45%		0	14	31	1.1	J	0.5	U	0.69	J	5.4	U
Copper	UG/L	32.5	48%	200	0	15	31	1	J	0.55	J	0.5	U	4.7	U
Cyanide	UG/L	2.8	3%	100	0	1	31	5	U	5	U	5	U	10	UJ
Iron	UG/L	69400	100%	300	22	31	31	400		681		440		85.6	J
Lead	UG/L	34.8	32%	25	1	10	31	0.9	U	0.9	U	0.9	U	0.79	U
Magnesium	UG/L	58200	100%		0	31	31	45600		49400		14800		34200	
Manganese	UG/L	1120	97%	300	8	30	31	98.9		96		223		124	
Mercury	UG/L	0.06	23%	0.7	0	7	31	0.04	U	0.04	U	0.04	U	0.09	UJ
Nickel	UG/L	99.8	61%	100	0	19	31	1.4	J	1.2	J	1.4	J	7.4	UJ
Potassium	UG/L	10200	94%		0	29	31	4780	J	1670	J	3340	J	2870	J
Selenium	UG/L	3.6	19%	10	0	6	31	2.7	U	2.7	U	2.7	U	0.99	UJ
Silver	UG/L	0.98	6%	50	0	2	31	0.5	U	0.5	U	0.5	U	5.4	U
Sodium	UG/L	59400	97%	20000	7	30	31	8140		6420		12300		41100	
Thallium	UG/L	4.7	13%		0	4	31	1.9	U	1.9	U	2.2	J		
Vanadium	UG/L	70.8	52%		0	16	31	0.73	J	0.61	J	0.69	J	6.7	UJ
Zinc	UG/L	143	84%	300	0	26	31	3.9	J	3.9	J	3.8	J	8.8	J

TABLE J-1
BACKGROUND METALS DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

STUDY ID:								ESI		QUARTERLY		ESI		ESI	
LOC ID:								MW24-1		MW45-4		MW60-1		MW62-1	
QC CODE:								SA		SA		SA		SA	
SAMP. DETH TOP:								NONE		NONE		NONE		NONE	
SAMP. DEPTH BOT:								NONE		NONE		NONE		NONE	
MATRIX:				NYSDEC	NUMBER	NUMBER		GROUNDWATER		GROUNDWATER		GROUNDWATER		GROUNDWATER	
SAMP ID:	UNIT		FREQUENCY OF	STANDARD	STANDARD ABOVE	DETECTS OF	NUMBER OF	MW24-1		OB108		MW60-1		MW62-1	
PARAMETER	UNIT	MAXIMUM	DETECTION	TAGM	TAGM	DETECTS	ANALYSES.								
METALS															
Aluminum	UG/L	42400	87%		0	27	31	19100		36.8	U	348		499	
Antimony	UG/L	52.7	13%		0	4	31	21.5	U	2.8	U	1.3	U	1.3	U
Arsenic	UG/L	10	13%	25	0	4	31	10		3.6	U	2	U	2	U
Barium	UG/L	337	94%	1000	0	29	31	156	J	23.4		88.7	J	68.1	J
Beryllium	UG/L	2.2	13%		0	4	31	0.89	J	0.1	U	0.1	U	0.1	U
Cadmium	UG/L	0	0%	10	0	0	31	2.1	U	0.4	U	0.2	U	0.2	U
Calcium	UG/L	181000	100%		0	31	31	180000		112000		95100		91700	
Chromium	UG/L	69.4	48%	50	1	15	31	29.8		1.3	U	0.56	J	1.4	J
Cobalt	UG/L	34.6	45%		0	14	31	18.7	J	1.4	U	0.5	U	2.5	J
Copper	UG/L	32.5	48%	200	0	15	31	32.5		1.5		0.5	U	0.54	J
Cyanide	UG/L	2.8	3%	100	0	1	31	5	U			5	U	5	UJ
Iron	UG/L	69400	100%	300	22	31	31	32000		62.8		1290		797	J
Lead	UG/L	34.8	32%	25	1	10	31	7		2	U	0.9	U	0.89	U
Magnesium	UG/L	58200	100%		0	31	31	39800		24200		31100		58200	
Manganese	UG/L	1120	97%	300	8	30	31	712		5	J	377		271	
Mercury	UG/L	0.06	23%	0.7	0	7	31	0.06	J	0.2	U	0.05	J	0.05	J
Nickel	UG/L	99.8	61%	100	0	19	31	41.4		2.2		0.7	U	3.9	J
Potassium	UG/L	10200	94%		0	29	31	9220		2180		8760		7470	J
Selenium	UG/L	3.6	19%	10	0	6	31	2.5	J	3.1	U	2.7	U	2.7	U
Silver	UG/L	0.98	6%	50	0	2	31	4.2	U	0.98		0.5	U	0.5	U
Sodium	UG/L	59400	97%	20000	7	30	31	5950		10600		59400		18100	
Thallium	UG/L	4.7	13%		0	4	31	1.2	U	4	U	1.9	U	1.9	U
Vanadium	UG/L	70.8	52%		0	16	31	30.9	J	1.2	U	1	J	1.8	J
Zinc	UG/L	143	84%	300	0	26	31	107		6.8		6.9	J	4.2	J

TABLE J-1
BACKGROUND METALS DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

STUDY ID:								ESI		ESI		ESI	
LOC ID:								MW63-1		MW67-1		MW70-1	
QC CODE:								SA		SA		SA	
SAMP. DETH TOP:								NONE		NONE		NONE	
SAMP. DEPTH BOT:								NONE		NONE		NONE	
MATRIX:								GROUNDWATER		GROUNDWATER		GROUNDWATER	
SAMP ID:	UNIT		FREQUENCY OF	NYSDEC STANDARD	NUMBER STANDARD ABOVE	NUMBER DETECTS OF	NUMBER OF	MW63-1		MW67-2		MW70-1	
PARAMETER	UNIT	MAXIMUM	DETECTION	TAGM	TAGM	DETECTS	ANALYSES						
METALS													
Aluminum	UG/L	42400	87%		0	27	31	747		1240		88.2	J
Antimony	UG/L	52.7	13%		0	4	31	1.3	U	1.3	U	1.3	U
Arsenic	UG/L	10	13%	25	0	4	31	2	U	2	U	2	U
Barium	UG/L	337	94%	1000	0	29	31	72.6	J	100	J	86.5	J
Beryllium	UG/L	2.2	13%		0	4	31	0.1	U	0.1	U	0.1	U
Cadmium	UG/L	0	0%	10	0	0	31	0.2	U	0.2	U	0.2	U
Calcium	UG/L	181000	100%		0	31	31	89400		119000		119000	
Chromium	UG/L	69.4	48%	50	1	15	31	1.1	J	2	J	0.4	U
Cobalt	UG/L	34.6	45%		0	14	31	6.2	J	1.4	J	0.5	U
Copper	UG/L	32.5	48%	200	0	15	31	2.1	J	1.5	J	0.5	U
Cyanide	UG/L	2.8	3%	100	0	1	31	5	U	5	U	5	U
Iron	UG/L	69400	100%	300	22	31	31	[illegible]		2270		213	
Lead	UG/L	34.8	32%	25	1	10	31	1.1	J	0.9	U	0.9	U
Magnesium	UG/L	58200	100%		0	31	31	16400		24200		28100	
Manganese	UG/L	1120	97%	300	8	30	31	548		153		107	
Mercury	UG/L	0.06	23%	0.7	0	7	31	0.04	U	0.04	U	0.06	J
Nickel	UG/L	99.8	61%	100	0	19	31	9.7	J	2.9	J	1.5	J
Potassium	UG/L	10200	94%		0	29	31	3870	J	1870	J	1540	J
Selenium	UG/L	3.6	19%	10	0	6	31	2.7	U	2.7	U	2.7	U
Silver	UG/L	0.98	6%	50	0	2	31	0.5	U	0.5	U	0.5	U
Sodium	UG/L	59400	97%	20000	7	30	31	5710		13700		5220	
Thallium	UG/L	4.7	13%		0	4	31	1.9	U	1.9	U	1.9	U
Vanadium	UG/L	70.8	52%		0	16	31	1.5	J	2.1	J	0.5	U
Zinc	UG/L	143	84%	300	0	26	31	7.1	J	6.5	J	3.5	J

TABLE J-1A
SEAD-12 BACKGROUND CHEMICAL DATA -GROUNDWATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMEY DEPOT ACTIVITY - ROMULUS NY

		FACILITY						SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
		LOCATION ID						MW12-1		MW12-1		MW12-2		MW12-2		MW12-3		MW12-3	
		MATRIX						GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	
		SAMPLE ID						122033		122225		122034		122223		122035		122224	
		SAMPLE DEPTH TO TOP OF SAMPLE						7.5		9.5		6.5		6.5		18		18	
		SAMPLE DEPTH TO BOTTOM OF SAMPLE						7.5		9.5		6.5		6.5		18		18	
		SAMPLE DATE						4/25/1999		12/2/1999		4/25/1999		12/1/1999		4/25/1999		12/2/1999	
		QC CODE						SA		SA		SA		SA		SA		SA	
		STUDY ID						RI PHASE 1 STEP 1		RI P1 S1 - Pu Resamp		RI PHASE 1 STEP 1		RI P1 S1 - Pu Resamp		RI PHASE 1 STEP 1		RI P1 S1 - Pu Resamp	
			FREQUENCY		NUMBER	NUMBER	NUMBER												
			OF	CLASS GA	ABOVE	OF	OF	1		2		1		2		1		2	
COMPOUND	UNIT	MAXIMU	DETECTION	STANDARD	STANDARD	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Aluminum	UG/L	1740	89%		0	16	18	92.4	J	481		202	J	14.3	U	241	J	21.3	J
Antimony	UG/L	2.7	6%	3	0	1	18	2.2	U	2.7	U	2.2	U	2.7	U	2.2	U	2.7	U
Arsenic	UG/L	4	11%	25	0	2	18	1.8	U	1.9	U	1.8	U	1.9	U	1.8	U	1.9	U
Barium	UG/L	232	100%	1000	0	18	18	47	J	67.4	J	51.6	J	60.8	J	54.8	J	55.8	J
Beryllium	UG/L	0.31	6%		0	1	18	0.1	U	0.2	U	0.1	U	0.2	U	0.1	U	0.2	U
Cadmium	UG/L	1.5	17%	5	0	3	18	0.38	J	0.3	U	1.5	J	0.3	U	0.3	U	0.3	U
Calcium	UG/L	177000	100%		0	18	18	71700	J	85100		90800	J	109000		91400	J	107000	
Chromium	UG/L	2.5	28%	50	0	5	18	1.2	U	0.9	U	1.2	U	0.9	U	1.2	U	0.9	U
Cobalt	UG/L	1.8	6%		0	1	18	1.8	J	2	U	1.5	U	2	U	1.5	U	2	U
Copper	UG/L	99.7	56%	200	0	10	18	2.8	J	5.8	J	1.8	J	7.1	J	1	U	1.7	U
Cyanide	UG/L	0	0%		0	0	18	5	U	10	UJ	5	U	10	UJ	5	U	10	UJ
Iron	UG/L	1320	89%	300	10	16	18	121	J	[illegible]		252	J	25.4	U	[illegible]	J	26.6	J
Lead	UG/L	1	6%	25	0	1	18	0.9	U	1	U	0.9	U	1	U	0.9	U	1	U
Magnesium	UG/L	49200	100%		0	18	18	32100	J	34600		14600	J	16700		28300	J	29800	
Manganese	UG/L	86.8	100%	300	0	18	18	9.2	J	9.5	J	42	J	0.55	J	14.1	J	8.8	J
Mercury	UG/L	0.65	6%	0.7	0	1	18	0.1	U	0.1	UJ	0.65	J	0.1	UJ	0.1	U	0.1	UJ
Nickel	UG/L	12	44%	100	0	8	18	3.6	J	1.7	U	1.4	U	1.7	U	3	J	1.9	J
Potassium	UG/L	2800	100%		0	18	18	1830	J	2260	J	1950	J	1600	J	2460	J	2700	J
Selenium	UG/L	2.7	17%	10	0	3	18	2.2	J	2.4	U	1.8	UJ	2.4	U	1.8	UJ	2.4	U
Silver	UG/L	5.2	11%	50	0	2	18	2.6	J	1.9	UJ	0.9	U	1.9	UJ	0.9	U	1.9	UJ
Sodium	UG/L	26400	100%	20000	2	18	18	3880	J	4650	J	5950	J	7000		4540	J	4310	J
Thallium	UG/L	5.2	22%		0	4	18	4.5	J	2.7	U	1.9	U	2.7	U	1.9	U	2.7	U
Vanadium	UG/L	2.3	11%		0	2	18	1.8	J	1.5	U	1.6	U	1.5	U	1.6	U	1.5	U
Zinc	UG/L	16.8	100%		0	18	18	7.4	J	7.9	J	3.4	J	6.8	J	4.5	J	5.1	J

TABLE J-1A
SEAD-12 BACKGROUND CHEMICAL DATA -GROUNDWATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMEY DEPOT ACTIVITY - ROMULUS NY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-4		MW12-4		MW12-5		MW12-5		MW12-6		MW12-6	
MATRIX								GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	
SAMPLE ID								122036		122222		122037		122221		122042		122220	
SAMPLE DEPTH TO TOP OF SAMPLE								12		12		16		16		9.5		9.5	
SAMPLE DEPTH TO BOTTOM OF SAMPLE								12		12		16		16		9.5		9.5	
SAMPLE DATE								4/25/1999		12/1/1999		4/25/1999		12/1/1999		5/4/1999		12/7/1999	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1 S1 - Pu Resamp		RI PHASE 1 STEP 1		RI P1 S1 - Pu Resamp		RI PHASE 1 STEP 1		RI P1 S1 - Pu Resamp	
COMPOUND	UNIT	MAXIMU	FREQUENCY OF DETECTION	CLASS GA STANDARD	NUMBER ABOVE STANDARD	NUMBER OF DETECTS	NUMBER OF ANALYSES	1 VALUE	(Q)	2 VALUE	(Q)	1 VALUE	(Q)	2 VALUE	(Q)	1 VALUE	(Q)	2 VALUE	(Q)
Aluminum	UG/L	1740	89%		0	16	18	802	J	56.1	J	333	J	18	J	340		260	
Antimony	UG/L	2.7	6%	3	0	1	18	2.2	U	2.7	U	2.7	J	2.7	U	5.2	U	2.7	U
Arsenic	UG/L	4	11%	25	0	2	18	1.8	U	1.9	U	1.8	U	1.9	U	4	J	3.6	J
Barium	UG/L	232	100%	1000	0	18	18	232	J	205		86.6	J	103	J	42.7	J	46.2	J
Beryllium	UG/L	0.31	6%		0	1	18	0.1	U	0.2	U	0.1	U	0.2	U	0.31	J	0.2	U
Cadmium	UG/L	1.5	17%	5	0	3	18	0.3	U	0.3	U	0.3	U	0.3	U	0.8	J	0.3	U
Calcium	UG/L	177000	100%		0	18	18	111000	J	111000		108000	J	123000		100000		108000	
Chromium	UG/L	2.5	28%	50	0	5	18	2.1	J	0.9	U	1.3	J	0.9	U	1.2	U	0.9	U
Cobalt	UG/L	1.8	6%		0	1	18	1.5	U	2	U	1.5	U	2	U	3.3	U	2	U
Copper	UG/L	99.7	56%	200	0	10	18	1	U	1.7	U	1	U	1.7	U	5.2	J	1.7	U
Cyanide	UG/L	0	0%		0	0	18	5	U	10	UJ	5	U	10	UJ	5	U	10	UJ
Iron	UG/L	1320	89%	300	10	16	18	1320	J	170		216	J	38.8	J	1060		981	J
Lead	UG/L	1	6%	25	0	1	18	0.9	U	1	U	0.9	U	1	U	0.9	U	1	U
Magnesium	UG/L	49200	100%		0	18	18	31200	J	30500		47400	J	48500		47800		49200	
Manganese	UG/L	86.8	100%	300	0	18	18	86.8	J	49		33.8	J	10	J	41.2		38.6	
Mercury	UG/L	0.65	6%	0.7	0	1	18	0.1	U	0.1	UJ	0.1	U	0.1	UJ	0.1	U	0.1	UJ
Nickel	UG/L	12	44%	100	0	8	18	2.5	J	1.7	U	12	J	2.9	J	10.2	U	1.7	U
Potassium	UG/L	2800	100%		0	18	18	2270	J	2190	J	1830	J	1840	J	2540	J	2800	J
Selenium	UG/L	2.7	17%	10	0	3	18	1.8	UJ	2.4	U	1.8	UJ	2.4	U	1.8	J	2.4	UJ
Silver	UG/L	5.2	11%	50	0	2	18	0.9	U	1.9	UJ	0.9	U	1.9	UJ	5.2	J	1.9	UJ
Sodium	UG/L	26400	100%	20000	2	18	18	26400	J	21100		9660	J	13600		8740		9100	
Thallium	UG/L	5.2	22%		0	4	18	1.9	U	2.7	U	1.9	U	2.7	U	2.6	U	2.7	U
Vanadium	UG/L	2.3	11%		0	2	18	1.6	U	1.5	U	1.6	U	1.5	U	3.8	U	1.5	U
Zinc	UG/L	16.8	100%		0	18	18	6	J	2.7	J	11.1	J	6	J	7.2	J	4.4	J

TABLE J-1A
SEAD-12 BACKGROUND CHEMICAL DATA -GROUNDWATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMEY DEPOT ACTIVITY - ROMULUS NY

		FACILITY						B-GROUNDS		OB-GROUNDS		SEAD-45		SEAD-45		SEAD-57		SEAD-57	
		LOCATION ID						MW34		MW34		MW45-4		MW45-4		MW57-1		MW57-1	
		MATRIX						GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	
		SAMPLE ID						122001		122226		122000		122247		122029		122227	
		SAMPLE DEPTH TO TOP OF SAMPLE						14		0		15		8.6		7		7	
		SAMPLE DEPTH TO BOTTOM OF SAMPLE						14		0		15		8.6		7		7	
		SAMPLE DATE						4/9/1999		12/2/1999		4/9/1999		12/7/1999		4/23/1999		12/2/1999	
		QC CODE						SA		SA		SA		SA		SA		SA	
		STUDY ID						RI PHASE 1 STEP 1		RI P1 S1 - Pu Resamp		RI PHASE 1 STEP 1		RI P1 S1 - Pu Resamp		RI PHASE 1 STEP 1		RI P1 S1 - Pu Resamp	
			FREQUENCY		NUMBER	NUMBER	NUMBER												
			OF	CLASS GA	ABOVE	OF	OF	1		2		1		2		1		2	
COMPOUND	UNIT	MAXIMU	DETECTION	STANDARD	STANDARD	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Aluminum	UG/L	1740	89%		0	16	18	1740		771		215		14.3	U	716	J	686	
Antimony	UG/L	2.7	6%	3	0	1	18	2.2	U	2.7	U	2.2	U	2.7	U	2.2	U	2.7	U
Arsenic	UG/L	4	11%	25	0	2	18	1.8	U	1.9	U	1.8	U	1.9	U	1.8	U	1.9	U
Barium	UG/L	232	100%	1000	0	18	18	28.7	J	29.2	J	24.4	J	28.2	J	15.7	J	19.4	J
Beryllium	UG/L	0.31	6%		0	1	18	0.1	U	0.2	U	0.1	U	0.2	U	0.1	U	0.2	U
Cadmium	UG/L	1.5	17%	5	0	3	18	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U	0.3	U
Calcium	UG/L	177000	100%		0	18	18	73000		82100		144000		177000		49400	J	67300	
Chromium	UG/L	2.5	28%	50	0	5	18	2.5	J	1.4	J	0.7	U	0.9	U	1.3	J	0.9	U
Cobalt	UG/L	1.8	6%		0	1	18	1.5	U	2	U	1.5	U	2	U	1.5	U	2	U
Copper	UG/L	99.7	56%	200	0	10	18	2.5	J	99.7		1	U	1.9	J	2.3	J	3.2	J
Cyanide	UG/L	0	0%		0	0	18	5	U	10	UJ	5	U	10	UJ	5	U	10	UJ
Iron	UG/L	1320	89%	300	10	16	18	[illegible]		[illegible]		256		25.4	U	[illegible]	J	[illegible]	
Lead	UG/L	1	6%	25	0	1	18	1	J	1	U	0.9	U	1	U	0.9	U	1	U
Magnesium	UG/L	49200	100%		0	18	18	8400		9210		31400		36500		6330	J	8140	
Manganese	UG/L	86.8	100%	300	0	18	18	10.3	J	4.5	J	7.1	J	1.1	J	5	J	5.1	J
Mercury	UG/L	0.65	6%	0.7	0	1	18	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	U	0.1	UJ
Nickel	UG/L	12	44%	100	0	8	18	2.3	J	1.7	U	1.4	U	1.7	U	2	J	1.7	U
Potassium	UG/L	2800	100%		0	18	18	889	J	658	J	2460	J	2660	J	567	J	629	J
Selenium	UG/L	2.7	17%	10	0	3	18	2.7	J	2.4	U	1.8	U	2.4	UJ	1.8	U	2.4	U
Silver	UG/L	5.2	11%	50	0	2	18	0.9	U	1.9	UJ	0.9	U	1.9	UJ	0.9	U	1.9	UJ
Sodium	UG/L	26400	100%	20000	2	18	18	17400		17900		11400		14000		5730	J	7750	
Thallium	UG/L	5.2	22%		0	4	18	1.9	U	2.9	J	3.4	J	2.7	U	1.9	U	5.2	J
Vanadium	UG/L	2.3	11%		0	2	18	2.3	J	1.5	U	1.6	U	1.5	U	1.6	U	1.5	U
Zinc	UG/L	16.8	100%		0	18	18	16.8	J	13.4	J	5.8	J	5.1	J	4.5	J	7.1	J

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								DW12-815		DW12-815		MW12-10		MW12-10		MW12-11		MW12-11	
MATRIX								GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122018		122255		122040		122261		122038		122259	
DEPTH TO TOP OF SAMPLE								20		20		13.5		15		13		13	
DEPTH TO BOTTOM OF SAMPLE								20		20		13.5		15		13		13	
SAMPLE DATE								19-Apr-99		14-Dec-99		6-May-99		15-Dec-99		25-Apr-99		15-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND								1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
VOLATILE ORGANICS																			
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	UJ	0.5	U	1	U	0.5	U
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40			0.5	U			0.5	U			0.5	U
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7												
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	UJ	0.5	U	1	U	0.5	U
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
2-Nitropropane	UG/L	0	0.00%	5	0	0	40			25	U			25	U			25	U
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	U	5	U	5	U	5	U	5	U
Acrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Allyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Bromobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Bromoform	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Butyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	UJ	0.5	U	1	U	0.5	U
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Chloracetonitrile	UG/L	0	0.00%		0	0	40			25	U			25	U			25	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								DW12-815		DW12-815		MW12-10		MW12-10		MW12-11		MW12-11	
MATRIX								GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122018		122255		122040		122261		122038		122259	
DEPTH TO TOP OF SAMPLE								20		20		13.5		15		13		13	
DEPTH TO BOTTOM OF SAMPLE								20		20		13.5		15		13		13	
SAMPLE DATE								19-Apr-99		14-Dec-99		6-May-99		15-Dec-99		25-Apr-99		15-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	UJ	0.5	U	1	UJ	0.5	UJ
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40			25	U			25	U			25	U
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Ethyl ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Ethyl methacrylate	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40			0.5	U			0.5	U			0.5	U
Hexachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	U	5	U	2.5	U	5	U	2.5	U
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	UJ	0.5	U	1	UJ	0.5	U
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	5	U	5	U	5	U	5	U
Methyl iodide	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	U	5	U	2.5	U	5	U	2.5	U
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40			0.5	U			0.5	U			0.5	U
Methylene bromide	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	0.5	U	2	U	0.5	U	2	U	0.5	U
Naphthalene	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40			25	U			25	U			25	U
Ortho Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Pentachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	UJ			0.5	UJ			0.5	U
Propionitrile	UG/L	0	0.00%		0	0	40			25	U			25	U			25	U
Propylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Tetrahydrofuran	UG/L	0	0.00%		0	0	40			2.5	U			2.5	U			2.5	U
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	3.1		1	U	0.5	U	1	U	0.5	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12
LOCATION ID								DW12-815		DW12-815		MW12-10		MW12-10		MW12-11		MW12-11
MATRIX								GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER G
SAMPLE ID								122018		122255		122040		122261		122038		122259
DEPTH TO TOP OF SAMPLE								20		20		13.5		15		13		13
DEPTH TO BOTTOM OF SAMPLE								20		20		13.5		15		13		13
SAMPLE DATE								19-Apr-99		14-Dec-99		6-May-99		15-Dec-99		25-Apr-99		15-Dec-99
QC CODE								SA		SA		SA		SA		SA		SA
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
SEMI-VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	UJ	1.1	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1	U	1.1	U	1	U	1.3	U	1.1	UJ	0.063	J
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6												
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.6	U	2.6	U	2.6	U	3.2	U	2.6	U	2.8	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.6	U	2.6	UR	2.6	U	3.2	UJ	2.6	U	2.8	UR
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1	U	1.1	UJ	1	U	1.3	U	1.1	U	1.1	UJ
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1	U	1.1	UJ	1	U	1.3	U	1.1	U	1.1	UJ
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
2-Methylphenol	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.6	UJ	2.6	U	3.2	U	2.6	U	2.8	UJ
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1	U	1.1	U	1	UJ	1.3	UJ	1.1	UJ	1.1	U
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.6	UJ	2.6	U	3.2	U	2.6	U	2.8	UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.6	U	2.6	UJ	2.6	U	3.2	UJ	2.6	U	2.8	UJ
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1	U	1.1	UJ	1	U	1.3	U	1.1	U	1.1	UJ
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	UJ	1.1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								DW12-815		DW12-815		MW12-10		MW12-10		MW12-11		MW12-11	
MATRIX								GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122018		122255		122040		122261		122038		122259	
DEPTH TO TOP OF SAMPLE								20		20		13.5		15		13		13	
DEPTH TO BOTTOM OF SAMPLE								20		20		13.5		15		13		13	
SAMPLE DATE								19-Apr-99		14-Dec-99		6-May-99		15-Dec-99		25-Apr-99		15-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND								1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
4-Methylphenol	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.6	U	2.6	U	3.2	UJ	2.6	U	2.8	U
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.6	U	2.6	UJ	2.6	U	3.2	U	2.6	U	2.8	UJ
Acenaphthene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Acenaphthylene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Anthracene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	0.052	J	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1	U	1.1	U	1	UJ	1.3	U	1.1	U	1.1	U
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1	U	1.1	U	1.7	U	1.3	U	1.1	U	1.1	U
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Carbazole	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Chrysene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Dibenzofuran	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Fluoranthene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Fluorene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1	U	1.1	U	1	UJ	1.3	U	1.1	U	1.1	U
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Isophorone	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	UJ	1.3	U	1.1	U	1.1	U
Naphthalene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Nitrobenzene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								DW12-815		DW12-815		MW12-10		MW12-10		MW12-11		MW12-11	
MATRIX								GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122018		122255		122040		122261		122038		122259	
DEPTH TO TOP OF SAMPLE								20		20		13.5		15		13		13	
DEPTH TO BOTTOM OF SAMPLE								20		20		13.5		15		13		13	
SAMPLE DATE								19-Apr-99		14-Dec-99		6-May-99		15-Dec-99		25-Apr-99		15-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND								1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.6	U	2.9	UJ	2.6	U	2.7	UJ	2.6	UR	2.6	UJ
Phenanthrene	UG/L	0	0.00%		0	0	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Phenol	UG/L	0.43	5.62%	1	0	5	89	1	U	1.1	U	1	U	1.3	U	1.1	U	1.1	U
Pyrene	UG/L	0.08	2.25%		0	2	89	1	U	1.1	U	1	U	1.3	UJ	1.1	U	1.1	U
PESTICIDES/ PCBS																			
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U	0.011	U	0.01	U	0.012	U	0.011	U	0.01	U
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U	0.011	U	0.01	U	0.012	U	0.011	U	0.01	U
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.01	U	0.011	U	0.01	U	0.012	U	0.011	U	0.01	U
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0052	U	0.0054	U	0.0053	U	0.0061	U	0.0056	U	0.0052	U
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0052	U	0.0054	U	0.0053	U	0.0061	U	0.0056	UJ	0.0052	U
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0052	U	0.0054	U	0.0053	U	0.0061	U	0.0056	U	0.0052	U
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.12	U	0.11	U	0.1	U
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.21	U	0.22	U	0.21	U	0.24	U	0.22	U	0.21	U
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.12	U	0.11	U	0.1	U
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.12	U	0.11	U	0.1	U
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.12	U	0.11	U	0.1	U
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.12	U	0.11	U	0.1	U
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.12	U	0.11	U	0.1	U
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0052	U	0.0054	U	0.0053	U	0.0061	U	0.0056	UJ	0.0052	U
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0052	U	0.0054	U	0.0053	U	0.0061	U	0.0056	U	0.0052	U
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U	0.011	U	0.01	U	0.012	U	0.011	U	0.01	U
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0052	U	0.0054	U	0.0053	U	0.0061	U	0.0056	U	0.0052	U
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U	0.011	U	0.01	U	0.012	U	0.011	U	0.01	U
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U	0.011	U	0.01	U	0.012	U	0.011	U	0.01	U
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U	0.011	U	0.01	U	0.012	U	0.011	U	0.01	U
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U	0.011	U	0.01	U	0.012	U	0.011	U	0.01	U
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U	0.011	U	0.01	U	0.012	U	0.011	U	0.01	U
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0052	U	0.0054	U	0.0053	U	0.0061	U	0.0056	U	0.0052	U
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0052	U	0.0054	U	0.0053	U	0.0061	U	0.0056	U	0.0052	U
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0052	U	0.0054	U	0.0053	U	0.0061	U	0.0056	U	0.0052	U
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0052	U	0.0054	U	0.0053	U	0.0061	U	0.0056	U	0.0052	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	U	0.011	U	0.01	U	0.012	UJ	0.011	UJ	0.01	U
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.052	U	0.054	U	0.053	U	0.061	U	0.056	U	0.052	U
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.52	U	0.54	U	0.53	U	0.61	U	0.56	U	0.52	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								DW12-815		DW12-815		MW12-10		MW12-10		MW12-11		MW12-11	
MATRIX								GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122018		122255		122040		122261		122038		122259	
DEPTH TO TOP OF SAMPLE								20		20		13.5		15		13		13	
DEPTH TO BOTTOM OF SAMPLE								20		20		13.5		15		13		13	
SAMPLE DATE								19-Apr-99		14-Dec-99		6-May-99		15-Dec-99		25-Apr-99		15-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND								1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	114	J	62.6	J	42.8	J	80.4	J	65.9	J	90.9	J
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.2	U	2.2	U	5.2	U	2.7	J	2.2	U	2.2	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	1.8	U	2.5	U	4.7	J	2.5	U	1.8	U	2.5	U
Barium	UG/L	189	100.00%	1000	0	91	91	35.1	J	52.5	J	80.8	J	129	J	37.5	J	69.7	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.1	U	0.18	J	0.34	J	0.1	U	0.1	U	0.19	J
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.3	U	0.21	J	0.81	J	0.2	U	0.3	U	0.28	J
Calcium	UG/L	260000	100.00%		0	91	91	64800		91300		91500		100000		49400	J	96500	
Chromium	UG/L	18.5	43.96%	50	0	40	91	2.1	J	1	U	1.2	U	1	U	1.2	U	1	U
Cobalt	UG/L	15.2	19.78%		0	18	91	1.5	U	1.7	J	3.3	U	1.3	U	1.5	U	1.4	J
Copper	UG/L	25.1	52.75%	200	0	48	91	2.4	J	7.2	J	4.1	J	1.9	U	1	U	1.9	U
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	10	U	5	U	10	U	5	U	10	U
Iron	UG/L	20700	91.21%	300	44	83	91	178	J	355	J	79.4	J	107		30	J	150	J
Lead	UG/L	18.8	13.19%	25	0	12	91	0.9	U	1.3	UJ	0.9	U	1.3	UJ	0.9	U	1.3	UJ
Magnesium	UG/L	72800	100.00%		0	91	91	11400		15600		12900		15700		6680	J	12800	
Manganese	UG/L	3280	98.90%	300	12	90	91	1.4	J	5.1	J	44		101		23.9	J	107	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	UJ	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	UG/L	38.8	52.75%	100	0	48	91	1.4	U	1.7	U	10.2	U	29.5	J	1.4	U	1.7	U
Potassium	UG/L	14200	100.00%		0	91	91	7260		6640		3860	J	4200	J	968	J	2250	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	3.5	J	2.2	U	2.5	J	2.2	U	1.8	UJ	2.2	U
Silver	UG/L	5.2	38.46%	50	0	35	91	0.9	U	2.8	J	4.5	J	1.3	UJ	0.9	U	2.4	J
Sodium	UG/L	408000	100.00%	20000	24	91	91	20200		19500		6190		6450		2700	J	5330	
Thallium	UG/L	7	41.76%		0	38	91	4.5	J	3.2	U	4.4	J	3.9	J	1.9	U	3.2	U
Vanadium	UG/L	18.3	28.57%		0	26	91	1.6	U	2.9	J	3.8	U	1.8	U	1.6	U	2.3	J
Zinc	UG/L	2640	93.41%		0	85	91	22.7		33.8		2.6	J	5.7	J	3.1	U	79.6	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-12		MW12-12		MW12-13		MW12-13		MW12-14		MW12-14	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122041		122262		122047		122260		122049		122273	
DEPTH TO TOP OF SAMPLE								13.5		12		13.5		13		14.5		13	
DEPTH TO BOTTOM OF SAMPLE								13.5		12		13.5		13		14.5		13	
SAMPLE DATE								4-May-99		16-Dec-99		6-May-99		15-Dec-99		6-May-99		18-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND								1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
VOLATILE ORGANICS																			
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	UJ	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40			0.5	U			0.5	U			0.5	U
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7												
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	UJ	0.5	U	1	UJ	0.5	U	1	UJ	0.5	U
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
2-Nitropropane	UG/L	0	0.00%	5	0	0	40			25	U			25	U			25	U
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	U	5	U	5	U	5	U	5	U
Acrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Allyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Bromobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Bromoform	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Butyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	UJ	0.5	U	1	U	0.5	U	1	U	0.5	U
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Chloracetonitrile	UG/L	0	0.00%		0	0	40			25	U			25	U			25	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-12		MW12-12		MW12-13		MW12-13		MW12-14		MW12-14	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122041		122262		122047		122260		122049		122273	
DEPTH TO TOP OF SAMPLE								13.5		12		13.5		13		14.5		13	
DEPTH TO BOTTOM OF SAMPLE								13.5		12		13.5		13		14.5		13	
SAMPLE DATE								4-May-99		16-Dec-99		6-May-99		15-Dec-99		6-May-99		18-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	UJ	0.5	UJ	1	UJ	0.5	UJ	1	UJ	0.5	U
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40			25	U			25	U			25	U
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Ethyl ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Ethyl methacrylate	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40			0.5	U			0.5	U			0.5	U
Hexachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	U	5	U	2.5	U	5	U	2.5	U
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	UJ	0.5	U	1	UJ	0.5	U	1	UJ	0.5	U
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	5	U	5	U	5	U	5	U
Methyl iodide	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	U	5	UJ	2.5	U	5	UJ	2.5	U
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40			0.5	U			0.5	U			0.5	U
Methylene bromide	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	0.5	U	2	U	0.5	U	2	U	0.5	U
Naphthalene	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40			25	U			25	U			25	U
Ortho Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Pentachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	UJ
Propionitrile	UG/L	0	0.00%		0	0	40			25	U			25	U			25	U
Propylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Tetrahydrofuran	UG/L	0	0.00%		0	0	40			2.5	U			2.5	U			2.5	U
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	0.5	U	1	U	0.26	J	1	U	0.5	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-12		MW12-12		MW12-13		MW12-13		MW12-14		MW12-14	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122041		122262		122047		122260		122049		122273	
DEPTH TO TOP OF SAMPLE								13.5		12		13.5		13		14.5		13	
DEPTH TO BOTTOM OF SAMPLE								13.5		12		13.5		13		14.5		13	
SAMPLE DATE								4-May-99		16-Dec-99		6-May-99		15-Dec-99		6-May-99		18-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
SEMI-VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1	U	1.2	U	1.1	U	1.2	U	1	U	0.065	J
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6												
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.5	U	2.9	U	2.8	U	3	U	2.5	U	2.6	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.5	U	2.9	UR	2.8	U	3	UR	2.5	U	2.6	UR
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1	U	1.2	UJ	1.1	U	1.2	UJ	1	U	1.1	UJ
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1	U	1.2	UJ	1.1	U	1.2	UJ	1	U	1.1	UJ
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
2-Methylphenol	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.5	U	2.9	UJ	2.8	U	3	UJ	2.5	UJ	2.6	UJ
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1	UJ	1.2	U	1.1	UJ	1.2	U	1	U	1.1	U
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.5	U	2.9	UJ	2.8	U	3	UJ	2.5	U	2.6	UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.5	U	2.9	UJ	2.8	U	3	UJ	2.5	U	2.6	UJ
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	UJ	1.1	U
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	UJ	1	U	1.1	U
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-12		MW12-12		MW12-13		MW12-13		MW12-14		MW12-14	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122041		122262		122047		122260		122049		122273	
DEPTH TO TOP OF SAMPLE								13.5		12		13.5		13		14.5		13	
DEPTH TO BOTTOM OF SAMPLE								13.5		12		13.5		13		14.5		13	
SAMPLE DATE								4-May-99		16-Dec-99		6-May-99		15-Dec-99		6-May-99		18-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
4-Methylphenol	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.5	U	2.9	U	2.8	U	3	U	2.5	UJ	2.6	U
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.5	U	2.9	UR	2.8	U	3	UJ	2.5	U	2.6	UR
Acenaphthene	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Acenaphthylene	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Anthracene	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1	U	1.2	U	1.1	U	1.2	U	1	UJ	1.1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1	UJ	1.2	UJ	1.1	UJ	1.2	U	1	UJ	1.1	UJ
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Carbazole	UG/L	0	0.00%		0	0	89	1	U	1.2	UJ	1.1	U	1.2	U	1	U	1.1	UJ
Chrysene	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Dibenzofuran	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	0.053	J	1.2	U	0.12	J	1.2	U	1	U	1.1	U
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Fluoranthene	UG/L	0	0.00%		0	0	89	1	U	1.2	UJ	1.1	U	1.2	U	1	U	1.1	UJ
Fluorene	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1	UJ	1.2	U	1.1	UJ	1.2	U	1	UJ	1.1	U
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Isophorone	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1	UJ	1.2	U	1.1	UJ	1.2	U	1	UJ	1.1	U
Naphthalene	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U
Nitrobenzene	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-12		MW12-12		MW12-13		MW12-13		MW12-14		MW12-14		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122041		122262		122047		122260		122049		122273		
DEPTH TO TOP OF SAMPLE								13.5		12		13.5		13		14.5		13		
DEPTH TO BOTTOM OF SAMPLE								13.5		12		13.5		13		14.5		13		
SAMPLE DATE								4-May-99		16-Dec-99		6-May-99		15-Dec-99		6-May-99		18-Dec-99		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.5	U	2.9	U	2.8	U	2.6	UJ	2.5	U	2.6	UJ	
Phenanthrene	UG/L	0	0.00%		0	0	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U	
Phenol	UG/L	0.43	5.62%	1	0	5	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U	
Pyrene	UG/L	0.08	2.25%		0	2	89	1	U	1.2	U	1.1	U	1.2	U	1	U	1.1	U	
PESTICIDES/ PCBS																				
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.011	U	0.012	U	0.013	U	0.012	U	0.01	U	0.012	U	
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.011	U	0.012	U	0.013	U	0.012	U	0.01	U	0.012	U	
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.011	U	0.012	U	0.013	U	0.012	U	0.01	U	0.012	U	
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0053	U	0.0062	U	0.0064	U	0.0061	U	0.0051	U	0.0058	U	
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0053	U	0.0062	U	0.0064	U	0.0061	U	0.0051	U	0.0058	U	
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0053	U	0.0062	U	0.0064	U	0.0061	U	0.0051	U	0.0058	U	
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.12	U	0.13	U	0.12	U	0.1	U	0.12	U	
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.21	U	0.25	U	0.26	U	0.24	U	0.2	U	0.23	U	
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.12	U	0.13	U	0.12	U	0.1	U	0.12	U	
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.12	U	0.13	U	0.12	U	0.1	U	0.12	U	
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.12	U	0.13	U	0.12	U	0.1	U	0.12	U	
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.12	U	0.13	U	0.12	U	0.1	U	0.12	U	
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.12	U	0.13	U	0.12	U	0.1	U	0.12	U	
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0053	U	0.0062	U	0.0034	J	0.0061	U	0.0051	U	0.0058	U	
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0053	U	0.0062	U	0.0064	U	0.0061	U	0.0051	U	0.0058	U	
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.011	U	0.012	U	0.013	U	0.012	U	0.01	U	0.012	U	
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0053	U	0.0062	U	0.0064	U	0.0061	U	0.0051	U	0.0058	U	
Endosulfan II	UG/L	0	0.00%		0	0	89	0.011	U	0.012	U	0.013	U	0.012	U	0.01	U	0.012	U	
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.011	U	0.012	U	0.013	U	0.012	U	0.01	U	0.012	U	
Endrin	UG/L	0	0.00%	0	0	0	89	0.011	U	0.012	U	0.013	U	0.012	U	0.01	U	0.012	U	
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.011	U	0.012	U	0.013	U	0.012	U	0.01	U	0.012	U	
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.011	U	0.012	U	0.013	U	0.012	U	0.01	U	0.012	U	
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0053	U	0.0062	U	0.0064	U	0.0061	U	0.0051	U	0.0058	U	
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0053	U	0.0062	U	0.0064	U	0.0061	U	0.0051	U	0.0058	U	
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0053	U	0.0062	U	0.0064	U	0.0061	U	0.0051	U	0.0058	U	
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0053	U	0.0062	U	0.0064	U	0.0061	U	0.0051	U	0.0058	U	
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.011	U	0.012	U	0.013	UJ	0.012	U	0.01	UJ	0.012	U	
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.053	U	0.062	U	0.064	U	0.061	U	0.051	U	0.058	U	
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.53	U	0.62	U	0.64	U	0.61	U	0.51	U	0.58	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-12		MW12-12		MW12-13		MW12-13		MW12-14		MW12-14	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122041		122262		122047		122260		122049		122273	
DEPTH TO TOP OF SAMPLE								13.5		12		13.5		13		14.5		13	
DEPTH TO BOTTOM OF SAMPLE								13.5		12		13.5		13		14.5		13	
SAMPLE DATE								4-May-99		16-Dec-99		6-May-99		15-Dec-99		6-May-99		18-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND								1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	600		53.6	J	46.4	J	200		1400		570	
Antimony	UG/L	43.2	7.69%	3	3	7	91	5.2	U	2.2	U	5.2	U	2.2	U	5.2	U	2.2	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	4.5	J	2.5	U	2.9	U	2.5	U	2.9	U	2.5	U
Barium	UG/L	189	100.00%	1000	0	91	91	76.4	J	76.5	J	76.6	J	72.2	J	141	J	164	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.36	J	0.1	U	0.3	U	0.19	J	0.31	J	0.32	J
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.93	J	0.2	U	1.3	J	0.2	U	1.2	J	0.45	J
Calcium	UG/L	260000	100.00%		0	91	91	109000		113000		80300		81900		111000		98500	
Chromium	UG/L	18.5	43.96%	50	0	40	91	2.3	J	1	U	1.2	U	1.1	J	2.8	J	3	J
Cobalt	UG/L	15.2	19.78%		0	18	91	3.3	U	1.3	U	3.3	U	1.5	J	3.3	U	3.3	J
Copper	UG/L	25.1	52.75%	200	0	48	91	4.7	J	1.9	U	3.9	J	1.9	U	6.1	J	4	J
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	10	U	5	U	10	U	5	U	10	U
Iron	UG/L	20700	91.21%	300	44	83	91	836		64.8	J	47.2	J	256	J	1710		426	
Lead	UG/L	18.8	13.19%	25	0	12	91	0.9	U	1.3	UJ	0.9	U	1.3	UJ	0.9	U	1.3	UJ
Magnesium	UG/L	72800	100.00%		0	91	91	24700		24500		16700		17200		28300		24800	
Manganese	UG/L	3280	98.90%	300	12	90	91	116		98.8		14.5	J	27.9		75.7		53.1	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	U	0.1	U	0.1	U	0.1	U	0.14	J	0.1	U
Nickel	UG/L	38.8	52.75%	100	0	48	91	10.2	U	2.9	J	10.2	U	1.7	U	10.2	U	3.8	J
Potassium	UG/L	14200	100.00%		0	91	91	1240	J	646	J	3280	J	2670	J	2570	J	1970	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	1.8	J	2.2	U	1.8	J	2.2	U	1.8	J	2.5	U
Silver	UG/L	5.2	38.46%	50	0	35	91	3.1	J	1.3	UJ	4.6	J	2.3	J	3.9	J	4.7	J
Sodium	UG/L	408000	100.00%	20000	24	91	91	2960	J	2770	J	5950		5320		7420		6690	
Thallium	UG/L	7	41.76%		0	38	91	2.7	J	3.2	U	2.7	J	3.2	U	2.6	U	5.3	J
Vanadium	UG/L	18.3	28.57%		0	26	91	4	J	1.8	U	3.8	U	3.2	J	4.4	J	3.5	J
Zinc	UG/L	2640	93.41%		0	85	91	3.2	J	23.4		5.5	J	10	J	33.2		5.1	J

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-15		MW12-15		MW12-16		MW12-16		MW12-17		MW12-17	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122023		122271		122015		122267		122016		122242	
DEPTH TO TOP OF SAMPLE								14		14		14		14		18		15	
DEPTH TO BOTTOM OF SAMPLE								14		14		14		14		18		15	
SAMPLE DATE								21-Apr-99		18-Dec-99		19-Apr-99		17-Dec-99		19-Apr-99		7-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
VOLATILE ORGANICS																			
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40			0.5	U			0.5	U			0.5	U
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7												
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
2-Nitropropane	UG/L	0	0.00%	5	0	0	40			25	U			25	U			25	U
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	U	5	U	5	U	5	U	5	UJ
Acrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Allyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Bromobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Bromoform	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	UJ
Butyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Chloracetonitrile	UG/L	0	0.00%		0	0	40			25	U			25	U			25	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-15		MW12-15		MW12-16		MW12-16		MW12-17		MW12-17		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122023		122271		122015		122267		122016		122242		
DEPTH TO TOP OF SAMPLE								14		14		14		14		18		15		
DEPTH TO BOTTOM OF SAMPLE								14		14		14		14		18		15		
SAMPLE DATE								21-Apr-99		18-Dec-99		19-Apr-99		17-Dec-99		19-Apr-99		7-Dec-99		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		
SAMPLE ROUND								1		2		1		2		1		2		
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40			25	U			25	U			25	UJ	
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Ethyl ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U	
Ethyl methacrylate	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U	
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40			0.5	U			0.5	U			0.5	U	
Hexachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U	
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U	
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	U	5	U	2.5	U	5	U	2.5	UJ	
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	5	U	5	U	5	U	5	UJ	
Methyl iodide	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	U	5	U	2.5	U	5	U	2.5	U	
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40			0.5	U			0.5	U			0.5	U	
Methylene bromide	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	0.5	U	2	U	0.5	U	2	U	0.5	U	
Naphthalene	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U	
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40			25	U			25	U			25	UR	
Ortho Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Pentachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	UJ			0.5	UJ			0.5	UJ	
Propionitrile	UG/L	0	0.00%		0	0	40			25	U			25	U			25	U	
Propylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Tetrahydrofuran	UG/L	0	0.00%		0	0	40			2.5	U			2.5	U			2.5	U	
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-15		MW12-15		MW12-16		MW12-16		MW12-17		MW12-17	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122023		122271		122015		122267		122016		122242	
DEPTH TO TOP OF SAMPLE								14		14		14		14		18		15	
DEPTH TO BOTTOM OF SAMPLE								14		14		14		14		18		15	
SAMPLE DATE								21-Apr-99		18-Dec-99		19-Apr-99		17-Dec-99		19-Apr-99		7-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
SEMI-VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1	U	1	U	1	U	1.1	U	1	U	0.075	J
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6												
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.5	U	2.6	U	2.6	U	2.8	U	2.5	U	2.6	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1	UJ	1.1	U	1	UJ	1	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.5	U	2.6	UR	2.6	UR	2.8	UR	2.5	UR	2.6	U
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1	U	1	UJ	1	U	1.1	UJ	1	U	1	U
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1	U	1	UJ	1	U	1.1	UJ	1	U	1	U
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
2-Methylphenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.5	U	2.6	UJ	2.6	U	2.8	UJ	2.5	U	2.6	U
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.5	U	2.6	UJ	2.6	U	2.8	UJ	2.5	U	2.6	U
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.5	U	2.6	UJ	2.6	UJ	2.8	UJ	2.5	UJ	2.6	U
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-15		MW12-15		MW12-16		MW12-16		MW12-17		MW12-17		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122023		122271		122015		122267		122016		122242		
DEPTH TO TOP OF SAMPLE								14		14		14		14		18		15		
DEPTH TO BOTTOM OF SAMPLE								14		14		14		14		18		15		
SAMPLE DATE								21-Apr-99		18-Dec-99		19-Apr-99		17-Dec-99		19-Apr-99		7-Dec-99		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		
SAMPLE ROUND								1		2		1		2		1		2		
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
4-Methylphenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.5	U	2.6	U	2.6	UJ	2.8	U	2.5	UJ	2.6	U
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.5	U	2.6	UR	2.6	UJ	2.8	UR	2.5	UJ	2.6	U
Acenaphthene	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Acenaphthylene	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Anthracene	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1	U	1	UJ	1	U	1.1	UJ	1	U	1	U
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1	U	1	U	1	U	1.1	U	1	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1	U	1	U	1	U	1.1	U	1	U	2.9	U
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Carbazole	UG/L	0	0.00%		0	0	89	1	U	1	UJ	1	U	1.1	UJ	1	U	1	U
Chrysene	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Dibenzofuran	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Fluoranthene	UG/L	0	0.00%		0	0	89	1	U	1	UJ	1	U	1.1	UJ	1	U	1	U
Fluorene	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Isophorone	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Naphthalene	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Nitrobenzene	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-15		MW12-15		MW12-16		MW12-16		MW12-17		MW12-17	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122023		122271		122015		122267		122016		122242	
DEPTH TO TOP OF SAMPLE								14		14		14		14		18		15	
DEPTH TO BOTTOM OF SAMPLE								14		14		14		14		18		15	
SAMPLE DATE								21-Apr-99		18-Dec-99		19-Apr-99		17-Dec-99		19-Apr-99		7-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.5	U	2.6	UJ	2.6	UJ	2.8	UJ	2.5	UJ	2.6	U
Phenanthrene	UG/L	0	0.00%		0	0	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Phenol	UG/L	0.43	5.62%	1	0	5	89	1	U	1	U	1	U	1.1	U	1	U	1	U
Pyrene	UG/L	0.08	2.25%		0	2	89	1	U	1	U	1	U	1.1	U	1	U	1	U
PESTICIDES/ PCBS																			
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U
Aldrin	UG/L	0	0.00%	0	0	0	89	0.005	U	0.0053	U	0.0056	U	0.0053	U	0.0057	U	0.0053	U
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.005	UJ	0.0053	U	0.0056	U	0.0053	U	0.0057	U	0.0053	U
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.005	U	0.0053	U	0.0056	U	0.0053	U	0.0057	U	0.0053	U
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.2	U	0.21	U	0.22	U	0.21	U	0.23	U	0.21	U
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.005	UJ	0.0053	U	0.0056	U	0.0053	U	0.0057	U	0.0053	U
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.005	U	0.0053	U	0.0056	U	0.0053	U	0.0057	U	0.0053	U
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U
Endosulfan I	UG/L	0	0.00%		0	0	89	0.005	U	0.0053	U	0.0056	U	0.0053	U	0.0057	U	0.0053	U
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.005	U	0.0053	U	0.0056	U	0.0053	U	0.0057	U	0.0053	U
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.005	U	0.0053	U	0.0056	U	0.0053	U	0.0057	U	0.0053	U
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.005	U	0.0053	U	0.0056	U	0.0053	U	0.0057	U	0.0053	U
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.005	U	0.0053	U	0.0056	U	0.0053	U	0.0057	U	0.0053	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.05	U	0.053	U	0.056	U	0.053	U	0.057	U	0.053	U
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.5	U	0.53	U	0.56	U	0.53	U	0.57	U	0.53	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-15		MW12-15		MW12-16		MW12-16		MW12-17		MW12-17	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122023		122271		122015		122267		122016		122242	
DEPTH TO TOP OF SAMPLE								14		14		14		14		18		15	
DEPTH TO BOTTOM OF SAMPLE								14		14		14		14		18		15	
SAMPLE DATE								21-Apr-99		18-Dec-99		19-Apr-99		17-Dec-99		19-Apr-99		7-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND								1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	1210	J	314		400		40.9	J	1060		125	J
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.7	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	1.8	U	2.5	U	1.8	U	2.5	U	1.8	U	1.9	U
Barium	UG/L	189	100.00%	1000	0	91	91	140	J	157	J	100	J	122	J	57.5	J	60.8	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.2	U
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.3	U	0.2	U	0.3	U	0.2	U	1.1	J	0.3	U
Calcium	UG/L	260000	100.00%		0	91	91	104000	J	112000		134000		150000		105000		103000	
Chromium	UG/L	18.5	43.96%	50	0	40	91	2.5	J	1	U	1	J	1	U	1.5	J	0.9	U
Cobalt	UG/L	15.2	19.78%		0	18	91	1.5	U	1.3	U	1.5	U	1.3	U	1.5	U	2	U
Copper	UG/L	25.1	52.75%	200	0	48	91	1.6	J	1.9	U	1.6	J	1.9	U	2	J	1.7	U
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	10	U	5	U	10	U	5	U	10	U
Iron	UG/L	20700	91.21%	300	44	83	91	1610	J	538		612	J	20.3	U	1350	J	151	
Lead	UG/L	18.8	13.19%	25	0	12	91	0.9	U	1.3	UJ	0.9	U	1.3	UJ	0.9	U	1	U
Magnesium	UG/L	72800	100.00%		0	91	91	29900	J	28200		29700		34300		27900		27100	
Manganese	UG/L	3280	98.90%	300	12	90	91	53.7	J	45		9.3	J	5.7	J	66.6		52.9	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	U	0.1	U	0.1	UJ	0.1	U	0.1	UJ	0.1	U
Nickel	UG/L	38.8	52.75%	100	0	48	91	3	J	1.7	U	2.6	J	2	J	4.2	J	1.7	U
Potassium	UG/L	14200	100.00%		0	91	91	1820	J	1990	J	1380	J	1090	J	3080	J	1830	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	1.8	U	2.2	U	1.8	U	2.2	U	1.8	U	2.4	U
Silver	UG/L	5.2	38.46%	50	0	35	91	0.9	U	1.3	UJ	0.9	U	1.3	UJ	0.9	U	1.9	U
Sodium	UG/L	408000	100.00%	20000	24	91	91	5170	J	7310		11700		17300		4480	J	4630	J
Thallium	UG/L	7	41.76%		0	38	91	1.9	U	3.9	J	3.4	J	3.4	J	1.9	U	4.2	J
Vanadium	UG/L	18.3	28.57%		0	26	91	2.5	J	1.8	U	1.6	U	1.8	U	1.7	J	1.5	U
Zinc	UG/L	2640	93.41%		0	85	91	7.1	J	6.2	J	4	J	7.8	J	5.6	J	2.8	J

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-18		MW12-18		MW12-18		MW12-19		MW12-19		MW12-20	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122019		122017		122237		122005		122235		122006	
DEPTH TO TOP OF SAMPLE								12.5		12.5		12.5		11		11		14	
DEPTH TO BOTTOM OF SAMPLE								12.5		12.5		12.5		11		11		14	
SAMPLE DATE								20-Apr-99		20-Apr-99		6-Dec-99		12-Apr-99		5-Dec-99		12-Apr-99	
QC CODE								DU		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1	
SAMPLE ROUND								1		1		2		1		2		1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
VOLATILE ORGANICS																			
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40					0.5	U			0.5	U		
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7												
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
2-Nitropropane	UG/L	0	0.00%	5	0	0	40					25	U			25	U		
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	U	5	U	2	J	5	U	2	J
Acrylonitrile	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Allyl chloride	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Bromobenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Bromoform	UG/L	0	0.00%		0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Butyl chloride	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Chloracetonitrile	UG/L	0	0.00%		0	0	40					25	U			25	U		

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-18		MW12-18		MW12-18		MW12-19		MW12-19		MW12-20		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122019		122017		122237		122005		122235		122006		
DEPTH TO TOP OF SAMPLE								12.5		12.5		12.5		11		11		14		
DEPTH TO BOTTOM OF SAMPLE								12.5		12.5		12.5		11		11		14		
SAMPLE DATE								20-Apr-99		20-Apr-99		6-Dec-99		12-Apr-99		5-Dec-99		12-Apr-99		
QC CODE								DU		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		
SAMPLE ROUND								1		1		2		1		2		1		
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40					25	UJ			25	UJ		
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Ethyl ether	UG/L	0	0.00%		0	0	40					0.5	U			0.5	U		
Ethyl methacrylate	UG/L	0	0.00%		0	0	40					0.5	U			0.5	U		
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40					0.5	U			0.5	U		
Hexachloroethane	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40					0.5	U			0.5	U		
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40					0.5	U			0.5	U		
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	2.5	UJ	5	U	2.5	UJ	5	U
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	5	UJ	5	U	5	UJ	5	U
Methyl iodide	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	2.5	U	5	U	2.5	U	5	U
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40					0.5	U			0.5	U		
Methylene bromide	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	2	U	0.5	U	2	U	0.5	U	2	U
Naphthalene	UG/L	0	0.00%		0	0	40					0.5	U			0.5	U		
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40					25	UR			25	UR		
Ortho Xylene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Pentachloroethane	UG/L	0	0.00%	5	0	0	40					0.5	UJ			0.5	UJ		
Propionitrile	UG/L	0	0.00%		0	0	40					25	U			25	U		
Propylbenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Tetrahydrofuran	UG/L	0	0.00%		0	0	40					2.5	U			2.5	U		
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY									SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID									MW12-18		MW12-18		MW12-18		MW12-19		MW12-19		MW12-20	
MATRIX								G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID									122019		122017		122237		122005		122235		122006	
DEPTH TO TOP OF SAMPLE									12.5		12.5		12.5		11		11		14	
DEPTH TO BOTTOM OF SAMPLE									12.5		12.5		12.5		11		11		14	
SAMPLE DATE									20-Apr-99		20-Apr-99		6-Dec-99		12-Apr-99		5-Dec-99		12-Apr-99	
QC CODE									DU		SA		SA		SA		SA		SA	
STUDY ID									RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF		1		1		2		1		2		1	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES		VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89		1	U	1	U	0.5	U	1	U	0.5	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82		1	U	1	U	0.5	U	1	U	0.5	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89		1	U	1	U	0.5	U	1	U	0.5	U	1	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40						0.5	U			0.5	U		
Trichloroethene	UG/L	1600	3.37%	5	2	3	89		1	U	1	U	0.5	U	1	U	0.5	U	1	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40						0.5	U			0.5	U		
Vinyl chloride	UG/L	0	0.00%	2	0	0	89		1	U	1	U	0.5	U	1	U	0.5	U	1	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40						0.5	U			0.5	U		
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40						0.5	U			0.5	U		
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40						0.5	U			0.5	U		
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40						0.5	U			0.5	U		
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40						0.5	U			0.5	U		
SEMI-VOLATILE ORGANICS																				
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6													
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89		2.6	U	2.5	U	2.8	U	2.6	U	2.6	U	2.5	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89		1.1	UJ	1	U	1.1	U	1	U	1	U	1	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89		2.6	UR	2.5	U	2.8	U	2.6	U	2.6	UJ	2.5	UR
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
2-Methylphenol	UG/L	0	0.00%		0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89		2.6	U	2.5	U	2.8	U	2.6	U	2.6	U	2.5	U
2-Nitrophenol	UG/L	0	0.00%		0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89		2.6	U	2.5	U	2.8	U	2.6	U	2.6	U	2.5	U
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89		2.6	UJ	2.5	U	2.8	U	2.6	U	2.6	U	2.5	U
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89		1.1	U	1	U	1.1	U	1	U	1	U	1	U
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89		1.1	UJ	1	U	1.1	U	1	U	1	U	1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-18		MW12-18		MW12-18		MW12-19		MW12-19		MW12-20		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122019		122017		122237		122005		122235		122006		
DEPTH TO TOP OF SAMPLE								12.5		12.5		12.5		11		11		14		
DEPTH TO BOTTOM OF SAMPLE								12.5		12.5		12.5		11		11		14		
SAMPLE DATE								20-Apr-99		20-Apr-99		6-Dec-99		12-Apr-99		5-Dec-99		12-Apr-99		
QC CODE								DU		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		1		2		1		2		1		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
4-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.5	U	2.8	U	2.6	UJ	2.6	UJ	2.5	UJ	
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.6	UJ	2.5	U	2.8	U	2.6	UJ	2.6	U	2.5	UJ	
Acenaphthene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Acenaphthylene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1.1	U	1	U	1.1	U	1	U	230		1	U	
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Carbazole	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Chrysene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1.1	U	0.083	J	1.1	U	1	U	1	U	1	U	
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1.1	U	1	U	1.1	U	0.06	J	1	U	1	U	
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Dibenzofuran	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Fluoranthene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Fluorene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Isophorone	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Naphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	
Nitrobenzene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-18		MW12-18		MW12-18		MW12-19		MW12-19		MW12-20	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122019		122017		122237		122005		122235		122006	
DEPTH TO TOP OF SAMPLE								12.5		12.5		12.5		11		11		14	
DEPTH TO BOTTOM OF SAMPLE								12.5		12.5		12.5		11		11		14	
SAMPLE DATE								20-Apr-99		20-Apr-99		6-Dec-99		12-Apr-99		5-Dec-99		12-Apr-99	
QC CODE								DU		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		1		2		1		2		1	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.6	UJ	2.5	U	2.8	U	2.6	U	2.6	U	2.5	U
Phenanthrene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U
Phenol	UG/L	0.43	5.62%	1	0	5	89	1.1	U	1	U	1.1	U	1	U	1	U	0.15	J
Pyrene	UG/L	0.08	2.25%		0	2	89	1.1	U	1	U	1.1	U	1	U	1	U	1	U
PESTICIDES/ PCBS																			
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.018	J	0.01	UJ	0.011	U	0.01	U	0.01	U	0.01	U
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0051	U	0.0051	U	0.0055	U	0.005	U	0.005	U	0.005	U
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0051	UJ	0.0051	U	0.0055	U	0.005	U	0.005	U	0.005	U
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0051	U	0.0051	U	0.0055	U	0.005	U	0.005	U	0.005	U
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.2	U	0.2	U	0.22	U	0.2	U	0.2	U	0.2	U
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0051	UJ	0.0051	U	0.0055	U	0.005	U	0.005	U	0.005	U
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0051	U	0.0051	U	0.0055	U	0.005	U	0.005	U	0.005	U
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0051	U	0.0051	U	0.0055	U	0.005	U	0.005	U	0.005	U
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U	0.01	U	0.011	U	0.01	U	0.01	U	0.01	U
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0051	U	0.0051	U	0.0055	U	0.005	UJ	0.005	U	0.005	UJ
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0051	U	0.0051	U	0.0055	U	0.005	U	0.005	U	0.005	U
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0051	U	0.0051	U	0.0055	U	0.005	U	0.005	U	0.005	U
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0051	U	0.0051	U	0.0055	U	0.005	U	0.005	U	0.005	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	U	0.01	UJ	0.011	U	0.01	UJ	0.01	U	0.01	UJ
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.051	U	0.051	U	0.055	U	0.05	U	0.05	U	0.05	U
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.51	U	0.51	U	0.55	U	0.5	U	0.5	U	0.5	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-18		MW12-18		MW12-18		MW12-19		MW12-19		MW12-20	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122019		122017		122237		122005		122235		122006	
DEPTH TO TOP OF SAMPLE								12.5		12.5		12.5		11		11		14	
DEPTH TO BOTTOM OF SAMPLE								12.5		12.5		12.5		11		11		14	
SAMPLE DATE								20-Apr-99		20-Apr-99		6-Dec-99		12-Apr-99		5-Dec-99		12-Apr-99	
QC CODE								DU		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		1		2		1		2		1	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	707	J	492	J	198	J	1590		168	J	657	
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.2	U	2.2	U	2.7	U	2.2	U	2.7	U	2.2	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	1.8	U	1.8	U	1.9	U	1.8	U	1.9	U	1.8	U
Barium	UG/L	189	100.00%	1000	0	91	91	82	J	90.9	J	73.1	J	81.4	J	72.1	J	74.9	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.1	U	0.1	U	0.2	U	0.1	U	0.2	U	0.1	U
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.3	UJ	1.4	J	0.3	U	0.3	U	0.3	U	0.3	U
Calcium	UG/L	260000	100.00%		0	91	91	176000	J	192000		179000		102000		94800		114000	
Chromium	UG/L	18.5	43.96%	50	0	40	91	1.5	J	1.6	J	0.9	U	1.7	J	0.9	U	0.7	U
Cobalt	UG/L	15.2	19.78%		0	18	91	1.5	UJ	1.8	J	2	U	1.5	U	2	U	1.5	U
Copper	UG/L	25.1	52.75%	200	0	48	91	1	UJ	2.5	J	1.7	U	2.2	J	1.7	U	1	U
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	5	U	10	U	5	U	10	U	5	U
Iron	UG/L	20700	91.21%	300	44	83	91	[illegible]	J	1370	J	762		[illegible]		129		825	
Lead	UG/L	18.8	13.19%	25	0	12	91	0.9	U	0.9	U	1	U	0.9	U	1	U	0.9	U
Magnesium	UG/L	72800	100.00%		0	91	91	72800	J	72500		67400		12100		10600		22500	
Manganese	UG/L	3280	98.90%	300	12	90	91	73.6	J	74		73.3		158		119		128	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	U	0.1	UJ	0.1	U	0.1	UJ	0.1	U	0.1	UJ
Nickel	UG/L	38.8	52.75%	100	0	48	91	2.7	J	4	J	1.7	U	4.1	J	1.7	U	2	J
Potassium	UG/L	14200	100.00%		0	91	91	3730	J	3330	J	4040	J	1780	J	989	J	2440	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	1.8	U	1.8	U	2.6	J	1.8	U	2.4	U	1.8	U
Silver	UG/L	5.2	38.46%	50	0	35	91	0.9	UJ	1.5	J	1.9	U	0.9	U	1.9	U	0.9	U
Sodium	UG/L	408000	100.00%	20000	24	91	91	31700	J	32700		32900		43000		43000		100000	
Thallium	UG/L	7	41.76%		0	38	91	1.9	UJ	4.2	J	2.7	U	2.3	J	2.7	U	1.9	U
Vanadium	UG/L	18.3	28.57%		0	26	91	1.6	UJ	1.7	J	1.5	U	2.6	J	1.5	U	1.6	U
Zinc	UG/L	2640	93.41%		0	85	91	3.1	UJ	6	J	2.7	J	8.8	J	4.4	J	11.6	J

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-20		MW12-20		MW12-21		MW12-21		MW12-22		MW12-22		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122233		122232		122004		122236		122007		122228		
DEPTH TO TOP OF SAMPLE								12		12		11		11		12		12		
DEPTH TO BOTTOM OF SAMPLE								12		12		11		11		12		12		
SAMPLE DATE								5-Dec-99		5-Dec-99		12-Apr-99		5-Dec-99		12-Apr-99		3-Dec-99		
QC CODE								DU		SA		SA		SA		SA		SA		
STUDY ID								RI P1S1 - Pu RS		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	2		2		1		2		1		2		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
VOLATILE ORGANICS																				
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	UJ	
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	UJ	
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7													
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	UJ	
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	UJ	
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
2-Nitropropane	UG/L	0	0.00%	5	0	0	40	25	U	25	U			25	U			25	UJ	
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	U	5	U	5	U	5	U	5	U	
Acrylonitrile	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Allyl chloride	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Benzene	UG/L	0	0.00%	1	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Bromobenzene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Bromodichloromethane	UG/L	0	0.00%		0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	UJ	
Bromoform	UG/L	0	0.00%		0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Butyl chloride	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Carbon disulfide	UG/L	0	0.00%		0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Chloracetonitrile	UG/L	0	0.00%		0	0	40	25	U	25	U			25	U			25	UJ	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-20		MW12-20		MW12-21		MW12-21		MW12-22		MW12-22		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122233		122232		122004		122236		122007		122228		
DEPTH TO TOP OF SAMPLE								12		12		11		11		12		12		
DEPTH TO BOTTOM OF SAMPLE								12		12		11		11		12		12		
SAMPLE DATE								5-Dec-99		5-Dec-99		12-Apr-99		5-Dec-99		12-Apr-99		3-Dec-99		
QC CODE								DU		SA		SA		SA		SA		SA		
STUDY ID								RI P1S1 - Pu RS		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		
SAMPLE ROUND								2		2		1		2		1		2		
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	UJ	
Chloroethane	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Chloroform	UG/L	0	0.00%	7	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	UJ	
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40	25	UJ	25	UJ			25	UJ			25	UJ	
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Ethyl ether	UG/L	0	0.00%		0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Ethyl methacrylate	UG/L	0	0.00%		0	0	40	0.5	U	0.5	U			0.5	U			0.5	UJ	
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Hexachloroethane	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Methyl bromide	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	2.5	UJ	2.5	UJ	5	U	2.5	UJ	5	U	2.5	UJ	
Methyl chloride	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	UJ	5	UJ	5	U	5	UJ	5	U	5	U	
Methyl iodide	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	2.5	U	2.5	U	5	U	2.5	U	5	U	2.5	UJ	
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40	0.5	U	0.5	U			0.5	U			0.5	UJ	
Methylene bromide	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	UJ	
Methylene chloride	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	2	U	0.5	U	2	U	0.5	U	
Naphthalene	UG/L	0	0.00%		0	0	40	0.5	U	0.5	U			0.5	U			0.5	UJ	
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40	25	UR	25	UR			25	UR			25	UR	
Ortho Xylene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Pentachloroethane	UG/L	0	0.00%	5	0	0	40	0.5	UJ	0.5	UJ			0.5	UJ			0.5	UJ	
Propionitrile	UG/L	0	0.00%		0	0	40	25	U	25	U			25	U			25	U	
Propylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U	
Styrene	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	UJ	
Tetrahydrofuran	UG/L	0	0.00%		0	0	40	2.5	U	2.5	U			2.5	U			2.5	U	
Toluene	UG/L	3.1	5.62%	5	0	5	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	UJ	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-20		MW12-20		MW12-21		MW12-21		MW12-22		MW12-22	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122233		122232		122004		122236		122007		122228	
DEPTH TO TOP OF SAMPLE								12		12		11		11		12		12	
DEPTH TO BOTTOM OF SAMPLE								12		12		11		11		12		12	
SAMPLE DATE								5-Dec-99		5-Dec-99		12-Apr-99		5-Dec-99		12-Apr-99		3-Dec-99	
QC CODE								DU		SA		SA		SA		SA		SA	
STUDY ID								RI P1S1 - Pu RS		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	2		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	UJ
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40	0.5	U	0.5	U			0.5	U			0.5	U
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	UJ
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	0.5	U	0.5	U	1	U	0.5	U	1	U	0.5	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U	0.5	U			0.5	U			0.5	U
SEMI-VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6												
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.9	U	2.6	U	2.6	U	3	U	2.5	U	2.6	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.9	U	2.6	UJ	2.6	UR	3	UJ	2.5	UR	2.6	U
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
2-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.9	U	2.6	U	2.6	U	3	U	2.5	U	2.6	U
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.9	U	2.6	U	2.6	U	3	U	2.5	U	2.6	U
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.9	U	2.6	U	2.6	UJ	3	U	2.5	U	2.6	U
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-20		MW12-20		MW12-21		MW12-21		MW12-22		MW12-22		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122233		122232		122004		122236		122007		122228		
DEPTH TO TOP OF SAMPLE								12		12		11		11		12		12		
DEPTH TO BOTTOM OF SAMPLE								12		12		11		11		12		12		
SAMPLE DATE								5-Dec-99		5-Dec-99		12-Apr-99		5-Dec-99		12-Apr-99		3-Dec-99		
QC CODE								DU		SA		SA		SA		SA		SA		
STUDY ID								RI P1S1 - Pu RS		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	2		2		1		2		1		2		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
4-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.9	U	2.6	UJ	2.6	U	3	UJ	2.5	UJ	2.6	U	
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.9	U	2.6	U	2.6	U	3	U	2.5	UJ	2.6	U	
Acenaphthene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Acenaphthylene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1.1	U	1	U	1	U	1.5	U	1	U	210		
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Carbazole	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Chrysene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1.1	U	1	U	0.09	J	1.2	U	1	U	0.1	U	
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1.1	U	1	U	1	U	1.2	U	1	U	0.06	J	
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Dibenzofuran	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	0.067	J	0.096	J	1	U	1.2	U	1	U	0.065	J	
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Fluoranthene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Fluorene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Isophorone	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Naphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	
Nitrobenzene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-20		MW12-20		MW12-21		MW12-21		MW12-22		MW12-22	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122233		122232		122004		122236		122007		122228	
DEPTH TO TOP OF SAMPLE								12		12		11		11		12		12	
DEPTH TO BOTTOM OF SAMPLE								12		12		11		11		12		12	
SAMPLE DATE								5-Dec-99		5-Dec-99		12-Apr-99		5-Dec-99		12-Apr-99		3-Dec-99	
QC CODE								DU		SA		SA		SA		SA		SA	
STUDY ID								RI P1S1 - Pu RS		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND								2		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.9	U	2.6	U	2.6	U	3	U	2.5	U	2.6	U
Phenanthrene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
Phenol	UG/L	0.43	5.62%	1	0	5	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
Pyrene	UG/L	0.08	2.25%		0	2	89	1.1	U	1	U	1	U	1.2	U	1	U	1	U
PESTICIDES/ PCBS																			
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.011	U	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.011	U	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.011	U	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0054	U	0.005	U	0.005	U	0.0053	U	0.0062	U	0.005	U
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0054	U	0.005	U	0.005	U	0.0053	U	0.0062	U	0.005	U
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0054	U	0.005	U	0.005	U	0.0053	U	0.0062	U	0.005	U
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.22	U	0.2	U	0.2	U	0.21	U	0.25	U	0.2	U
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0054	U	0.005	U	0.005	U	0.0053	U	0.0062	U	0.005	U
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0054	U	0.005	U	0.005	U	0.0053	U	0.0062	U	0.005	U
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.011	U	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0054	U	0.005	U	0.005	U	0.0053	U	0.0062	U	0.005	U
Endosulfan II	UG/L	0	0.00%		0	0	89	0.011	U	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.011	U	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U
Endrin	UG/L	0	0.00%	0	0	0	89	0.011	U	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.011	U	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.011	U	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0054	U	0.005	U	0.005	UJ	0.0053	U	0.0062	U	0.005	U
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0054	U	0.005	U	0.005	U	0.0053	U	0.0062	U	0.005	U
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0029	J	0.005	U	0.005	U	0.0053	U	0.0062	U	0.005	U
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0054	U	0.005	U	0.005	U	0.0053	U	0.0062	U	0.005	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.011	U	0.01	U	0.01	UJ	0.01	U	0.012	U	0.01	U
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.054	U	0.05	U	0.05	U	0.053	U	0.062	U	0.05	U
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.54	U	0.5	U	0.5	U	0.53	U	0.62	U	0.5	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

		FACILITY						SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
		LOCATION ID						MW12-20		MW12-20		MW12-21		MW12-21		MW12-22		MW12-22		
		MATRIX					G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
		SAMPLE ID						122233		122232		122004		122236		122007		122228		
		DEPTH TO TOP OF SAMPLE						12		12		11		11		12		12		
		DEPTH TO BOTTOM OF SAMPLE						12		12		11		11		12		12		
		SAMPLE DATE						5-Dec-99		5-Dec-99		12-Apr-99		5-Dec-99		12-Apr-99		3-Dec-99		
		QC CODE						DU		SA		SA		SA		SA		SA		
		STUDY ID						RI P1S1 - Pu RS		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	2		2		1		2		1		2		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
METALS																				
Aluminum	UG/L	9880	97.80%		0	89	91	1050		1430		35.3	J	63.3	J	99.6	J	222		
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.7	U	2.7	U	2.2	U	2.7	J	2.2	U	2.7	U	
Arsenic	UG/L	5.1	14.29%	25	0	13	91	1.9	U	1.9	U	1.8	U	1.9	U	1.8	U	1.9	U	
Barium	UG/L	189	100.00%	1000	0	91	91	74.7	J	79	J	87.4	J	101	J	72.9	J	52	J	
Beryllium	UG/L	1.6	19.78%		0	18	91	0.2	U	0.2	U	0.1	U	0.2	U	0.1	U	0.2	U	
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.3	U	0.3	U	0.3	U	0.3	U	0.58	J	0.3	U	
Calcium	UG/L	260000	100.00%		0	91	91	103000		107000		93400		102000		158000		172000		
Chromium	UG/L	18.5	43.96%	50	0	40	91	0.9	U	1.4	J	0.7	U	0.9	U	0.7	U	0.9	U	
Cobalt	UG/L	15.2	19.78%		0	18	91	2	U	2	U	1.5	U	2	U	1.5	U	2	U	
Copper	UG/L	25.1	52.75%	200	0	48	91	2.1	J	1.7	U	1	U	5.5	J	1.1	J	1.7	U	
Cyanide	UG/L	0	0.00%	200	0	0	91	10	U	10	U	5	U	10	U	5	U	10	U	
Iron	UG/L	20700	91.21%	300	44	83	91	848		1360		17.4	J	86.2	J	540		310		
Lead	UG/L	18.8	13.19%	25	0	12	91	1	UJ	1	U	0.9	U	1	U	1.1	J	1	J	
Magnesium	UG/L	72800	100.00%		0	91	91	21400		23200		19400		20900		23700		32700		
Manganese	UG/L	3280	98.90%	300	12	90	91	94.4		97.3		54.2		61.9		501		125		
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	U	0.1	U	0.1	UJ	0.1	U	0.1	UJ	0.1	U	
Nickel	UG/L	38.8	52.75%	100	0	48	91	1.7	U	1.9	J	1.4	U	1.7	U	2.3	J	1.7	U	
Potassium	UG/L	14200	100.00%		0	91	91	2440	J	2490	J	3380	J	3310	J	3720	J	3190	J	
Selenium	UG/L	6.5	21.98%	10	0	20	91	2.4	U	2.4	U	1.9	J	2.4	U	1.8	U	2.4	U	
Silver	UG/L	5.2	38.46%	50	0	35	91	1.9	U	1.9	U	0.9	U	1.9	U	0.99	J	1.9	U	
Sodium	UG/L	408000	100.00%	20000	24	91	91	88900		85600		7940		7880		15200		21000		
Thallium	UG/L	7	41.76%		0	38	91	2.8	J	2.7	U	5	J	2.7	U	5.6	J	2.7	U	
Vanadium	UG/L	18.3	28.57%		0	26	91	2.8	J	2.8	J	1.6	U	1.5	U	1.6	U	1.5	U	
Zinc	UG/L	2640	93.41%		0	85	91	5.3	J	9.5	J	1.8	J	5.3	J	2.8	J	3	J	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-23		MW12-23		MW12-24		MW12-24		MW12-25		MW12-25		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122008		122229		122002		122264		122043		122039		
DEPTH TO TOP OF SAMPLE								12.3		12.3		9.5		10.5		11		11		
DEPTH TO BOTTOM OF SAMPLE								12.3		12.3		9.5		10.5		11		11		
SAMPLE DATE								12-Apr-99		3-Dec-99		11-Apr-99		17-Dec-99		4-May-99		4-May-99		
QC CODE								SA		SA		SA		SA		DU		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		
SAMPLE ROUND								1		2		1		2		1		1		
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
VOLATILE ORGANICS																				
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	U	1	U	
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	UJ	1	UJ	
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40			0.5	U			0.5	U					
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	0.5	UJ	1	U	0.5	U	1	U	1	U	
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7													
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	UJ	1	UJ	
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	UJ			0.5	U					
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
2-Nitropropane	UG/L	0	0.00%	5	0	0	40			25	UJ			25	U					
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	U	5	U	5	U	5	U	5	U	
Acrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
Allyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
Bromobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	U	1	U	
Bromoform	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
Butyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	UJ	1	UJ	
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U	
Chloracetonitrile	UG/L	0	0.00%		0	0	40			25	UJ			25	U					

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-23		MW12-23		MW12-24		MW12-24		MW12-25		MW12-25		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122008		122229		122002		122264		122043		122039		
DEPTH TO TOP OF SAMPLE								12.3		12.3		9.5		10.5		11		11		
DEPTH TO BOTTOM OF SAMPLE								12.3		12.3		9.5		10.5		11		11		
SAMPLE DATE								12-Apr-99		3-Dec-99		11-Apr-99		17-Dec-99		4-May-99		4-May-99		
QC CODE								SA		SA		SA		SA		DU		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		
SAMPLE ROUND								1		2		1		2		1		1		
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	U	1	U
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	UJ	1	UJ
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	U	1	U
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40			25	UJ			25	U				
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U
Ethyl ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U				
Ethyl methacrylate	UG/L	0	0.00%		0	0	40			0.5	UJ			0.5	U				
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40			0.5	U			0.5	U				
Hexachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U				
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U				
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	UJ	5	U	2.5	U	5	U	5	U
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	UJ	1	UJ
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	5	U	5	U	5	U	5	U
Methyl iodide	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	UJ	5	U	2.5	U	5	U	5	U
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40			0.5	UJ			0.5	U				
Methylene bromide	UG/L	0	0.00%	5	0	0	40			0.5	UJ			0.5	U				
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	0.5	U	2	U	0.5	U	2	U	2	U
Naphthalene	UG/L	0	0.00%		0	0	40			0.5	UJ			0.5	U				
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40			25	UR			25	U				
Ortho Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Pentachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	UJ			0.5	UJ				
Propionitrile	UG/L	0	0.00%		0	0	40			25	U			25	U				
Propylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	U	1	U
Tetrahydrofuran	UG/L	0	0.00%		0	0	40			2.5	U			2.5	U				
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	0.5	UJ	1	U	0.5	U	1	U	1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-23		MW12-23		MW12-24		MW12-24		MW12-25		MW12-25	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122008		122229		122002		122264		122043		122039	
DEPTH TO TOP OF SAMPLE								12.3		12.3		9.5		10.5		11		11	
DEPTH TO BOTTOM OF SAMPLE								12.3		12.3		9.5		10.5		11		11	
SAMPLE DATE								12-Apr-99		3-Dec-99		11-Apr-99		17-Dec-99		4-May-99		4-May-99	
QC CODE								SA		SA		SA		SA		DU		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI PHASE 1 STEP 1	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		1	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	U	1	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U				
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	1	U	0.5	UJ	1	U	0.5	U	1	U	1	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	1	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
SEMI-VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6												
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.8	U	2.5	U	2.5	U	2.8	U	2.6	U	2.8	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.8	UR	2.5	U	2.5	UR	2.8	UR	2.6	U	2.8	U
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	UJ	1	U	1.1	U
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	UJ	1	U	1.1	U
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
2-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.8	U	2.5	U	2.5	U	2.8	UJ	2.6	U	2.8	U
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	U	1	UJ	1.1	UJ
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.8	U	2.5	U	2.5	U	2.8	UJ	2.6	U	2.8	U
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.8	UJ	2.5	U	2.5	U	2.8	UJ	2.6	U	2.8	U
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-23		MW12-23		MW12-24		MW12-24		MW12-25		MW12-25	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122008		122229		122002		122264		122043		122039	
DEPTH TO TOP OF SAMPLE								12.3		12.3		9.5		10.5		11		11	
DEPTH TO BOTTOM OF SAMPLE								12.3		12.3		9.5		10.5		11		11	
SAMPLE DATE								12-Apr-99		3-Dec-99		11-Apr-99		17-Dec-99		4-May-99		4-May-99	
QC CODE								SA		SA		SA		SA		DU		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI PHASE 1 STEP 1	
SAMPLE ROUND								1		2		1		2		1		1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
4-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.8	U	2.5	U	2.5	UJ	2.8	U	2.6	U	2.8	U
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.8	U	2.5	U	2.5	UJ	2.8	UR	2.6	U	2.8	U
Acenaphthene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Acenaphthylene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	UJ	1	UJ	1.1	UJ
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1.1	U	1	U	1	U	1.1	UJ	1	U	2.8	U
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Carbazole	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	UJ	1	U	1.1	U
Chrysene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Dibenzofuran	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Fluoranthene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	UJ	1	U	1.1	U
Fluorene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	U	1	UJ	1.1	UJ
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Isophorone	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	UJ	1.1	UJ
Naphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Nitrobenzene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-23		MW12-23		MW12-24		MW12-24		MW12-25		MW12-25	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122008		122229		122002		122264		122043		122039	
DEPTH TO TOP OF SAMPLE								12.3		12.3		9.5		10.5		11		11	
DEPTH TO BOTTOM OF SAMPLE								12.3		12.3		9.5		10.5		11		11	
SAMPLE DATE								12-Apr-99		3-Dec-99		11-Apr-99		17-Dec-99		4-May-99		4-May-99	
QC CODE								SA		SA		SA		SA		DU		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI PHASE 1 STEP 1	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		1	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.8	U	2.5	U	2.5	U	2.8	U	2.6	U	2.8	U
Phenanthrene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Phenol	UG/L	0.43	5.62%	1	0	5	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
Pyrene	UG/L	0.08	2.25%		0	2	89	1.1	U	1	U	1	U	1.1	U	1	U	1.1	U
PESTICIDES/ PCBS																			
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0051	U	0.005	U	0.0051	U	0.0053	U	0.0052	U	0.0053	U
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0051	U	0.005	U	0.0051	U	0.0053	U	0.0052	U	0.0053	U
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0051	U	0.005	U	0.0051	U	0.0053	U	0.0052	U	0.0053	U
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.2	U	0.2	U	0.2	U	0.21	U	0.21	U	0.21	U
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.11	U	0.1	U	0.11	U
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0051	U	0.005	U	0.0051	U	0.0053	U	0.0052	U	0.0053	U
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0051	U	0.005	U	0.0051	U	0.0053	U	0.0052	U	0.0053	U
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0051	U	0.005	U	0.0051	U	0.0053	U	0.0052	U	0.0053	U
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U	0.01	U	0.01	U	0.011	U	0.01	U	0.011	U
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0051	UJ	0.005	U	0.0051	UJ	0.0053	U	0.0052	U	0.0053	U
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0051	U	0.005	U	0.0051	U	0.0053	U	0.0052	U	0.0053	U
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0051	U	0.005	U	0.0051	U	0.0053	U	0.0052	U	0.0053	U
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0051	U	0.005	U	0.0051	U	0.0053	U	0.0052	U	0.0053	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	UJ	0.01	U	0.01	UJ	0.011	U	0.01	U	0.011	U
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.051	U	0.05	U	0.051	U	0.053	U	0.052	U	0.053	U
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.51	U	0.5	U	0.51	U	0.53	U	0.52	U	0.53	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-23		MW12-23		MW12-24		MW12-24		MW12-25		MW12-25	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122008		122229		122002		122264		122043		122039	
DEPTH TO TOP OF SAMPLE								12.3		12.3		9.5		10.5		11		11	
DEPTH TO BOTTOM OF SAMPLE								12.3		12.3		9.5		10.5		11		11	
SAMPLE DATE								12-Apr-99		3-Dec-99		11-Apr-99		17-Dec-99		4-May-99		4-May-99	
QC CODE								SA		SA		SA		SA		DU		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI PHASE 1 STEP 1	
SAMPLE ROUND								1		2		1		2		1		1	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	289		971		69.3	J	49.6	J	15.8	U	15.8	U
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.2	U	2.7	U	2.2	U	2.2	U	5.2	U	5.2	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	2.1	J	1.9	U	1.8	U	2.5	U	3.1	J	2.9	U
Barium	UG/L	189	100.00%	1000	0	91	91	47.1	J	86.4	J	76.4	J	64.6	J	166	J	165	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.1	U	0.2	U	0.1	U	0.1	U	0.35	J	0.3	U
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.3	U	0.3	U	0.3	U	0.2	U	0.7	J	0.91	J
Calcium	UG/L	260000	100.00%		0	91	91	148000		162000		102000		95900		151000		156000	
Chromium	UG/L	18.5	43.96%	50	0	40	91	0.7	U	1	J	0.73	J	1	U	1.6	J	1.3	J
Cobalt	UG/L	15.2	19.78%		0	18	91	1.5	U	2	U	1.5	U	1.3	U	3.3	U	3.3	U
Copper	UG/L	25.1	52.75%	200	0	48	91	1	U	1.7	U	1.4	J	1.9	U	4.4	J	4.4	J
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	10	U	5	U	10	U	5	U	5	U
Iron	UG/L	20700	91.21%	300	44	83	91	474		1210		66	J	20.3	U	17.1	U	17.1	U
Lead	UG/L	18.8	13.19%	25	0	12	91	0.9	U	1	U	1	J	1.3	UJ	0.9	U	0.9	U
Magnesium	UG/L	72800	100.00%		0	91	91	28000		25000		22000		20900		40300		41700	
Manganese	UG/L	3280	98.90%	300	12	90	91	114		418		44.5		10.6	J	586		642	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	UJ	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	UG/L	38.8	52.75%	100	0	48	91	2.6	J	2	J	1.8	J	1.7	U	10.2	U	10.2	U
Potassium	UG/L	14200	100.00%		0	91	91	3020	J	4290	J	1060	J	767	J	1390	J	1260	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	3	J	2.4	U	1.8	U	2.2	U	2.1	J	6.5	J
Silver	UG/L	5.2	38.46%	50	0	35	91	0.9	U	1.9	U	1.1	J	1.3	UJ	4.3	J	4.6	J
Sodium	UG/L	408000	100.00%	20000	24	91	91	17300		61700		8780		13700		4600	J	4480	J
Thallium	UG/L	7	41.76%		0	38	91	2.5	J	2.7	U	3	J	3.5	J	6.1	J	6	J
Vanadium	UG/L	18.3	28.57%		0	26	91	1.6	U	1.5	J	1.6	U	1.8	U	3.8	U	3.8	U
Zinc	UG/L	2640	93.41%		0	85	91	16.2	J	5.2	J	3.2	J	7.1	J	2.3	J	17.7	J

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-25		MW12-26		MW12-26		MW12-26		MW12-27		MW12-27	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122263		122003		122265		122266		122012		122230	
DEPTH TO TOP OF SAMPLE								11		11		11		11		10.25		10.25	
DEPTH TO BOTTOM OF SAMPLE								11		11		11		11		10.25		10.25	
SAMPLE DATE								16-Dec-99		11-Apr-99		17-Dec-99		17-Dec-99		14-Apr-99		3-Dec-99	
QC CODE								SA		SA		DU		SA		SA		SA	
STUDY ID								RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	2		1		2		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
VOLATILE ORGANICS																			
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7												
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
2-Nitropropane	UG/L	0	0.00%	5	0	0	40	25	U			25	U	25	U			25	U
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	U	5	U	3.4	J	2	J	5	U
Acrylonitrile	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
Allyl chloride	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
Benzene	UG/L	0	0.00%	1	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
Bromobenzene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
Bromodichloromethane	UG/L	0	0.00%		0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
Bromoform	UG/L	0	0.00%		0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
Butyl chloride	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
Carbon disulfide	UG/L	0	0.00%		0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
Chloracetonitrile	UG/L	0	0.00%		0	0	40	25	U			25	U	25	U			25	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12			
LOCATION ID								MW12-25		MW12-26		MW12-26		MW12-26		MW12-27		MW12-27			
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G	
SAMPLE ID								122263		122003		122265		122266		122012		122230			
DEPTH TO TOP OF SAMPLE								11		11		11		11		10.25		10.25			
DEPTH TO BOTTOM OF SAMPLE								11		11		11		11		10.25		10.25			
SAMPLE DATE								16-Dec-99		11-Apr-99		17-Dec-99		17-Dec-99		14-Apr-99		3-Dec-99			
QC CODE								SA		SA		DU		SA		SA		SA			
STUDY ID								RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS			
SAMPLE ROUND								2		1		2		2		1		2			
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)		
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U		
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U		
Chloroethane	UG/L	0	0.00%	5	0	0	89	0.5	UJ	1	U	0.5	UJ	0.5	U	1	U	0.5	U		
Chloroform	UG/L	0	0.00%	7	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U		
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U		
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U		
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40	25	U			25	U	25	U			25	UJ		
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U		
Ethyl ether	UG/L	0	0.00%		0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Ethyl methacrylate	UG/L	0	0.00%		0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Hexachloroethane	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Methyl bromide	UG/L	0	0.00%	5	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U		
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	2.5	U	5	U	2.5	U	2.5	U	5	U	2.5	UJ		
Methyl chloride	UG/L	0	0.00%	5	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U		
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	5	U	5	U	5	U	5	UJ		
Methyl iodide	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	2.5	U	5	U	2.5	U	2.5	U	5	U	2.5	U		
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Methylene bromide	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Methylene chloride	UG/L	0	0.00%	5	0	0	89	0.5	U	2	U	0.5	U	0.5	U	2	U	0.5	U		
Naphthalene	UG/L	0	0.00%		0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40	25	U			25	U	25	U			25	UR		
Ortho Xylene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Pentachloroethane	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	UJ			0.5	UJ		
Propionitrile	UG/L	0	0.00%		0	0	40	25	U			25	U	25	U			25	U		
Propylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U		
Styrene	UG/L	0	0.00%	5	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U		
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U		
Tetrahydrofuran	UG/L	0	0.00%		0	0	40	2.5	U			2.5	U	2.5	U			2.5	U		
Toluene	UG/L	3.1	5.62%	5	0	5	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U		

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-25		MW12-26		MW12-26		MW12-26		MW12-27		MW12-27	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122263		122003		122265		122266		122012		122230	
DEPTH TO TOP OF SAMPLE								11		11		11		11		10.25		10.25	
DEPTH TO BOTTOM OF SAMPLE								11		11		11		11		10.25		10.25	
SAMPLE DATE								16-Dec-99		11-Apr-99		17-Dec-99		17-Dec-99		14-Apr-99		3-Dec-99	
QC CODE								SA		SA		DU		SA		SA		SA	
STUDY ID								RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	2		1		2		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	0.5	U	1	U	0.5	U	0.5	U	1	U	0.5	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U			0.5	U	0.5	U			0.5	U
SEMI-VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6												
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.8	U	2.5	U	2.6	U	2.6	U	3	U	2.6	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	UJ	1	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.8	UR	2.5	UR	2.6	UJ	2.6	UJ	3	UR	2.6	UJ
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	UJ	1	U	1	UJ	1.1	UJ	1.2	U	1	U
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	UJ	1	U	1	U	1.1	U	1.2	U	1	U
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
2-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.8	UJ	2.5	U	2.6	UJ	2.6	UJ	3	U	2.6	U
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.8	UJ	2.5	U	2.6	UJ	2.6	UJ	3	U	2.6	U
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.8	UJ	2.5	U	2.6	UJ	2.6	UJ	3	UJ	2.6	U
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-25		MW12-26		MW12-26		MW12-26		MW12-27		MW12-27		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122263		122003		122265		122266		122012		122230		
DEPTH TO TOP OF SAMPLE								11		11		11		11		10.25		10.25		
DEPTH TO BOTTOM OF SAMPLE								11		11		11		11		10.25		10.25		
SAMPLE DATE								16-Dec-99		11-Apr-99		17-Dec-99		17-Dec-99		14-Apr-99		3-Dec-99		
QC CODE								SA		SA		DU		SA		SA		SA		
STUDY ID								RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		
SAMPLE ROUND								2		1		2		2		1		2		
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
4-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.8	U	2.5	UJ	2.6	U	2.6	U	3	UJ	2.6	UJ
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.8	UR	2.5	UJ	2.6	UJ	2.6	UJ	3	UJ	2.6	U
Acenaphthene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Acenaphthylene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1.1	UJ	1	U	1	UJ	1.1	UJ	1.2	U	1	U
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1.9	U	1	U	1	U	1.1	U	1.2	U	1	U
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1.1	U	0.064	J	1	U	1.1	U	1.2	U	1	U
Carbazole	UG/L	0	0.00%		0	0	89	1.1	UJ	1	U	1	UJ	1.1	UJ	1.2	U	1	U
Chrysene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Dibenzofuran	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Fluoranthene	UG/L	0	0.00%		0	0	89	1.1	UJ	1	U	1	U	1.1	U	1.2	U	1	U
Fluorene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Isophorone	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Naphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U
Nitrobenzene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-25		MW12-26		MW12-26		MW12-26		MW12-27		MW12-27		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122263		122003		122265		122266		122012		122230		
DEPTH TO TOP OF SAMPLE								11		11		11		11		10.25		10.25		
DEPTH TO BOTTOM OF SAMPLE								11		11		11		11		10.25		10.25		
SAMPLE DATE								16-Dec-99		11-Apr-99		17-Dec-99		17-Dec-99		14-Apr-99		3-Dec-99		
QC CODE								SA		SA		DU		SA		SA		SA		
STUDY ID								RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	2		1		2		2		1		2		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.8	U	2.5	U	2.6	U	2.6	U	3	UJ	2.6	U	
Phenanthrene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U	
Phenol	UG/L	0.43	5.62%	1	0	5	89	1.1	U	1	U	1	U	1.1	U	1.2	U	1	U	
Pyrene	UG/L	0.08	2.25%		0	2	89	1.1	U	1	U	1	U	1.1	U	0.08	J	1	U	
PESTICIDES/ PCBS																				
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.011	U	0.01	U	0.01	U	0.011	U	0.012	U	0.01	U	
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.011	U	0.01	U	0.01	U	0.011	U	0.012	U	0.01	U	
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.011	U	0.01	U	0.01	U	0.011	U	0.012	U	0.01	U	
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0053	U	0.0051	U	0.0051	U	0.0053	U.	0.0061	U	0.005	U	
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0053	U	0.0051	U	0.0051	U	0.0053	U	0.0061	U	0.005	U	
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0053	U	0.0051	U	0.0051	U	0.0053	U	0.0061	U	0.005	U	
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.1	U	0.1	U	0.11	U	0.12	U	0.1	U	
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.21	U	0.2	U	0.2	U	0.21	U	0.24	U	0.2	U	
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.1	U	0.1	U	0.11	U	0.12	U	0.1	U	
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.1	U	0.1	U	0.11	U	0.12	U	0.1	U	
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.1	U	0.1	U	0.11	U	0.12	U	0.1	U	
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.1	U	0.1	U	0.11	U	0.12	U	0.1	U	
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.11	U	0.1	U	0.1	U	0.11	U	0.12	U	0.1	U	
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0053	U	0.0051	U	0.0051	U	0.0053	U	0.0061	U	0.005	U	
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0053	U	0.0051	U	0.0051	U	0.0053	U	0.0061	U	0.005	U	
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.011	U	0.01	U	0.01	U	0.011	U	0.012	U	0.01	U	
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0053	U	0.0051	U	0.0051	U	0.0053	U	0.0061	U	0.005	U	
Endosulfan II	UG/L	0	0.00%		0	0	89	0.011	U	0.01	U	0.01	U	0.011	U	0.012	U	0.01	U	
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.011	U	0.01	U	0.01	U	0.011	U	0.012	U	0.01	U	
Endrin	UG/L	0	0.00%	0	0	0	89	0.011	U	0.01	U	0.01	U	0.011	U	0.012	U	0.01	U	
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.011	U	0.01	U	0.01	U	0.011	U	0.012	U	0.01	U	
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.011	U	0.01	U	0.01	U	0.011	U	0.012	U	0.01	U	
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0053	U	0.0051	UJ	0.0051	U	0.0053	U	0.0061	U	0.005	U	
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0056		0.0051	U	0.0051	U	0.0053	U	0.0061	U	0.005	U	
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0053	U	0.0051	U	0.0051	U	0.0053	U	0.0061	U	0.005	U	
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0053	U	0.0051	U	0.0051	U	0.0053	U	0.0061	U	0.005	U	
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.011	U	0.01	UJ	0.01	U	0.011	U	0.012	U	0.01	U	
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.053	U	0.051	U	0.051	U	0.053	U	0.061	U	0.05	U	
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.53	U	0.51	U	0.51	U	0.53	U	0.61	U	0.5	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-25		MW12-26		MW12-26		MW12-26		MW12-27		MW12-27	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122263		122003		122265		122266		122012		122230	
DEPTH TO TOP OF SAMPLE								11		11		11		11		10.25		10.25	
DEPTH TO BOTTOM OF SAMPLE								11		11		11		11		10.25		10.25	
SAMPLE DATE								16-Dec-99		11-Apr-99		17-Dec-99		17-Dec-99		14-Apr-99		3-Dec-99	
QC CODE								SA		SA		DU		SA		SA		SA	
STUDY ID								RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND								2		1		2		2		1		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	46.5	J	791		37.9	J	44.5	J	540		182	J
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.2	U	2.2	U	2.2	U	[illegible]	J	2.2	U	2.7	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	2.5	U	1.8	U	2.9	J	2.5	U	1.8	U	1.9	U
Barium	UG/L	189	100.00%	1000	0	91	91	160	J	117	J	137	J	134	J	39.7	J	27.7	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.1	U	0.1	U	0.86	J	1.6	J	0.1	U	0.2	U
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.2	U	0.3	U	0.2	U	0.39	J	0.43	J	0.3	U
Calcium	UG/L	260000	100.00%		0	91	91	143000		145000		148000		149000		97000		80300	
Chromium	UG/L	18.5	43.96%	50	0	40	91	1	U	1.8	J	1	U	2.9	J	1.4	J	0.9	U
Cobalt	UG/L	15.2	19.78%		0	18	91	1.3	U	2.4	J	1.3	U	2.7	J	1.7	J	2	U
Copper	UG/L	25.1	52.75%	200	0	48	91	1.9	U	1	U	1.9	U	1.9	U	2.3	J	18	J
Cyanide	UG/L	0	0.00%	200	0	0	91	10	U	5	U	10	U	10	U	5	U	10	U
Iron	UG/L	20700	91.21%	300	44	83	91	20.3	U	1430		1840		1710		692	J	214	
Lead	UG/L	18.8	13.19%	25	0	12	91	1.3	UJ	0.9	U	1.3	UJ	1.3	UJ	0.9	U	1	U
Magnesium	UG/L	72800	100.00%		0	91	91	37500		29800		29300		29700		15400		12300	
Manganese	UG/L	3280	98.90%	300	12	90	91	450		3280		3200		3120		130		109	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	U	0.1	UJ	0.1	U	0.1	U	0.1	UJ	0.1	U
Nickel	UG/L	38.8	52.75%	100	0	48	91	1.7	U	2.1	J	2	J	2.6	J	3.6	J	1.7	U
Potassium	UG/L	14200	100.00%		0	91	91	1410	J	1640	J	1510	J	1850	J	3940	J	2710	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	2.2	U	1.8	U	2.2	U	2.5	U	1.8	U	2.4	U
Silver	UG/L	5.2	38.46%	50	0	35	91	1.3	UJ	0.9	U	1.3	UJ	3	J	1.5	J	1.9	U
Sodium	UG/L	408000	100.00%	20000	24	91	91	4680	J	4590	J	6760		6360		11000		34800	
Thallium	UG/L	7	41.76%		0	38	91	3.2	U	4.2	J	4.8	J	7	J	4.5	J	2.7	U
Vanadium	UG/L	18.3	28.57%		0	26	91	1.8	U	1.6	U	1.8	U	1.8	U	1.6	U	1.5	U
Zinc	UG/L	2640	93.41%		0	85	91	4.3	J	7	J	7.5	J	4.1	J	5.7	J	15.7	J

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-29		MW12-29		MW12-30		MW12-30		MW12-31		MW12-31		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122014		122251		122013		122252		122032		122234		
DEPTH TO TOP OF SAMPLE								14		14		13.7		14		10.5		0		
DEPTH TO BOTTOM OF SAMPLE								14		14		13.7		14		10.5		0		
SAMPLE DATE								14-Apr-99		13-Dec-99		14-Apr-99		13-Dec-99		24-Apr-99		3-Dec-99		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		
SAMPLE ROUND			FREQUENCY	NYSDEC	NUMBER	NUMBER	NUMBER	1		2		1		2		1		2		
PARAMETER	UNIT	MAXIMUM	OF DETECTION	CLASS GA STD.	ABOVE STD.	OF DETECTS	OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
VOLATILE ORGANICS																				
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40			0.5	U			0.5	U			0.5	U	
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7													
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
2-Nitropropane	UG/L	0	0.00%	5	0	0	40			25	U			25	U			25	U	
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	U	5	U	5	U	5	U	5	U	
Acrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Allyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Bromobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Bromoform	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Butyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Chloracetonitrile	UG/L	0	0.00%		0	0	40			25	U			25	U			25	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-29		MW12-29		MW12-30		MW12-30		MW12-31		MW12-31		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122014		122251		122013		122252		122032		122234		
DEPTH TO TOP OF SAMPLE								14		14		13.7		14		10.5		0		
DEPTH TO BOTTOM OF SAMPLE								14		14		13.7		14		10.5		0		
SAMPLE DATE								14-Apr-99		13-Dec-99		14-Apr-99		13-Dec-99		24-Apr-99		3-Dec-99		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	UJ	1	UJ	0.5	U	
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40			25	U			25	U			25	UJ	
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Ethyl ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U	
Ethyl methacrylate	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U	
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40			0.5	U			0.5	U			0.5	U	
Hexachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U	
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U	
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	U	5	U	2.5	U	5	U	2.5	UJ	
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	UJ	0.5	U	
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	5	U	5	U	5	U	5	UJ	
Methyl iodide	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	U	5	U	2.5	U	5	U	2.5	U	
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40			0.5	U			0.5	U			0.5	U	
Methylene bromide	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	0.5	U	2	U	0.5	U	2	U	0.5	U	
Naphthalene	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U	
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40			25	U			25	U			25	UR	
Ortho Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Pentachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	UJ			0.5	U			0.5	UJ	
Propionitrile	UG/L	0	0.00%		0	0	40			25	U			25	U			25	U	
Propylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U	
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U	
Tetrahydrofuran	UG/L	0	0.00%		0	0	40			2.5	U			2.5	U			2.5	U	
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	0.4	J	1	U	0.28	J	1	U	0.5	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-29		MW12-29		MW12-30		MW12-30		MW12-31		MW12-31	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122014		122251		122013		122252		122032		122234	
DEPTH TO TOP OF SAMPLE								14		14		13.7		14		10.5		0	
DEPTH TO BOTTOM OF SAMPLE								14		14		13.7		14		10.5		0	
SAMPLE DATE								14-Apr-99		13-Dec-99		14-Apr-99		13-Dec-99		24-Apr-99		3-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
SEMI-VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	UJ	1.1	UJ
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1.1	U	1.1	U	1.2	U	1.1	U	1	UJ	1.1	UJ
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6												
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.6	U	2.8	U	3	U	2.8	U	2.5	U	2.8	UJ
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1.1	UJ	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.6	UR	2.8	UJ	3	UR	2.8	UJ	2.5	U	1.8	UJ
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
2-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.8	U	3	U	2.8	U	2.5	U	2.8	UJ
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	UJ	1.2	U	1.1	UJ	1	UJ	1.1	UJ
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.8	U	3	U	2.8	U	2.5	U	2.8	UJ
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.6	UJ	2.8	UJ	3	UJ	2.8	UJ	2.5	U	2.8	UJ
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	UJ	1.1	UJ

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

		FACILITY						SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
		LOCATION ID						MW12-29		MW12-29		MW12-30		MW12-30		MW12-31		MW12-31	
		MATRIX					G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
		SAMPLE ID						122014		122251		122013		122252		122032		122234	
		DEPTH TO TOP OF SAMPLE						14		14		13.7		14		10.5		0	
		DEPTH TO BOTTOM OF SAMPLE						14		14		13.7		14		10.5		0	
		SAMPLE DATE						14-Apr-99		13-Dec-99		14-Apr-99		13-Dec-99		24-Apr-99		3-Dec-99	
		QC CODE						SA		SA		SA		SA		SA		SA	
		STUDY ID						RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
4-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	UJ	2.8	UJ	3	U	2.8	UJ	2.5	U	2.8	UJ
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.6	UJ	2.8	U	3	U	2.8	U	2.5	U	2.8	UJ
Acenaphthene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Acenaphthylene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1.1	U	1.1	U	3.8	U	1.1	U	1	U	1.1	UJ
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Carbazole	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Chrysene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	0.15	J	1.1	U	0.079	J	1.1	U	1	U	1.1	UJ
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1.1	U	0.016	J	1.2	U	0.38	J	1	U	1.1	UJ
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Dibenzofuran	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	4.3		1.1	U	0.48	J	1.1	U	1	U	1.1	UJ
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Fluoranthene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Fluorene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Isophorone	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Naphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Nitrobenzene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-29		MW12-29		MW12-30		MW12-30		MW12-31		MW12-31	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122014		122251		122013		122252		122032		122234	
DEPTH TO TOP OF SAMPLE								14		14		13.7		14		10.5		0	
DEPTH TO BOTTOM OF SAMPLE								14		14		13.7		14		10.5		0	
SAMPLE DATE								14-Apr-99		13-Dec-99		14-Apr-99		13-Dec-99		24-Apr-99		3-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.6	UJ	2.7	UJ	3	U	2.6	UJ	2.5	UR	2.8	UJ
Phenanthrene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Phenol	UG/L	0.43	5.62%	1	0	5	89	1.1	U	1.1	U	1.2	U	1.1	U	1	U	1.1	UJ
Pyrene	UG/L	0.08	2.25%		0	2	89	1.1	U	1.1	UJ	1.2	U	1.1	UJ	1	U	1.1	UJ
PESTICIDES/ PCBS																			
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0051	U	0.0055	U	0.0052	U	0.0056	U	0.005	U	0.0053	U
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0051	U	0.0055	U	0.0052	U	0.0056	U	0.005	UJ	0.0053	U
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0051	U	0.0055	U	0.0052	U	0.0056	U	0.005	U	0.0053	U
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.2	U	0.22	U	0.21	U	0.22	U	0.2	U	0.21	U
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.1	U
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.11	U	0.1	U	0.1	U
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0051	U	0.0055	U	0.0052	U	0.0056	U	0.005	UJ	0.0053	U
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0051	U	0.0055	U	0.0052	U	0.0056	U	0.005	U	0.0053	U
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0051	U	0.0055	U	0.0052	U	0.0056	U	0.005	U	0.0053	U
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U	0.011	U	0.01	U	0.011	U	0.01	U	0.01	U
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0051	U	0.0055	U	0.0052	U	0.0056	U	0.005	U	0.0053	U
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0051	U	0.0055	U	0.0052	U	0.0056	U	0.005	U	0.0053	U
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0051	U	0.0055	U	0.0052	U	0.0056	U	0.005	U	0.0053	U
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0051	U	0.0055	U	0.0052	U	0.0056	U	0.005	U	0.0053	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	U	0.011	U	0.01	U	0.011	U	0.01	UJ	0.01	U
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.051	U	0.055	U	0.052	U	0.056	U	0.05	U	0.053	U
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.51	U	0.55	U	0.52	U	0.56	U	0.5	U	0.53	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

		FACILITY						SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
		LOCATION ID						MW12-29		MW12-29		MW12-30		MW12-30		MW12-31		MW12-31	
		MATRIX					G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
		SAMPLE ID						122014		122251		122013		122252		122032		122234	
		DEPTH TO TOP OF SAMPLE						14		14		13.7		14		10.5		0	
		DEPTH TO BOTTOM OF SAMPLE						14		14		13.7		14		10.5		0	
		SAMPLE DATE						14-Apr-99		13-Dec-99		14-Apr-99		13-Dec-99		24-Apr-99		3-Dec-99	
		QC CODE						SA		SA		SA		SA		SA		SA	
		STUDY ID						RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	30.8	J	101	J	200	J	662		57.3	J	491	
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.2	U	3.6	J	2.2	U	2.2	U	2.4	J	2.7	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	1.8	U	2.5	U	1.8	U	2.5	U	1.8	U	1.9	J
Barium	UG/L	189	100.00%	1000	0	91	91	78.2	J	84.1	J	53	J	56.9	J	39	J	51.8	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.2	U
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.3	U	0.2	U	0.3	U	0.2	U	0.3	U	0.3	U
Calcium	UG/L	260000	100.00%		0	91	91	102000		102000		92500		84900		112000	J	125000	
Chromium	UG/L	18.5	43.96%	50	0	40	91	0.7	U	1	U	0.91	J	1	U	1.2	U	0.9	U
Cobalt	UG/L	15.2	19.78%		0	18	91	1.5	U	1.3	U	1.5	U	1.3	U	1.5	U	2	U
Copper	UG/L	25.1	52.75%	200	0	48	91	1	U	13.7	J	1.9	J	1.9	U	1.5	J	1.7	U
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	10	U	5	U	10	U	5	U	10	U
Iron	UG/L	20700	91.21%	300	44	83	91	46.7	J	134		252	J	630		43.7	J	490	
Lead	UG/L	18.8	13.19%	25	0	12	91	0.9	U	1.3	UJ	0.9	U	1.3	UJ	0.9	U	1	UJ
Magnesium	UG/L	72800	100.00%		0	91	91	21600		21800		21500		20600		23300	J	24500	
Manganese	UG/L	3280	98.90%	300	12	90	91	177		194		184		167		45.7	J	22.9	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	UJ	0.17	J	0.1	UJ	0.15	J	0.1	U	0.1	U
Nickel	UG/L	38.8	52.75%	100	0	48	91	2.6	J	1.7	U	3.9	J	2.1	J	2.7	J	1.7	U
Potassium	UG/L	14200	100.00%		0	91	91	4410	J	3640	J	6710		5030		2800	J	2100	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	1.8	U	2.2	U	1.8	U	2.2	U	1.8	UJ	2.4	U
Silver	UG/L	5.2	38.46%	50	0	35	91	0.9	U	1.3	UJ	0.9	U	1.3	UJ	0.9	U	1.9	U
Sodium	UG/L	408000	100.00%	20000	24	91	91	9100		9290		12300		13700		10100	J	12100	
Thallium	UG/L	7	41.76%		0	38	91	5.2	J	3.2	U	5.6	J	3.2	U	1.9	U	2.7	U
Vanadium	UG/L	18.3	28.57%		0	26	91	1.6	U	1.8	U	1.6	U	1.8	U	1.6	U	1.5	U
Zinc	UG/L	2640	93.41%		0	85	91	10	J	18.9	J	20.5		9.9	J	8.4	J	5.3	J

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-32		MW12-32		MW12-33		MW12-33		MW12-34		MW12-34	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122020		122231		122022		122243		122045		122246	
DEPTH TO TOP OF SAMPLE								11		11.5		15.5		14		15		0	
DEPTH TO BOTTOM OF SAMPLE								11		11.5		15.5		14		15		0	
SAMPLE DATE								20-Apr-99		3-Dec-99		21-Apr-99		7-Dec-99		5-May-99		7-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
VOLATILE ORGANICS																			
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	U	0.5	U
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40			0.5	U			0.5	U			0.5	U
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	0.5	UJ	1	U	0.5	U	1	U	0.5	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7												
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	UJ	0.5	U
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	UJ			0.5	U			0.5	U
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
2-Nitropropane	UG/L	0	0.00%	5	0	0	40			25	UJ			25	U			25	U
Acetone	UG/L	9	6.74%		0	6	89	2	J	5	U	5	U	5	UJ	5	U	5	UJ
Acrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Allyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Bromobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	U	0.5	U
Bromoform	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	UJ	1	U	0.5	UJ
Butyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Chloracetonitrile	UG/L	0	0.00%		0	0	40			25	UJ			25	U			25	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-32		MW12-32		MW12-33		MW12-33		MW12-34		MW12-34	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122020		122231		122022		122243		122045		122246	
DEPTH TO TOP OF SAMPLE								11		11.5		15.5		14		15		0	
DEPTH TO BOTTOM OF SAMPLE								11		11.5		15.5		14		15		0	
SAMPLE DATE								20-Apr-99		3-Dec-99		21-Apr-99		7-Dec-99		5-May-99		7-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	U	0.5	U
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	UJ	0.5	U
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	U	0.5	U
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40			25	UJ			25	UJ			25	UJ
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Ethyl ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Ethyl methacrylate	UG/L	0	0.00%		0	0	40			0.5	UJ			0.5	U			0.5	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40			0.5	U			0.5	U			0.5	U
Hexachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	UJ	5	U	2.5	UJ	5	U	2.5	UJ
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	UJ	0.5	U
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	5	U	5	UJ	5	U	5	UJ
Methyl iodide	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	UJ	5	U	2.5	U	5	UJ	2.5	U
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40			0.5	UJ			0.5	U			0.5	U
Methylene bromide	UG/L	0	0.00%	5	0	0	40			0.5	UJ			0.5	U			0.5	U
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	0.5	U	2	U	0.5	U	2	U	0.5	U
Naphthalene	UG/L	0	0.00%		0	0	40			0.5	UJ			0.5	U			0.5	U
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40			25	UR			25	UR			25	UR
Ortho Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Pentachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	UJ			0.5	UJ			0.5	UJ
Propionitrile	UG/L	0	0.00%		0	0	40			25	U			25	U			25	U
Propylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	U	0.5	U
Tetrahydrofuran	UG/L	0	0.00%		0	0	40			2.5	U			2.5	U			2.5	U
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	0.5	UJ	1	U	0.5	U	1	U	0.5	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-32		MW12-32		MW12-33		MW12-33		MW12-34		MW12-34	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122020		122231		122022		122243		122045		122246	
DEPTH TO TOP OF SAMPLE								11		11.5		15.5		14		15		0	
DEPTH TO BOTTOM OF SAMPLE								11		11.5		15.5		14		15		0	
SAMPLE DATE								20-Apr-99		3-Dec-99		21-Apr-99		7-Dec-99		5-May-99		7-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	UJ	1	U	0.5	U	1	U	0.5	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U			0.5	U
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	1	U	0.5	UJ	1	U	0.5	U	1	U	0.5	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	1	U	0.5	U	1	U	0.5	U	1	U	0.5	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U			0.5	U
SEMI-VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1.2	U	1.1	UJ	1.1	U	0.056	J	1	U	2.2	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6												
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	3	U	2.9	UJ	2.8	U	2.5	U	2.5	U	5.6	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	3	U	2.9	UR	2.8	U	2.5	U	2.5	U	5.6	UJ
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
2-Methylphenol	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	3	U	2.9	UJ	2.8	U	2.5	U	2.5	U	5.6	U
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	UJ	2.2	U
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	3	U	2.9	UJ	2.8	U	2.5	U	2.5	U	5.6	U
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	3	U	2.9	UJ	2.8	U	2.5	U	2.5	U	5.6	U
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-32		MW12-32		MW12-33		MW12-33		MW12-34		MW12-34	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122020		122231		122022		122243		122045		122246	
DEPTH TO TOP OF SAMPLE								11		11.5		15.5		14		15		0	
DEPTH TO BOTTOM OF SAMPLE								11		11.5		15.5		14		15		0	
SAMPLE DATE								20-Apr-99		3-Dec-99		21-Apr-99		7-Dec-99		5-May-99		7-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND								1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
4-Methylphenol	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	3	U	2.9	UJ	2.8	U	2.5	U	2.5	U	5.6	UJ
4-Nitrophenol	UG/L	0	0.00%		0	0	89	3	U	2.9	UJ	2.8	U	2.5	U	2.5	U	5.6	U
Acenaphthene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Acenaphthylene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Anthracene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	UJ	2.2	U
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	13	U
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Carbazole	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Chrysene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	0.15	J	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Dibenzofuran	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1.2	U	1.1	UJ	1.1	U	1	U	0.067	J	2.2	U
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Fluoranthene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Fluorene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	UJ	2.2	U
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Isophorone	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	UJ	2.2	U
Naphthalene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Nitrobenzene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-32		MW12-32		MW12-33		MW12-33		MW12-34		MW12-34	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122020		122231		122022		122243		122045		122246	
DEPTH TO TOP OF SAMPLE								11		11.5		15.5		14		15		0	
DEPTH TO BOTTOM OF SAMPLE								11		11.5		15.5		14		15		0	
SAMPLE DATE								20-Apr-99		3-Dec-99		21-Apr-99		7-Dec-99		5-May-99		7-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	3	U	2.9	UJ	2.8	U	2.5	U	2.5	U	5.6	U
Phenanthrene	UG/L	0	0.00%		0	0	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Phenol	UG/L	0.43	5.62%	1	0	5	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
Pyrene	UG/L	0.08	2.25%		0	2	89	1.2	U	1.1	UJ	1.1	U	1	U	1	U	2.2	U
PESTICIDES/ PCBS																			
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U	0.011	U	0.01	U	0.01	U	0.016	U	0.01	U
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U	0.011	U	0.01	U	0.01	U	0.016	U	0.01	U
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.01	U	0.011	U	0.01	U	0.01	U	0.016	U	0.01	U
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0051	U	0.0055	U	0.005	U	0.005	U	0.0081	U	0.005	U
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0051	U	0.0055	U	0.005	UJ	0.005	U	0.0081	U	0.005	U
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0051	U	0.0055	U	0.005	U	0.005	U	0.0081	U	0.005	U
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.1	U	0.16	U	0.1	U
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.2	U	0.22	U	0.2	U	0.2	U	0.32	U	0.2	U
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.1	U	0.16	U	0.1	U
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.1	U	0.16	U	0.1	U
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.1	U	0.16	U	0.1	U
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.1	U	0.16	U	0.1	U
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	0.1	U	0.1	U	0.16	U	0.1	U
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0051	U	0.0055	U	0.005	UJ	0.005	U	0.0081	U	0.005	U
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0051	U	0.0055	U	0.005	U	0.005	U	0.0081	U	0.005	U
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U	0.011	U	0.01	U	0.01	U	0.016	U	0.01	U
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0051	U	0.0055	U	0.005	U	0.005	U	0.0081	U	0.005	U
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U	0.011	U	0.01	U	0.01	U	0.016	U	0.01	U
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U	0.011	U	0.01	U	0.01	U	0.016	U	0.01	U
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U	0.011	U	0.01	U	0.01	U	0.016	U	0.01	U
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U	0.011	U	0.01	U	0.01	U	0.016	U	0.01	U
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U	0.011	U	0.01	U	0.01	U	0.016	U	0.01	U
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0051	U	0.0055	U	0.005	U	0.005	U	0.0081	U	0.005	U
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0051	U	0.0055	U	0.005	U	0.005	U	0.0081	U	0.005	U
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0051	U	0.0055	U	0.005	U	0.005	U	0.0081	U	0.005	U
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0051	U	0.0055	U	0.005	U	0.005	U	0.0081	U	0.005	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	UJ	0.011	U	0.01	U	0.01	U	0.016	UJ	0.01	U
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.051	U	0.055	U	0.05	U	0.05	U	0.081	U	0.05	U
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.51	U	0.55	U	0.5	U	0.5	U	0.81	U	0.5	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-32		MW12-32		MW12-33		MW12-33		MW12-34		MW12-34	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122020		122231		122022		122243		122045		122246	
DEPTH TO TOP OF SAMPLE								11		11.5		15.5		14		15		0	
DEPTH TO BOTTOM OF SAMPLE								11		11.5		15.5		14		15		0	
SAMPLE DATE								20-Apr-99		3-Dec-99		21-Apr-99		7-Dec-99		5-May-99		7-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND								1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	67	J	6670		513	J	71.5	J	65.4	J	246	
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.2	U	2.7	U	2.2	U	2.7	U	5.2	U	2.7	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	1.8	U	3.6	J	1.8	U	1.9	U	3.9	J	1.9	U
Barium	UG/L	189	100.00%	1000	0	91	91	54	J	97.6	J	144	J	137	J	83.7	J	49.5	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.1	U	0.2	U	0.1	U	0.2	U	0.3	U	0.2	U
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.3	U	0.3	U	0.3	U	0.3	U	1.1	J	0.3	U
Calcium	UG/L	260000	100.00%		0	91	91	112000		132000		110000	J	113000		138000		153000	
Chromium	UG/L	18.5	43.96%	50	0	40	91	0.7	U	8.3	J	2.2	J	0.9	U	1.3	J	0.9	U
Cobalt	UG/L	15.2	19.78%		0	18	91	1.5	U	3.1	J	1.5	U	2	U	3.3	U	2	U
Copper	UG/L	25.1	52.75%	200	0	48	91	1.2	J	2.4	J	1.2	J	1.7	U	4.4	J	1.7	U
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	10	U	5	U	10	U	5	U	10	U
Iron	UG/L	20700	91.21%	300	44	83	91	80.5	J	6930		1120	J	69.1	J	68.9	J	317	
Lead	UG/L	18.8	13.19%	25	0	12	91	1.3	J	1	UJ	0.9	U	1	U	0.9	U	1	U
Magnesium	UG/L	72800	100.00%		0	91	91	22500		24400		29100	J	30300		43000		45700	
Manganese	UG/L	3280	98.90%	300	12	90	91	34.2		112		57.8	J	36.3		161		218	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	UG/L	38.8	52.75%	100	0	48	91	1.6	J	8.3	J	1.6	J	1.7	U	10.2	U	4.6	J
Potassium	UG/L	14200	100.00%		0	91	91	3460	J	3520	J	2130	J	1120	J	7260		5280	
Selenium	UG/L	6.5	21.98%	10	0	20	91	2	J	2.4	U	1.8	U	2.4	U	1.8	J	2.4	U
Silver	UG/L	5.2	38.46%	50	0	35	91	1.2	J	2.3	J	0.9	U	1.9	U	4.8	J	1.9	U
Sodium	UG/L	408000	100.00%	20000	24	91	91	20700		9020		6300	J	5750		18400		10900	
Thallium	UG/L	7	41.76%		0	38	91	5.7	J	2.7	U	1.9	U	2.7	U	4.8	J	2.7	U
Vanadium	UG/L	18.3	28.57%		0	26	91	1.6	U	12.6	J	1.6	U	1.5	U	3.8	U	1.5	U
Zinc	UG/L	2640	93.41%		0	85	91	5.3	J	17.6	J	4.6	J	3.2	J	8.9	J	9.9	J

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12
LOCATION ID								MW12-35		MW12-35		MW12-37		MW12-37		MW12-38		MW12-38
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER G
SAMPLE ID								122028		122241		122025		122257		122026		122253
DEPTH TO TOP OF SAMPLE								35		35		11		11		8.5		9
DEPTH TO BOTTOM OF SAMPLE								35		35		11		11		8.5		9
SAMPLE DATE								23-Apr-99		5-Dec-99		22-Apr-99		14-Dec-99		22-Apr-99		13-Dec-99
QC CODE								SA		SA		SA		SA		SA		SA
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE (Q)
VOLATILE ORGANICS																		
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5 U
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	0.5	U	83	U	120	U	1	U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5 U
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5 U
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5 U
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5 U
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5 U
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40			0.5	U							0.5 U
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	83	U			1	U	0.5 U
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5 U
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	0.5	U	83	U			1	U	0.5 U
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	0.5	U	83	U			1	U	0.5 U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	83	U			1	U	0.5 U
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5 U
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7							**30**	**J**			
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5 U
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5 U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	83	U			1	U	0.5 U
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5 U
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	83	U			1	U	0.5 U
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5 U
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5 U
2-Nitropropane	UG/L	0	0.00%	5	0	0	40			25	U							25 U
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	U	420	U	120	U	5	U	5 U
Acrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5 U
Allyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5 U
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5 U
Bromobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5 U
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	83	U			1	U	0.5 U
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5 U
Bromoform	UG/L	0	0.00%		0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5 U
Butyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5 U
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5 U
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5 U
Chloracetonitrile	UG/L	0	0.00%		0	0	40			25	U							25 U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

		FACILITY						SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
		LOCATION ID						MW12-35		MW12-35		MW12-37		MW12-37		MW12-38		MW12-38		
		MATRIX					G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
		SAMPLE ID						122028		122241		122025		122257		122026		122253		
		DEPTH TO TOP OF SAMPLE						35		35		11		11		8.5		9		
		DEPTH TO BOTTOM OF SAMPLE						35		35		11		11		8.5		9		
		SAMPLE DATE						23-Apr-99		5-Dec-99		22-Apr-99		14-Dec-99		22-Apr-99		13-Dec-99		
		QC CODE						SA		SA		SA		SA		SA		SA		
		STUDY ID						RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U	
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U	
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	UJ	
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U	
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	83	U			1	U	0.5	U	
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U	
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U	
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40			25	UJ							25	U	
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U	
Ethyl ether	UG/L	0	0.00%		0	0	40			0.5	U							0.5	U	
Ethyl methacrylate	UG/L	0	0.00%		0	0	40			0.5	U							0.5	U	
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40			0.5	U							0.5	U	
Hexachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U	
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U	
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U	
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U	
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40			0.5	U							0.5	U	
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40			0.5	U							0.5	U	
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U	
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	UJ	2.5	UJ	420	UJ	120	U	5	UJ	2.5	U	
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U	
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	UJ	420	U	120	U	5	U	5	U	
Methyl iodide	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U	
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	UJ	2.5	U	420	UJ	120	U	5	UJ	2.5	U	
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40			0.5	U							0.5	U	
Methylene bromide	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U	
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	0.5	U	170	U	120	U	2	U	0.5	U	
Naphthalene	UG/L	0	0.00%		0	0	40			0.5	U							0.5	U	
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40			25	UR							25	U	
Ortho Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U	
Pentachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	UJ							0.5	U	
Propionitrile	UG/L	0	0.00%		0	0	40			25	U							25	U	
Propylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U	
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U	
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U	
Tetrahydrofuran	UG/L	0	0.00%		0	0	40			2.5	U							2.5	U	
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-35		MW12-35		MW12-37		MW12-37		MW12-38		MW12-38	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122028		122241		122025		122257		122026		122253	
DEPTH TO TOP OF SAMPLE								35		35		11		11		8.5		9	
DEPTH TO BOTTOM OF SAMPLE								35		35		11		11		8.5		9	
SAMPLE DATE								23-Apr-99		5-Dec-99		22-Apr-99		14-Dec-99		22-Apr-99		13-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	83	U			1	U	0.5	U
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40			0.5	U							0.5	U
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	1	U	0.5	U	**1600**		**1600**		1	U	0.5	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	1	U	0.5	U	83	U	120	U	1	U	0.5	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U							0.5	U
SEMI-VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1.1	U	0.055	J	1.2	U	1	U	1.1	U	1.1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6												
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.7	U	2.5	U	3	U	2.6	U	2.8	U	2.8	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	UJ	1	U	1.1	UJ	1.1	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.7	U	2.5	UJ	3	UR	2.6	UR	2.8	UR	2.8	UJ
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1.2	U	1	UJ	1.1	U	1.1	U
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1.2	U	1	UJ	1.1	U	1.1	U
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
2-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.7	U	2.5	U	3	U	2.6	UJ	2.8	U	2.8	U
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1.1	UJ	1	UJ	1.2	U	1	U	1.1	U	1.1	UJ
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.7	U	2.5	U	3	U	2.6	UJ	2.8	U	2.8	U
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.7	U	2.5	UJ	3	UJ	2.6	UJ	2.8	UJ	2.8	UJ
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	UJ	1.1	U	1.1	U
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1.1	UJ	1	U	1.2	UJ	1	U	1.1	UJ	1.1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-35		MW12-35		MW12-37		MW12-37		MW12-38		MW12-38	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122028		122241		122025		122257		122026		122253	
DEPTH TO TOP OF SAMPLE								35		35		11		11		8.5		9	
DEPTH TO BOTTOM OF SAMPLE								35		35		11		11		8.5		9	
SAMPLE DATE								23-Apr-99		5-Dec-99		22-Apr-99		14-Dec-99		22-Apr-99		13-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
4-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.7	U	2.5	UJ	3	U	2.6	U	2.8	U	2.8	UJ
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.7	U	2.5	U	3	UJ	2.6	UJ	2.8	UJ	2.8	U
Acenaphthene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Acenaphthylene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1.1	U	1	U	4.2	U		U	1.1	U	1.1	U
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Carbazole	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Chrysene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1.1	U	1	U	1.2	U	1	U	0.074	J	1.1	U
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Dibenzofuran	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Fluoranthene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Fluorene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Isophorone	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Naphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Nitrobenzene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-35		MW12-35		MW12-37		MW12-37		MW12-38		MW12-38	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122028		122241		122025		122257		122026		122253	
DEPTH TO TOP OF SAMPLE								35		35		11		11		8.5		9	
DEPTH TO BOTTOM OF SAMPLE								35		35		11		11		8.5		9	
SAMPLE DATE								23-Apr-99		5-Dec-99		22-Apr-99		14-Dec-99		22-Apr-99		13-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.7	U	2.5	U	3	UJ	2.6	UJ	2.8	UJ	2.6	UJ
Phenanthrene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	1.2	U	1	U	1.1	U	1.1	U
Phenol	UG/L	0.43	5.62%	1	0	5	89	1.1	U	1	U	0.13	J	1	U	1.1	U	1.1	U
Pyrene	UG/L	0.08	2.25%		0	2	89	1.1	U	1	UJ	1.2	U	1	U	1.1	U	1.1	UJ
PESTICIDES/ PCBS																			
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U	0.011	U
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U	0.011	U
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U	0.011	U
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0051	U	0.0051	U	0.005	U	0.006	U	0.0052	U	0.0055	U
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0051	UJ	0.0051	U	0.005	UJ	0.006	U	0.0052	UJ	0.0055	U
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0051	U	0.0051	U	0.005	U	0.006	U	0.0052	U	0.0055	U
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U	0.11	U
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.2	U	0.2	U	0.2	U	0.24	U	0.21	U	0.22	U
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U	0.11	U
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U	0.11	U
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U	0.11	U
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U	0.11	U
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U	0.11	U
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0051	UJ	0.0051	U	0.005	UJ	0.006	U	0.0052	UJ	0.0055	U
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0051	U	0.0051	U	0.005	U	0.006	U	0.0052	U	0.0055	U
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U	0.011	U
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0051	U	0.0051	U	0.005	U	0.006	U	0.0052	U	0.0055	U
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U	0.011	U
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U	0.011	U
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U	0.011	U
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U	0.011	U
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U	0.011	U
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0051	U	0.0051	U	0.005	U	0.006	U	0.0052	U	0.0055	U
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0051	U	0.0051	U	0.005	U	0.006	U	0.0052	U	0.0055	U
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0051	U	0.0051	U	0.005	U	0.006	U	0.0052	U	0.0055	U
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0051	U	0.0051	U	0.005	U	0.006	U	0.0052	U	0.0055	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	U	0.01	U	0.01	U	0.012	U	0.01	U	0.011	U
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.051	U	0.051	U	0.05	U	0.06	U	0.052	U	0.055	U
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.51	U	0.51	U	0.5	U	0.6	U	0.52	U	0.55	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-35		MW12-35		MW12-37		MW12-37		MW12-38		MW12-38	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122028		122241		122025		122257		122026		122253	
DEPTH TO TOP OF SAMPLE								35		35		11		11		8.5		9	
DEPTH TO BOTTOM OF SAMPLE								35		35		11		11		8.5		9	
SAMPLE DATE								23-Apr-99		5-Dec-99		22-Apr-99		14-Dec-99		22-Apr-99		13-Dec-99	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS	
SAMPLE ROUND								1		2		1		2		1		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	174	J	48.6	J	482	J	78.9	J	29.2	J	259	
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.2	U	2.7	U	2.2	U	2.2	U	2.2	U	2.2	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	1.8	U	1.9	U	1.8	U	2.5	U	1.8	U	2.5	U
Barium	UG/L	189	100.00%	1000	0	91	91	84.6	J	77.1	J	95.4	J	90.7	J	108	J	128	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.1	U	0.2	U	0.1	U	0.17	J	0.1	U	0.1	U
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.3	U	0.3	U	0.3	U	0.2	U	0.3	U	0.2	U
Calcium	UG/L	260000	100.00%		0	91	91	71200	J	70000		120000	J	103000		171000	J	169000	
Chromium	UG/L	18.5	43.96%	50	0	40	91	1.5	J	0.9	U	1.5	J	1	U	1.2	U	1	U
Cobalt	UG/L	15.2	19.78%		0	18	91	1.5	U	2	U	1.5	U	1.3	U	1.5	U	1.3	U
Copper	UG/L	25.1	52.75%	200	0	48	91	1.7	J	1.7	U	1.8	J	1.9	U	1	U	1.9	U
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	10	U	5	U	10	U	5	U	10	U
Iron	UG/L	20700	91.21%	300	44	83	91	211	J	126		677	J	69.5	J	18.9	J	289	
Lead	UG/L	18.8	13.19%	25	0	12	91	0.9	U	1	U	0.9	U	1.3	UJ	0.9	U	1.3	UJ
Magnesium	UG/L	72800	100.00%		0	91	91	51200	J	49500		22600	J	17300		35100	J	33400	
Manganese	UG/L	3280	98.90%	300	12	90	91	22.1	J	24.2		131	J	53.9		306	J	246	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	UG/L	38.8	52.75%	100	0	48	91	1.4	U	1.7	U	8.6	J	1.7	U	9.9	J	8	J
Potassium	UG/L	14200	100.00%		0	91	91	4810	J	4280	J	4790	J	2620	J	6250	J	3420	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	1.8	U	2.4	U	1.8	U	2.2	U	1.8	U	2.2	U
Silver	UG/L	5.2	38.46%	50	0	35	91	0.9	U	1.9	J	1.5	J	2.4	J	0.9	U	1.3	UJ
Sodium	UG/L	408000	100.00%	20000	24	91	91	36400	J	39000		35600	J	48600		178000	J	234000	
Thallium	UG/L	7	41.76%		0	38	91	1.9	U	2.7	U	1.9	U	3.2	U	1.9	U	4.3	J
Vanadium	UG/L	18.3	28.57%		0	26	91	1.6	U	1.5	U	2.2	J	1.8	U	1.6	U	1.8	U
Zinc	UG/L	2640	93.41%		0	85	91	3.1	U	4.1	J	3.3	J	7.6	J	3.1	U	11.6	J

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-39		MW12-39		MW12-40		MW12-40		MW12-6		MW12A-1		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122027		122250		122024		122254		122042		MW12A-1		
DEPTH TO TOP OF SAMPLE								8.2		8.5		11.5		12.3		9.5		4		
DEPTH TO BOTTOM OF SAMPLE								8.2		8.5		11.5		12.3		9.5		13		
SAMPLE DATE								22-Apr-99		13-Dec-99		22-Apr-99		13-Dec-99		4-May-99		20-Jul-94		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		ESI		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		0		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
VOLATILE ORGANICS																				
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	0.5	U	1	U	1.7				10	U	
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40			0.5	U			0.5	U					
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U					
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	0.5	U	1	U	0.5	U					
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	0.5	U	1	U	0.5	U					
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U					
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7											10	U	
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U					
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U	1	U	0.5	U					
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
2-Nitropropane	UG/L	0	0.00%	5	0	0	40			25	U			25	U					
Acetone	UG/L	9	6.74%		0	6	89	6	U	5	U	5	U	5	U			10	U	
Acrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
Allyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
Bromobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U					
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
Bromoform	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
Butyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
Chloracetonitrile	UG/L	0	0.00%		0	0	40			25	U			25	U					

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-39		MW12-39		MW12-40		MW12-40		MW12-6		MW12A-1		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122027		122250		122024		122254		122042		MW12A-1		
DEPTH TO TOP OF SAMPLE								8.2		8.5		11.5		12.3		9.5		4		
DEPTH TO BOTTOM OF SAMPLE								8.2		8.5		11.5		12.3		9.5		13		
SAMPLE DATE								22-Apr-99		13-Dec-99		22-Apr-99		13-Dec-99		4-May-99		20-Jul-94		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		ESI		
SAMPLE ROUND								1		2		1		2		1		0		
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	1	U	0.5	U			10	U
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	UJ	1	U	0.5	UJ			10	U
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U				
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40			25	U			25	U				
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U
Ethyl ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U				
Ethyl methacrylate	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U				
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40			0.5	U			0.5	U				
Hexachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U				
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U				
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	UJ	2.5	U	5	UJ	2.5	U			10	U
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	5	U	5	U			10	U
Methyl iodide	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	UJ	2.5	U	5	UJ	2.5	U			10	U
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40			0.5	U			0.5	U				
Methylene bromide	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	0.5	U	2	U	0.5	U			10	U
Naphthalene	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U				
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40			25	U			25	U				
Ortho Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Pentachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Propionitrile	UG/L	0	0.00%		0	0	40			25	U			25	U				
Propylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U				
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U
Tetrahydrofuran	UG/L	0	0.00%		0	0	40			2.5	U			2.5	U				
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	0.5	U	1	U	0.5	U			10	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-39		MW12-39		MW12-40		MW12-40		MW12-6		MW12A-1		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122027		122250		122024		122254		122042		MW12A-1		
DEPTH TO TOP OF SAMPLE								8.2		8.5		11.5		12.3		9.5		4		
DEPTH TO BOTTOM OF SAMPLE								8.2		8.5		11.5		12.3		9.5		13		
SAMPLE DATE								22-Apr-99		13-Dec-99		22-Apr-99		13-Dec-99		4-May-99		20-Jul-94		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		ESI		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		0		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
Total Xylenes	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	1	U	0.5	U					
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U	1	U	0.5	U					
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40			0.5	U			0.5	U					
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	1	U	0.5	U	0.5	J	0.5	U			10	U	
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	1	U	0.5	U	1	U	0.5	U			10	U	
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U			0.5	U					
SEMI-VOLATILE ORGANICS																				
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6											10	U	
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.8	U	3	U	2.8	U	2.9	U			26	U	
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.8	U	3	UJ	2.8	UR	2.9	UR			26	U	
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1.2	U	1.1	U	1.1	UJ			10	U	
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1.2	U	1.1	U	1.1	UJ			10	U	
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
2-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.8	U	3	U	2.8	U	2.9	UJ			26	U	
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1.1	U	1.2	UJ	1.1	UJ	1.1	U			10	U	
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.8	U	3	U	2.8	UJ	2.9	UJ			26	U	
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.8	U	3	UJ	2.8	UJ	2.9	UJ			26	U	
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	UJ			10	U	
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1.1	U	1.2	U	1.1	UJ	1.1	U			10	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

		FACILITY						SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
		LOCATION ID						MW12-39		MW12-39		MW12-40		MW12-40		MW12-6		MW12A-1		
		MATRIX					G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
		SAMPLE ID						122027		122250		122024		122254		122042		MW12A-1		
		DEPTH TO TOP OF SAMPLE						8.2		8.5		11.5		12.3		9.5		4		
		DEPTH TO BOTTOM OF SAMPLE						8.2		8.5		11.5		12.3		9.5		13		
		SAMPLE DATE						22-Apr-99		13-Dec-99		22-Apr-99		13-Dec-99		4-May-99		20-Jul-94		
		QC CODE						SA		SA		SA		SA		SA		SA		
		STUDY ID						RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		ESI		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		0		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
4-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.8	U	3	UJ	2.8	UJ	2.9	U			26	U	
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.8	U	3	U	2.8	UJ	2.9	UJ			26	U	
Acenaphthene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Acenaphthylene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	0.058	J	1.2	U	0.097	J	1.1	U			10	U	
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1.1	U	1.2	U	0.076	J	1.1	U			10	U	
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	0.072	J	1.2	U	0.18	J	1.1	U			10	U	
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1.1	U	1.2	U	0.091	J	1.1	U			10	U	
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1.1	U	1.2	U	1.1	U	1.1	U					
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1.8	U	1.2	U	2.4	UJ	1.1	U			10	U	
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Carbazole	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Chrysene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1.1	U	0.21	J	1.1	U	1.1	U			10	U	
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1.1	U	0.41	J	1.1	UJ	1.1	U			10	U	
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Dibenzofuran	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Fluoranthene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Fluorene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1.1	U	1.2	U	0.1	J	1.1	U			10	U	
Isophorone	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Naphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Nitrobenzene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-39		MW12-39		MW12-40		MW12-40		MW12-6		MW12A-1		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122027		122250		122024		122254		122042		MW12A-1		
DEPTH TO TOP OF SAMPLE								8.2		8.5		11.5		12.3		9.5		4		
DEPTH TO BOTTOM OF SAMPLE								8.2		8.5		11.5		12.3		9.5		13		
SAMPLE DATE								22-Apr-99		13-Dec-99		22-Apr-99		13-Dec-99		4-May-99		20-Jul-94		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		ESI		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		1		2		1		0		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.8	U	3	UJ	2.8	UJ	2.7	UJ			26	U	
Phenanthrene	UG/L	0	0.00%		0	0	89	1.1	U	1.2	U	1.1	U	1.1	U			10	U	
Phenol	UG/L	0.43	5.62%	1	0	5	89	0.12	J	0.43	J	1.1	U	1.1	U			10	U	
Pyrene	UG/L	0.08	2.25%		0	2	89	1.1	U	1.2	UJ	1.1	U	1.1	U			10	U	
PESTICIDES/ PCBS																				
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U	0.012	U	0.01	U	0.011	U			0.1	U	
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U	0.012	U	0.01	U	0.011	U			0.1	U	
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.01	U	0.012	U	0.01	U	0.011	U			0.1	U	
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0051	U	0.0059	U	0.0052	U	0.0057	U			0.052	U	
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0051	UJ	0.0059	U	0.0052	UJ	0.0057	U			0.052	U	
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0051	U	0.0059	U	0.0052	U	0.0057	U			0.052	U	
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.12	U	0.1	U	0.11	U			1	U	
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.2	U	0.24	U	0.21	U	0.23	U			2.1	U	
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.12	U	0.1	U	0.11	U			1	U	
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.12	U	0.1	U	0.11	U			1	U	
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.12	U	0.1	U	0.11	U			1	U	
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.12	U	0.1	U	0.11	U			1	U	
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.12	U	0.1	U	0.11	U			1	U	
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0051	UJ	0.0059	U	0.0052	UJ	0.0057	U			0.052	U	
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0051	U	0.0059	U	0.0052	U	0.0057	U			0.052	U	
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U	0.012	U	0.01	U	0.011	U			0.1	U	
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0051	U	0.0059	U	0.0052	U	0.0057	U			0.052	U	
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U	0.012	U	0.01	U	0.011	U			0.1	U	
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U	0.012	U	0.01	U	0.011	U			0.1	U	
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U	0.012	U	0.01	U	0.011	U			0.1	U	
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U	0.012	U	0.01	U	0.011	U			0.1	U	
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U	0.012	U	0.01	U	0.011	U			0.1	U	
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0051	U	0.0059	U	0.0052	U	0.0057	U			0.052	U	
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0051	U	0.0059	U	0.0052	U	0.0057	U			0.052	U	
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0051	U	0.0059	U	0.0052	U	0.0057	U			0.052	U	
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0051	U	0.0059	U	0.0052	U	0.0057	U			0.052	U	
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	U	0.012	U	0.01	U	0.011	U					
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.051	U	0.059	U	0.052	U	0.057	U			0.52	U	
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.51	U	0.59	U	0.52	U	0.57	U			5.2	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-39		MW12-39		MW12-40		MW12-40		MW12-6		MW12A-1	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122027		122250		122024		122254		122042		MW12A-1	
DEPTH TO TOP OF SAMPLE								8.2		8.5		11.5		12.3		9.5		4	
DEPTH TO BOTTOM OF SAMPLE								8.2		8.5		11.5		12.3		9.5		13	
SAMPLE DATE								22-Apr-99		13-Dec-99		22-Apr-99		13-Dec-99		4-May-99		20-Jul-94	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		ESI	
SAMPLE ROUND								1		2		1		2		1		0	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	356	J	1550		309	J	359		340		5840	
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.2	U	43.2	J	2.2	U	2.2	U	5.2	U	1.3	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	1.8	U	2.5	U	1.8	U	2.5	U	4	J	2	U
Barium	UG/L	189	100.00%	1000	0	91	91	48.8	J	80.4	J	47.7	J	33	J	42.7	J	94.2	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.1	U	0.1	U	0.1	U	0.18	J	0.31	J	0.1	U
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.3	U	1.1	J	0.3	U	0.22	J	0.8	J	0.2	U
Calcium	UG/L	260000	100.00%		0	91	91	26000	J	34200		97600	J	55800		100000		123000	
Chromium	UG/L	18.5	43.96%	50	0	40	91	2.3	J	3.2	J	1.2	U	1.5	J	1.2	U	9.4	J
Cobalt	UG/L	15.2	19.78%		0	18	91	1.5	U	1.3	U	1.5	U	2.1	J	3.3	U	6.2	J
Copper	UG/L	25.1	52.75%	200	0	48	91	1.7	J	3.1	J	1	U	1.9	J	5.2	J	11.7	J
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	10	U	5	U	10	U	5	U	5	UJ
Iron	UG/L	20700	91.21%	300	44	83	91	182	J	2220		387	J	407	J	1060		9830	J
Lead	UG/L	18.8	13.19%	25	0	12	91	0.9	U	16.6	J	0.9	U	1.3	UJ	0.9	U	4.5	
Magnesium	UG/L	72800	100.00%		0	91	91	3900	J	6790		19600	J	6280		47800		32800	
Manganese	UG/L	3280	98.90%	300	12	90	91	0.4	U	164		23.9	J	8.8	J	41.2		223	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.08	J
Nickel	UG/L	38.8	52.75%	100	0	48	91	2	J	4.1	J	2.6	J	1.7	U	10.2	U	17.3	J
Potassium	UG/L	14200	100.00%		0	91	91	14200	J	4720	J	2260	J	3120	J	2540	J	4180	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	1.8	U	2.2	U	1.8	U	2.2	U	1.8	J	2.7	U
Silver	UG/L	5.2	38.46%	50	0	35	91	0.9	U	1.3	UJ	0.9	U	3.4	J	5.2	J	0.5	U
Sodium	UG/L	408000	100.00%	20000	24	91	91	310000	J	408000		2870	J	13200		8740		9020	
Thallium	UG/L	7	41.76%		0	38	91	1.9	U	5.3	J	1.9	U	3.2	U	2.6	U	1.9	U
Vanadium	UG/L	18.3	28.57%		0	26	91	5.3	J	2.4	J	1.6	U	2.6	J	3.8	U	10	J
Zinc	UG/L	2640	93.41%		0	85	91	8.4	J	2640		11	J	11.7	J	7.2	J	50.3	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12A-1		MW12A-1		MW12A-2		MW12A-2		MW12A-2		MW12A-3		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122009		122256		MW12A-2		122010		122268		MW12A-3		
DEPTH TO TOP OF SAMPLE								13		9		4.3		11		9		3.4		
DEPTH TO BOTTOM OF SAMPLE								13		9		11.1		11		9		14		
SAMPLE DATE								13-Apr-99		14-Dec-99		20-Jul-94		13-Apr-99		17-Dec-99		20-Jul-94		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		0		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
VOLATILE ORGANICS																				
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40			0.5	U					0.5	U			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7					10	U					10	U	
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U			1	U	0.5	U			
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
2-Nitropropane	UG/L	0	0.00%	5	0	0	40			25	U					25	U			
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	U	10	U	5	U	5	U	9	J	
Acrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Allyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
Bromobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U			1	U	0.5	U			
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
Bromoform	UG/L	0	0.00%		0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
Butyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
Chloracetonitrile	UG/L	0	0.00%		0	0	40			25	U					25	U			

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12			
LOCATION ID								MW12A-1		MW12A-1		MW12A-2		MW12A-2		MW12A-2		MW12A-3			
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G	
SAMPLE ID								122009		122256		MW12A-2		122010		122268		MW12A-3			
DEPTH TO TOP OF SAMPLE								13		9		4.3		11		9		3.4			
DEPTH TO BOTTOM OF SAMPLE								13		9		11.1		11		9		14			
SAMPLE DATE								13-Apr-99		14-Dec-99		20-Jul-94		13-Apr-99		17-Dec-99		20-Jul-94			
QC CODE								SA		SA		SA		SA		SA		SA			
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI			
SAMPLE ROUND								1		2		0		1		2		0			
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)		
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U		
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U		
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	UJ	10	U	1	U	0.5	U	10	U		
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U		
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U			1	U	0.5	U				
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U		
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U				
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40			25	U					25	U				
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U		
Ethyl ether	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U				
Ethyl methacrylate	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U				
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40			0.5	U					0.5	U				
Hexachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U				
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U				
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U				
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U				
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U				
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U				
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U		
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	U	10	U	5	U	2.5	U	10	U		
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U		
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	10	U	5	U	5	U	10	U		
Methyl iodide	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U				
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	U	10	U	5	U	2.5	U	10	U		
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40			0.5	U					0.5	U				
Methylene bromide	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U				
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	0.5	U	10	U	2	U	0.5	U	10	U		
Naphthalene	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U				
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40			25	U					25	U				
Ortho Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U				
Pentachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	UJ				
Propionitrile	UG/L	0	0.00%		0	0	40			25	U					25	U				
Propylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U				
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U		
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U		
Tetrahydrofuran	UG/L	0	0.00%		0	0	40			2.5	U					2.5	U				
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	0.26	J	10	U	1	U	0.5	U	10	U		

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12A-1		MW12A-1		MW12A-2		MW12A-2		MW12A-2		MW12A-3	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122009		122256		MW12A-2		122010		122268		MW12A-3	
DEPTH TO TOP OF SAMPLE								13		9		4.3		11		9		3.4	
DEPTH TO BOTTOM OF SAMPLE								13		9		11.1		11		9		14	
SAMPLE DATE								13-Apr-99		14-Dec-99		20-Jul-94		13-Apr-99		17-Dec-99		20-Jul-94	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		0	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U			1	U	0.5	U		
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U		
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
SEMI-VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1.1	U	0.093	J	10	U	1.1	U	0.068	J	11	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6					10	U					11	U
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.6	U	2.6	UJ	26	U	2.6	U	2.6	U	29	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	UJ	10	U	1.1	U	1	U	11	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1.1	U	1	UJ	10	U	1.1	U	1	U	11	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	UJ	10	U	1.1	U	1	U	11	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.6	UR	2.8	UR	26	U	2.6	UR	2.6	UR	29	U
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	UJ	10	U	1.1	U	1	UJ	11	U
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	UJ	10	U	1.1	U	1	UJ	11	U
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	UJ	10	U	1.1	U	1	U	11	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U
2-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	UJ	10	U	1.1	U	1	U	11	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.8	UJ	26	U	2.6	U	2.6	UJ	29	U
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	UJ	10	U	1.1	U	1	U	11	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.8	UJ	26	U	2.6	U	2.6	UJ	29	U
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.6	UJ	2.6	UJ	26	U	2.6	UJ	2.6	UJ	29	U
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	UJ	10	U	1.1	U	1	U	11	U
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12A-1		MW12A-1		MW12A-2		MW12A-2		MW12A-2		MW12A-3		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122009		122256		MW12A-2		122010		122268		MW12A-3		
DEPTH TO TOP OF SAMPLE								13		9		4.3		11		9		3.4		
DEPTH TO BOTTOM OF SAMPLE								13		9		11.1		11		9		14		
SAMPLE DATE								13-Apr-99		14-Dec-99		20-Jul-94		13-Apr-99		17-Dec-99		20-Jul-94		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		0		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
4-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	UJ	10	U	1.1	U	1	U	11	U	
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.8	U	26	U	2.6	U	2.6	U	29	U	
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.6	U	2.6	UJ	26	U	2.6	U	2.6	UR	29	U	
Acenaphthene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Acenaphthylene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	UJ	11	U	
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1.1	U	1.1	U			1.1	U	1	U			
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1	U	1.1	U	10	U	1	U	1	U	11	U	
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Carbazole	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	UJ	11	U	
Chrysene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Dibenzofuran	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Fluoranthene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	UJ	11	U	
Fluorene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Isophorone	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Naphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	
Nitrobenzene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12A-1		MW12A-1		MW12A-2		MW12A-2		MW12A-2		MW12A-3	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122009		122256		MW12A-2		122010		122268		MW12A-3	
DEPTH TO TOP OF SAMPLE								13		9		4.3		11		9		3.4	
DEPTH TO BOTTOM OF SAMPLE								13		9		11.1		11		9		14	
SAMPLE DATE								13-Apr-99		14-Dec-99		20-Jul-94		13-Apr-99		17-Dec-99		20-Jul-94	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		0	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.6	U	2.6	UJ	26	U	2.6	U	2.6	UJ	29	U
Phenanthrene	UG/L	0	0.00%		0	0	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U
Phenol	UG/L	0.43	5.62%	1	0	5	89	1.1	U	1	UJ	10	U	1.1	U	1	U	11	U
Pyrene	UG/L	0.08	2.25%		0	2	89	1.1	U	1.1	U	10	U	1.1	U	1	U	11	U
PESTICIDES/ PCBS																			
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U	0.011	U	0.11	U	0.011	U	0.011	U	0.11	U
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U	0.011	U	0.11	U	0.011	U	0.011	U	0.11	U
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.01	U	0.011	U	0.11	U	0.011	U	0.011	U	0.11	U
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0052	U	0.0056	U	0.054	U	0.0056	U	0.0053	U	0.054	U
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0052	U	0.0056	U	0.054	U	0.0056	U	0.0053	U	0.054	U
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0052	U	0.0056	U	0.054	U	0.0056	U	0.0053	U	0.054	U
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	1.1	U	0.11	U	0.11	U	1.1	U
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.21	U	0.22	U	2.1	U	0.22	U	0.21	U	2.2	U
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	1.1	U	0.11	U	0.11	U	1.1	U
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	1.1	U	0.11	U	0.11	U	1.1	U
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	1.1	U	0.11	U	0.11	U	1.1	U
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	1.1	U	0.11	U	0.11	U	1.1	U
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	1.1	U	0.11	U	0.11	U	1.1	U
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0052	U	0.0056	U	0.054	U	0.0056	U	0.0053	U	0.054	U
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0052	U	0.0056	U	0.054	U	0.0056	U	0.0053	U	0.054	U
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U	0.011	U	0.11	U	0.011	U	0.011	U	0.11	U
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0052	U	0.0056	U	0.054	U	0.0056	U	0.0053	U	0.054	U
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U	0.011	U	0.11	U	0.011	U	0.011	U	0.11	U
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U	0.011	U	0.11	U	0.011	U	0.011	U	0.11	U
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U	0.011	U	0.11	U	0.011	U	0.011	U	0.11	U
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U	0.011	U	0.11	U	0.011	U	0.011	U	0.11	U
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U	0.011	U	0.11	U	0.011	U	0.011	U	0.11	U
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0052	U	0.0056	U	0.054	U	0.0056	U	0.0053	U	0.054	U
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0052	U	0.0056	U	0.054	U	0.0056	U	0.0053	U	0.054	U
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0052	U	0.0056	U	0.054	U	0.0056	U	0.0053	U	0.054	U
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0052	U	0.0056	U	0.054	U	0.0056	U	0.0053	U	0.054	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	U	0.011	U			0.011	U	0.011	U		
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.052	U	0.056	U	0.54	U	0.056	U	0.053	U	0.54	U
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.52	U	0.56	U	5.4	U	0.56	U	0.53	U	5.4	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

		FACILITY						SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
		LOCATION ID						MW12A-1		MW12A-1		MW12A-2		MW12A-2		MW12A-2		MW12A-3	
		MATRIX					G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
		SAMPLE ID						122009		122256		MW12A-2		122010		122268		MW12A-3	
		DEPTH TO TOP OF SAMPLE						13		9		4.3		11		9		3.4	
		DEPTH TO BOTTOM OF SAMPLE						13		9		11.1		11		9		14	
		SAMPLE DATE						13-Apr-99		14-Dec-99		20-Jul-94		13-Apr-99		17-Dec-99		20-Jul-94	
		QC CODE						SA		SA		SA		SA		SA		SA	
		STUDY ID						RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		0	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	348		142	J	2910		1190		1180		1040	
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.2	U	2.2	U	1.3	U	2.2	U	2.2	U	1.3	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	1.8	U	2.5	U	2	U	1.8	U	2.5	U	2	U
Barium	UG/L	189	100.00%	1000	0	91	91	71.9	J	80.1	J	79.1	J	76.4	J	79.5	J	146	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.1	U	0.18	J	0.1	U	0.1	U	0.1	U	0.1	U
Cadmium	UG/L	3.3	28.57%	5	0	26	91	1.2	J	0.2	U	0.2	U	0.3	U	0.2	U	0.2	U
Calcium	UG/L	260000	100.00%		0	91	91	134000		126000		108000		108000		104000		109000	
Chromium	UG/L	18.5	43.96%	50	0	40	91	0.7	U	1	U	4.1	J	1.3	J	1	U	1.7	J
Cobalt	UG/L	15.2	19.78%		0	18	91	1.5	U	1.5	J	2.4	J	1.5	U	1.3	U	1.1	J
Copper	UG/L	25.1	52.75%	200	0	48	91	1.9	J	1.9	U	4.5	J	2.1	J	1.9	U	1.3	J
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	10	U	5	UJ	5	U	10	U	5	UJ
Iron	UG/L	20700	91.21%	300	44	83	91	356	J	68.3	J	4030	J	1110	J	740		2140	J
Lead	UG/L	18.8	13.19%	25	0	12	91	0.9	U	1.3	UJ	2	J	1	J	1.3	UJ	0.89	U
Magnesium	UG/L	72800	100.00%		0	91	91	35700		34300		17500		16600		15800		29900	
Manganese	UG/L	3280	98.90%	300	12	90	91	7.9	J	5.3	J	237		51.8		58.2		77	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	UJ	0.1	U	0.05	J	0.1	UJ	0.1	U	0.06	J
Nickel	UG/L	38.8	52.75%	100	0	48	91	2.2	J	1.7	U	6.9	J	4.5	J	3.7	J	2.6	J
Potassium	UG/L	14200	100.00%		0	91	91	1280	J	1380	J	2470	J	1440	J	1320	J	4730	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	3.2	J	2.2	U	2.7	U	1.8	U	2.2	U	2.7	U
Silver	UG/L	5.2	38.46%	50	0	35	91	1.3	J	2.2	J	0.7	J	0.9	U	1.3	UJ	0.5	U
Sodium	UG/L	408000	100.00%	20000	24	91	91	12800		19000		5120		5780		8930		8770	
Thallium	UG/L	7	41.76%		0	38	91	5.2	J	3.2	U	1.9	U	4.5	J	3.2	U	1.9	U
Vanadium	UG/L	18.3	28.57%		0	26	91	1.6	U	2	J	4.9	J	1.6	U	1.8	U	2.2	J
Zinc	UG/L	2640	93.41%		0	85	91	4	J	4.4	J	18.7	J	9.2	J	13.4	J	18.6	J

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12A-3		MW12A-3		MW12B-1		MW12B-1		MW12B-1		MW12B-2		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122011		122249		MW12B-1		122021		122240		MW12B-2		
DEPTH TO TOP OF SAMPLE								13		12		5.3		17		17		3.9		
DEPTH TO BOTTOM OF SAMPLE								13		12		17		17		17		12.9		
SAMPLE DATE								13-Apr-99		8-Dec-99		19-Jul-94		21-Apr-99		6-Dec-99		19-Jul-94		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		
SAMPLE ROUND								1		2		0		1		2		0		
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
VOLATILE ORGANICS																				
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40			0.5	U					0.5	U			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7					10	U					10	U	
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U			1	U	0.5	U			
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
2-Nitropropane	UG/L	0	0.00%	5	0	0	40			25	U					25	U			
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	UJ	10	U	5	U	5	U	10	U	
Acrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Allyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
Bromobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U			1	U	0.5	U			
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
Bromoform	UG/L	0	0.00%		0	0	89	1	U	0.5	UJ	10	U	1	U	0.5	U	10	U	
Butyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U	
Chloracetonitrile	UG/L	0	0.00%		0	0	40			25	U					25	U			

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12A-3		MW12A-3		MW12B-1		MW12B-1		MW12B-1		MW12B-2		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122011		122249		MW12B-1		122021		122240		MW12B-2		
DEPTH TO TOP OF SAMPLE								13		12		5.3		17		17		3.9		
DEPTH TO BOTTOM OF SAMPLE								13		12		17		17		17		12.9		
SAMPLE DATE								13-Apr-99		8-Dec-99		19-Jul-94		21-Apr-99		6-Dec-99		19-Jul-94		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		
SAMPLE ROUND								1		2		0		1		2		0		
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U			1	U	0.5	U		
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40			25	UJ					25	UJ		
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Ethyl ether	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U		
Ethyl methacrylate	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U		
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40			0.5	U					0.5	U		
Hexachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U		
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U		
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	UJ	10	U	5	U	2.5	UJ	10	U
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	UJ	10	U	5	U	5	UJ	10	U
Methyl iodide	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	U	2.5	U	10	U	5	U	2.5	U	10	U
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40			0.5	U					0.5	U		
Methylene bromide	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	0.5	U	10	U	2	U	0.5	U	10	U
Naphthalene	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U		
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40			25	UR					25	UR		
Ortho Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Pentachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	UJ					0.5	UJ		
Propionitrile	UG/L	0	0.00%		0	0	40			25	U					25	U		
Propylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Tetrahydrofuran	UG/L	0	0.00%		0	0	40			2.5	U					2.5	U		
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12A-3		MW12A-3		MW12B-1		MW12B-1		MW12B-1		MW12B-2	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122011		122249		MW12B-1		122021		122240		MW12B-2	
DEPTH TO TOP OF SAMPLE								13		12		5.3		17		17		3.9	
DEPTH TO BOTTOM OF SAMPLE								13		12		17		17		17		12.9	
SAMPLE DATE								13-Apr-99		8-Dec-99		19-Jul-94		21-Apr-99		6-Dec-99		19-Jul-94	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		0	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U			1	U	0.5	U		
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U		
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U	10	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
SEMI-VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1.1	U	1	U	11	U	1	U	1	U	11	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6					11	U					11	U
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.6	U	2.6	U	28	U	2.6	U	2.6	U	27	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.6	UR	2.6	U	28	U	2.6	U	2.6	UJ	27	U
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
2-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.6	U	28	U	2.6	U	2.6	U	27	U
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	11	U	1	U	1	UJ	11	U
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.6	U	28	U	2.6	U	2.6	U	27	U
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.6	UJ	2.6	U	28	U	2.6	U	2.6	UJ	27	U
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12A-3		MW12A-3		MW12B-1		MW12B-1		MW12B-1		MW12B-2		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122011		122249		MW12B-1		122021		122240		MW12B-2		
DEPTH TO TOP OF SAMPLE								13		12		5.3		17		17		3.9		
DEPTH TO BOTTOM OF SAMPLE								13		12		17		17		17		12.9		
SAMPLE DATE								13-Apr-99		8-Dec-99		19-Jul-94		21-Apr-99		6-Dec-99		19-Jul-94		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		0		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
4-Methylphenol	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.6	U	28	U	2.6	U	2.6	UJ	27	U	
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.6	U	2.6	U	28	U	2.6	U	2.6	U	27	U	
Acenaphthene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Acenaphthylene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1.1	U	1	U			1	U	1	U			
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1	U	1	U	11	U	1.3	U	1	U	11	U	
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Carbazole	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Chrysene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Dibenzofuran	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1.1	U	0.08	J	11	U	1	U	1	U	11	U	
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Fluoranthene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Fluorene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Isophorone	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Naphthalene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Nitrobenzene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12A-3		MW12A-3		MW12B-1		MW12B-1		MW12B-1		MW12B-2		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122011		122249		MW12B-1		122021		122240		MW12B-2		
DEPTH TO TOP OF SAMPLE								13		12		5.3		17		17		3.9		
DEPTH TO BOTTOM OF SAMPLE								13		12		17		17		17		12.9		
SAMPLE DATE								13-Apr-99		8-Dec-99		19-Jul-94		21-Apr-99		6-Dec-99		19-Jul-94		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		0		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.6	U	2.6	U	28	U	2.6	U	2.6	U	27	U	
Phenanthrene	UG/L	0	0.00%		0	0	89	1.1	U	1	U	11	U	1	U	1	U	11	U	
Phenol	UG/L	0.43	5.62%	1	0	5	89	0.12	J	1	U	11	U	1	U	1	U	11	U	
Pyrene	UG/L	0.08	2.25%		0	2	89	0.057	J	1	U	11	U	1	U	1	UJ	11	U	
PESTICIDES/ PCBS																				
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U	0.01	U	0.12	U	0.01	U	0.011	U	0.12	U	
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U	0.01	U	0.12	U	0.01	U	0.011	U	0.12	U	
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.01	U	0.01	U	0.12	U	0.01	U	0.011	U	0.12	U	
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0052	U	0.005	U	0.058	U	0.005	U	0.0054	U	0.058	U	
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0052	U	0.005	U	0.058	U	0.005	UJ	0.0054	U	0.058	U	
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0052	U	0.005	U	0.058	U	0.005	U	0.0054	U	0.058	U	
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	1.2	U	0.1	U	0.11	U	1.2	U	
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.21	U	0.2	U	2.3	U	0.2	U	0.22	U	2.3	U	
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	1.2	U	0.1	U	0.11	U	1.2	U	
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	1.2	U	0.1	U	0.11	U	1.2	U	
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	1.2	U	0.1	U	0.11	U	1.2	U	
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	1.2	U	0.1	U	0.11	U	1.2	U	
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	1.2	U	0.1	U	0.11	U	1.2	U	
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0052	U	0.005	U	0.058	U	0.005	UJ	0.0054	U	0.058	U	
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0052	U	0.005	U	0.058	U	0.005	U	0.0054	U	0.058	U	
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U	0.01	U	0.12	U	0.01	U	0.011	U	0.12	U	
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0052	U	0.005	U	0.058	U	0.005	U	0.0054	U	0.058	U	
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U	0.01	U	0.12	U	0.01	U	0.011	U	0.12	U	
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U	0.01	U	0.12	U	0.01	U	0.011	U	0.12	U	
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U	0.01	U	0.12	U	0.01	U	0.011	U	0.12	U	
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U	0.01	U	0.12	U	0.01	U	0.011	U	0.12	U	
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U	0.01	U	0.12	U	0.01	U	0.011	U	0.12	U	
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0052	U	0.005	U	0.058	U	0.005	U	0.0054	U	0.058	U	
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0052	U	0.005	U	0.058	U	0.005	U	0.0054	U	0.058	U	
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0052	U	0.005	U	0.058	U	0.005	U	0.0054	U	0.058	U	
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0052	U	0.005	U	0.058	U	0.005	U	0.0054	U	0.058	U	
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	U	0.01	U			0.01	U	0.011	U			
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.052	U	0.05	U	0.58	U	0.05	U	0.054	U	0.58	U	
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.52	U	0.5	U	5.8	U	0.5	U	0.54	U	5.8	U	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

		FACILITY						SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
		LOCATION ID						MW12A-3		MW12A-3		MW12B-1		MW12B-1		MW12B-1		MW12B-2	
		MATRIX					G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
		SAMPLE ID						122011		122249		MW12B-1		122021		122240		MW12B-2	
		DEPTH TO TOP OF SAMPLE						13		12		5.3		17		17		3.9	
		DEPTH TO BOTTOM OF SAMPLE						13		12		17		17		17		12.9	
		SAMPLE DATE						13-Apr-99		8-Dec-99		19-Jul-94		21-Apr-99		6-Dec-99		19-Jul-94	
		QC CODE						SA		SA		SA		SA		SA		SA	
		STUDY ID						RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		0	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	230		174	J	4860	J	103	J	136	J	9880	J
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.2	U	2.7	U	1.4	J	2.2	U	2.7	U	1.3	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	1.8	U	1.9	U	3.2	J	1.8	U	1.9	U	3	J
Barium	UG/L	189	100.00%	1000	0	91	91	151	J	151	J	102	J	64.4	J	89.3	J	171	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.1	U	0.2	U	0.21	J	0.1	U	0.2	U	0.71	J
Cadmium	UG/L	3.3	28.57%	5	0	26	91	1.1	J	0.3	U	0.2	U	0.3	U	0.3	U	0.26	J
Calcium	UG/L	260000	100.00%		0	91	91	114000		115000		183000		142000	J	159000		260000	
Chromium	UG/L	18.5	43.96%	50	0	40	91	0.7	U	0.9	U	9.8	J	1.2	U	0.9	U	18.5	
Cobalt	UG/L	15.2	19.78%		0	18	91	1.5	U	2	U	8	J	1.5	U	2	U	15.2	J
Copper	UG/L	25.1	52.75%	200	0	48	91	1.1	J	1.7	U	16.8	J	1	U	1.7	U	25.1	
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	10	U	5	U	5	U	10	U	5	U
Iron	UG/L	20700	91.21%	300	44	83	91	292	J	246		10500		161	J	90	J	20700	
Lead	UG/L	18.8	13.19%	25	0	12	91	0.9	U	1	U	11		0.9	U	1	U	18.6	
Magnesium	UG/L	72800	100.00%		0	91	91	29500		29500		46800		45900	J	46400		71100	
Manganese	UG/L	3280	98.90%	300	12	90	91	38.1		37.2		536		22.4	J	24.8		800	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	UJ	0.1	U	0.08	J	0.1	U	0.1	U	0.05	J
Nickel	UG/L	38.8	52.75%	100	0	48	91	1.4	U	1.7	U	24.4	J	4.2	J	4.3	J	38.8	J
Potassium	UG/L	14200	100.00%		0	91	91	1770	J	1630	J	13000	J	1890	J	1970	J	5510	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	2	J	2.4	U	2.7	U	1.8	U	2.4	U	2.7	U
Silver	UG/L	5.2	38.46%	50	0	35	91	0.9	U	1.9	U	2.7	J	0.9	U	1.9	U	0.59	J
Sodium	UG/L	408000	100.00%	20000	24	91	91	6590		7020		18500		31400	J	43500		16400	
Thallium	UG/L	7	41.76%		0	38	91	4	J	2.7	U	2.8	J	1.9	U	2.7	U	1.9	U
Vanadium	UG/L	18.3	28.57%		0	26	91	1.6	U	1.5	U	9.5	J	1.6	U	1.5	U	18.3	J
Zinc	UG/L	2640	93.41%		0	85	91	3.9	J	3.1	J	32.8		3.1	U	5.2	J	55.7	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12B-2		MW12B-2		MW12B-3		MW12B-3		MW12B-3		MW12-6		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122031		122239		MW12B-3		122030		122238		122220		
DEPTH TO TOP OF SAMPLE								14		14		4.6		14		10		9.5		
DEPTH TO BOTTOM OF SAMPLE								14		14		13.5		14		10		9.5		
SAMPLE DATE								23-Apr-99		6-Dec-99		19-Jul-94		23-Apr-99		6-Dec-99		12/7/1999		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI P1S1 - Pu RS		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		2		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
VOLATILE ORGANICS																				
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	0.5	U	10	U	1	U	0.5	U			
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40			0.5	U					0.5	U			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7					10	U							
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U			1	U	0.5	U			
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	0.5	U			1	U	0.5	U			
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
2-Nitropropane	UG/L	0	0.00%	5	0	0	40			25	U					25	U			
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	U	10	U	5	U	5	U			
Acrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Allyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
Bromobenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U			1	U	0.5	U			
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
Bromoform	UG/L	0	0.00%		0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
Butyl chloride	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
Chloracetonitrile	UG/L	0	0.00%		0	0	40			25	U					25	U			

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12B-2		MW12B-2		MW12B-3		MW12B-3		MW12B-3		MW12-6	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122031		122239		MW12B-3		122030		122238		122220	
DEPTH TO TOP OF SAMPLE								14		14		4.6		14		10		9.5	
DEPTH TO BOTTOM OF SAMPLE								14		14		13.5		14		10		9.5	
SAMPLE DATE								23-Apr-99		6-Dec-99		19-Jul-94		23-Apr-99		6-Dec-99		12/7/1999	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI P1S1 - Pu RS	
SAMPLE ROUND								1		2		0		1		2		2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U		
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	0.5	U	10	U	1	U	0.5	U		
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U		
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U		
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U			1	U	0.5	U		
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U		
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40			25	UJ					25	UJ		
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U		
Ethyl ether	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U		
Ethyl methacrylate	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U		
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40			0.5	U					0.5	U		
Hexachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U		
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U		
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U		
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	UJ	2.5	UJ	10	U	5	UJ	2.5	UJ		
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U		
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	UJ	10	U	5	U	5	UJ		
Methyl iodide	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	UJ	2.5	U	10	U	5	UJ	2.5	U		
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40			0.5	U					0.5	U		
Methylene bromide	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	0.5	U	10	U	2	U	0.5	U		
Naphthalene	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U		
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40			25	UR					25	UR		
Ortho Xylene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Pentachloroethane	UG/L	0	0.00%	5	0	0	40			0.5	UJ					0.5	UJ		
Propionitrile	UG/L	0	0.00%		0	0	40			25	U					25	U		
Propylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U		
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U		
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U		
Tetrahydrofuran	UG/L	0	0.00%		0	0	40			2.5	U					2.5	U		
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	0.5	U	10	U	1	U	0.5	U		

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12B-2		MW12B-2		MW12B-3		MW12B-3		MW12B-3		MW12-6		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122031		122239		MW12B-3		122030		122238		122220		
DEPTH TO TOP OF SAMPLE								14		14		4.6		14		10		9.5		
DEPTH TO BOTTOM OF SAMPLE								14		14		13.5		14		10		9.5		
SAMPLE DATE								23-Apr-99		6-Dec-99		19-Jul-94		23-Apr-99		6-Dec-99		12/7/1999		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI P1S1 - Pu RS		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		2		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
Total Xylenes	UG/L	0	0.00%	5	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	0.5	U			1	U	0.5	U			
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40			0.5	U					0.5	U			
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	1	U	0.5	U	10	U	1	U	0.5	U			
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	1	U	0.5	U	10	U	1	U	0.5	U			
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40			0.5	U					0.5	U			
SEMI-VOLATILE ORGANICS																				
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	10	U	1	U	1	U			
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1	U	1	U	10	U	1	U	1	U			
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1	U	1	U	10	U	1	U	1	U			
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1	U	1	U	10	U	1	U	1	U			
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6					10	U							
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.6	U	2.6	U	26	U	2.5	U	2.5	U			
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U			
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1	U	1	U	10	U	1	U	1	U			
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U			
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.6	U	2.6	UJ	26	U	2.5	U	2.5	UJ			
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	10	U	1	U	1	U			
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	10	U	1	U	1	U			
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U			
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U			
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U			
2-Methylphenol	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U			
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.6	U	26	U	2.5	U	2.5	U			
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U			
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1	UJ	1	UJ	10	U	1	UJ	1	U			
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.6	U	26	U	2.5	U	2.5	U			
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.6	U	2.6	UJ	26	U	2.5	U	2.5	U			
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U			
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U			
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1	UJ	1	U	10	U	1	UJ	1	U			

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12B-2		MW12B-2		MW12B-3		MW12B-3		MW12B-3		MW12-6	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122031		122239		MW12B-3		122030		122238		122220	
DEPTH TO TOP OF SAMPLE								14		14		4.6		14		10		9.5	
DEPTH TO BOTTOM OF SAMPLE								14		14		13.5		14		10		9.5	
SAMPLE DATE								23-Apr-99		6-Dec-99		19-Jul-94		23-Apr-99		6-Dec-99		12/7/1999	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
4-Methylphenol	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.6	U	2.6	UJ	26	U	2.5	U	2.5	UJ		
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.6	U	2.6	U	26	U	2.5	U	2.5	U		
Acenaphthene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Acenaphthylene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Anthracene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1	U	1	U	10	U	1	U	1	U		
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1	U	1	U	10	U	1	U	1	U		
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1	U	1	U	10	U	0.075	J	1	U		
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1	U	1	U	10	U	1	U	1	U		
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1	U	1	U	10	U	1	U	1	U		
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1	U	1	U	10	U	1	U	1	U		
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1	U	1	U			1	U	1	U		
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1.6	U	1	U	10	U	1	U	1	U		
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1	U	1	U	10	U	1	U	1	U		
Carbazole	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Chrysene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1	U	1	U	10	U	1	U	1	U		
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1	U	1	U	10	U	1	U	1	U		
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Dibenzofuran	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1	U	1	U	10	U	1	U	0.074	J		
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Fluoranthene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Fluorene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1	U	1	U	10	U	1	U	1	U		
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1	U	1	U	10	U	1	U	1	U		
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	10	U	1	U	1	U		
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	1	U	10	U	1	U	1	U		
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1	U	1	U	10	U	1	U	1	U		
Isophorone	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Naphthalene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		
Nitrobenzene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U		

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12B-2		MW12B-2		MW12B-3		MW12B-3		MW12B-3		MW12-6		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122031		122239		MW12B-3		122030		122238		122220		
DEPTH TO TOP OF SAMPLE								14		14		4.6		14		10		9.5		
DEPTH TO BOTTOM OF SAMPLE								14		14		13.5		14		10		9.5		
SAMPLE DATE								23-Apr-99		6-Dec-99		19-Jul-94		23-Apr-99		6-Dec-99		12/7/1999		
QC CODE								SA		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI P1S1 - Pu RS		
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		2		
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.6	U	2.6	U	26	U	2.5	U	2.5	U			
Phenanthrene	UG/L	0	0.00%		0	0	89	1	U	1	U	10	U	1	U	1	U			
Phenol	UG/L	0.43	5.62%	1	0	5	89	1	U	1	U	10	U	1	U	1	U			
Pyrene	UG/L	0.08	2.25%		0	2	89	1	U	1	UJ	10	U	1	U	1	U			
PESTICIDES/ PCBS																				
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U	0.011	U	0.11	U	0.01	U	0.01	U			
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U	0.011	U	0.11	U	0.01	U	0.01	U			
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.01	U	0.011	U	0.11	U	0.01	U	0.01	U			
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0051	U	0.0053	U	0.056	U	0.005	U	0.0051	U			
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0051	UJ	0.0053	U	0.056	U	0.005	UJ	0.0051	U			
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0051	U	0.0053	U	0.056	U	0.005	U	0.0051	U			
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	1.1	U	0.1	U	0.1	U			
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.2	U	0.21	U	2.2	U	0.2	U	0.2	U			
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	1.1	U	0.1	U	0.1	U			
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	1.1	U	0.1	U	0.1	U			
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	1.1	U	0.1	U	0.1	U			
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	1.1	U	0.1	U	0.1	U			
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.11	U	1.1	U	0.1	U	0.1	U			
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0051	UJ	0.0053	U	0.056	U	0.005	UJ	0.0051	U			
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0051	U	0.0053	U	0.056	U	0.005	U	0.0051	U			
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U	0.011	U	0.11	U	0.01	U	0.01	U			
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0051	U	0.0053	U	0.056	U	0.005	U	0.0051	U			
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U	0.011	U	0.11	U	0.01	U	0.01	U			
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U	0.011	U	0.11	U	0.01	U	0.01	U			
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U	0.011	U	0.11	U	0.01	U	0.01	U			
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U	0.011	U	0.11	U	0.01	U	0.01	U			
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U	0.011	U	0.11	U	0.01	U	0.01	U			
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0051	U	0.0053	U	0.056	U	0.005	U	0.0051	U			
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0051	U	0.0053	U	0.056	U	0.005	U	0.0051	U			
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0051	U	0.0053	U	0.056	U	0.005	U	0.0051	U			
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0051	U	0.0053	U	0.056	U	0.005	U	0.0051	U			
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	U	0.011	U			0.01	U	0.01	U			
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.051	U	0.053	U	0.56	U	0.05	U	0.051	U			
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.51	U	0.53	U	5.6	U	0.5	U	0.51	U			

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12B-2		MW12B-2		MW12B-3		MW12B-3		MW12B-3		MW12-6	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122031		122239		MW12B-3		122030		122238		122220	
DEPTH TO TOP OF SAMPLE								14		14		4.6		14		10		9.5	
DEPTH TO BOTTOM OF SAMPLE								14		14		13.5		14		10		9.5	
SAMPLE DATE								23-Apr-99		6-Dec-99		19-Jul-94		23-Apr-99		6-Dec-99		12/7/1999	
QC CODE								SA		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI P1S1 - Pu RS		ESI		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		2		0		1		2		2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
METALS																			
Aluminum	UG/L	9880	97.80%		0	89	91	23.9	J	28.3	J	6940	J	201	J	168	J	260	
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.2	U	2.7	U	1.3	U	2.2	U	2.7	U	2.7	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	1.8	U	1.9	U	2	U	1.8	U	1.9	U	3.6	J
Barium	UG/L	189	100.00%	1000	0	91	91	68.3	J	70.7	J	189	J	134	J	133	J	46.2	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.1	U	0.2	U	0.41	J	0.1	U	0.2	U	0.2	U
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.3	U	0.3	U	0.27	J	0.3	U	0.3	U	0.3	U
Calcium	UG/L	260000	100.00%		0	91	91	164000	J	168000		169000		130000	J	117000		108000	
Chromium	UG/L	18.5	43.96%	50	0	40	91	1.4	J	0.9	U	13.5		1.3	J	0.9	U	0.9	U
Cobalt	UG/L	15.2	19.78%		0	18	91	1.5	U	2	U	12	J	1.5	U	2	U	2	U
Copper	UG/L	25.1	52.75%	200	0	48	91	1	U	1.7	U	19	J	1	U	2.1	J	1.7	U
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	10	U	5	U	5	U	10	U	10	UJ
Iron	UG/L	20700	91.21%	300	44	83	91	14.9	U	25.4	U	**14700**		207	J	118		**985**	J
Lead	UG/L	18.8	13.19%	25	0	12	91	0.9	U	1	UJ	18.8		0.9	U	1	U	1	U
Magnesium	UG/L	72800	100.00%		0	91	91	62400	J	57500		37900		39900	J	31700		49200	
Manganese	UG/L	3280	98.90%	300	12	90	91	52.6	J	40.8		**522**		6.3	J	5.1	J	38.6	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	U	0.1	U	0.05	J	0.1	U	0.1	U	0.1	UJ
Nickel	UG/L	38.8	52.75%	100	0	48	91	2.4	J	2.1	J	32.5	J	1.4	U	1.7	U	1.7	U
Potassium	UG/L	14200	100.00%		0	91	91	2220	J	2060	J	2900	J	1290	J	909	J	2800	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	1.8	U	2.4	U	2.7	U	1.8	U	3	J	2.4	UJ
Silver	UG/L	5.2	38.46%	50	0	35	91	0.9	U	1.9	U	0.62	J	0.9	U	1.9	U	1.9	UJ
Sodium	UG/L	408000	100.00%	20000	24	91	91	19200	J	**21500**		4510	J	9120	J	5850		9100	
Thallium	UG/L	7	41.76%		0	38	91	1.9	U	3.5	J	5	J	1.9	U	2.7	U	2.7	U
Vanadium	UG/L	18.3	28.57%		0	26	91	1.6	U	1.5	U	12.7	J	1.6	U	1.5	U	1.5	U
Zinc	UG/L	2640	93.41%		0	85	91	7.8	J	2.6	J	41.1		3.1	U	3.9	J	4.4	J

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-7		MW12-7		MW12-7		MW12-8		MW12-8		MW12-9	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122048		122044		122272		122046		122258		122050	
DEPTH TO TOP OF SAMPLE								14		14		13		13		13.86		15	
DEPTH TO BOTTOM OF SAMPLE								14		14		13		13		13.86		15	
SAMPLE DATE								5/5/1999		5/5/1999		12/18/1999		5/6/1999		12/14/1999		5/6/1999	
QC CODE								DU		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		1		2		1		2		1	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
VOLATILE ORGANICS																			
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40					0.5	U			0.5	U		
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7												
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	1	UJ	1	UJ	0.5	U	1	UJ	0.5	U	1	UJ
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
2-Nitropropane	UG/L	0	0.00%	5	0	0	40					25	U			25	U		
Acetone	UG/L	9	6.74%		0	6	89	5	U	5	U	5	U	5	U	5	U	5	U
Acrylonitrile	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Allyl chloride	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Benzene	UG/L	0	0.00%	1	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Bromobenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Bromodichloromethane	UG/L	0	0.00%		0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Bromoform	UG/L	0	0.00%		0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Butyl chloride	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Carbon disulfide	UG/L	0	0.00%		0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Chloracetonitrile	UG/L	0	0.00%		0	0	40					25	U			25	U		

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-7		MW12-7		MW12-7		MW12-8		MW12-8		MW12-9	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122048		122044		122272		122046		122258		122050	
DEPTH TO TOP OF SAMPLE								14		14		13		13		13.86		15	
DEPTH TO BOTTOM OF SAMPLE								14		14		13		13		13.86		15	
SAMPLE DATE								5/5/1999		5/5/1999		12/18/1999		5/6/1999		12/14/1999		5/6/1999	
QC CODE								DU		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1	
SAMPLE ROUND			FREQUENCY	NYSDEC	NUMBER	NUMBER	NUMBER	1		1		2		1		2		1	
PARAMETER	UNIT	MAXIMUM	OF DETECTION	CLASS GA STD.	ABOVE STD.	OF DETECTS	OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Chloroethane	UG/L	0	0.00%	5	0	0	89	1	UJ	1	UJ	0.5	U	1	UJ	0.5	UJ	1	UJ
Chloroform	UG/L	0	0.00%	7	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40					25	U			25	U		
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Ethyl ether	UG/L	0	0.00%		0	0	40					0.5	U			0.5	U		
Ethyl methacrylate	UG/L	0	0.00%		0	0	40					0.5	U			0.5	U		
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40					0.5	U			0.5	U		
Hexachloroethane	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40					0.5	U			0.5	U		
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40					0.5	U			0.5	U		
Methyl bromide	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	2.5	U	5	U	2.5	U	5	U
Methyl chloride	UG/L	0	0.00%	5	0	0	89	1	UJ	1	UJ	0.5	U	1	UJ	0.5	U	1	UJ
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	U	5	U	5	U	5	U	5	U	5	U
Methyl iodide	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	5	UJ	5	UJ	2.5	U	5	UJ	2.5	U	5	UJ
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40					0.5	U			0.5	U		
Methylene bromide	UG/L	0	0.00%	5	0	0	40					0.3	U			0.5	U		
Methylene chloride	UG/L	0	0.00%	5	0	0	89	2	U	2	U	0.5	U	2	U	0.5	U	2	U
Naphthalene	UG/L	0	0.00%		0	0	40					0.5	U			0.5	U		
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40					25	U			25	U		
Ortho Xylene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Pentachloroethane	UG/L	0	0.00%	5	0	0	40					0.5	UJ			0.5	U		
Propionitrile	UG/L	0	0.00%		0	0	40					25	U			25	U		
Propylbenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Styrene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Tetrahydrofuran	UG/L	0	0.00%		0	0	40					2.5	U			2.5	U		
Toluene	UG/L	3.1	5.62%	5	0	5	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-7		MW12-7		MW12-7		MW12-8		MW12-8		MW12-9	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122048		122044		122272		122046		122258		122050	
DEPTH TO TOP OF SAMPLE								14		14		13		13		13.86		15	
DEPTH TO BOTTOM OF SAMPLE								14		14		13		13		13.86		15	
SAMPLE DATE								5/5/1999		5/5/1999		12/18/1999		5/6/1999		12/14/1999		5/6/1999	
QC CODE								DU		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		1		2		1		2		1	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40					0.5	U			0.5	U		
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	1	U	1	U	0.5	U	1	U	0.5	U	1	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40					0.5	U			0.5	U		
SEMI-VOLATILE ORGANICS																			
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6												
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.5	U	2.5	U	2.9	U	2.5	U	2.9	U	2.5	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	UJ	1	U	1.2	U	1	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1	U	1	U	1.2	UJ	1	U	1.2	U	1	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.5	U	2.5	U	2.9	UR	2.5	U	2.9	UR	2.5	U
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	1.2	UJ	1	U	1.2	UJ	1	U
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1	U	1	U	1.2	UJ	1	U	1.2	UJ	1	U
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
2-Methylphenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.5	U	2.5	U	2.9	UJ	2.5	UJ	2.9	UJ	2.5	UJ
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1	UJ	1	UJ	1.2	U	1	U	1.2	U	1	U
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.5	U	2.5	U	2.9	UJ	2.5	U	2.9	UJ	2.5	U
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.5	U	2.5	U	2.9	UJ	2.5	U	2.9	UJ	2.5	U
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	UJ	1.2	U	1	UJ
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	UJ	1	U
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-7		MW12-7		MW12-7		MW12-8		MW12-8		MW12-9	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122048		122044		122272		122046		122258		122050	
DEPTH TO TOP OF SAMPLE								14		14		13		13		13.86		15	
DEPTH TO BOTTOM OF SAMPLE								14		14		13		13		13.86		15	
SAMPLE DATE								5/5/1999		5/5/1999		12/18/1999		5/6/1999		12/14/1999		5/6/1999	
QC CODE								DU		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		1		2		1		2		1	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
4-Methylphenol	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.5	U	2.5	U	2.9	U	2.5	UJ	2.9	U	2.5	UJ
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.5	U	2.5	U	2.9	UR	2.5	U	2.9	UJ	2.5	U
Acenaphthene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Acenaphthylene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Anthracene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1	U	1	U	1.2	U	1	UJ	1.2	U	1	UJ
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1	UJ	1	UJ	1.2	UJ	1	UJ	1.2	U	1	UJ
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1.1	U	1	U	1.2	U	1	U	1.6		1	U
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Carbazole	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	UJ	1	U	1.2	U	1	U
Chrysene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1	U	1	U	1.2	U	0.16	J	0.08	J	1	U
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Dibenzofuran	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1	U	1	U	1.2	U	0.055	J	1.2	U	0.05	J
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Fluoranthene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	UJ	1	U	1.2	U	1	U
Fluorene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1	UJ	1	UJ	1.2	U	1	UJ	1.2	U	1	UJ
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Isophorone	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1	UJ	1	UJ	1.2	U	1	UJ	1.2	U	1	UJ
Naphthalene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Nitrobenzene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12	
LOCATION ID								MW12-7		MW12-7		MW12-7		MW12-8		MW12-8		MW12-9	
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER	G
SAMPLE ID								122048		122044		122272		122046		122258		122050	
DEPTH TO TOP OF SAMPLE								14		14		13		13		13.86		15	
DEPTH TO BOTTOM OF SAMPLE								14		14		13		13		13.86		15	
SAMPLE DATE								5/5/1999		5/5/1999		12/18/1999		5/6/1999		12/14/1999		5/6/1999	
QC CODE								DU		SA		SA		SA		SA		SA	
STUDY ID								RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	1		1		2		1		2		1	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.5	U	2.5	U	2.9	UJ	2.5	U	3.2	UJ	2.5	U
Phenanthrene	UG/L	0	0.00%		0	0	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Phenol	UG/L	0.43	5.62%	1	0	5	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
Pyrene	UG/L	0.08	2.25%		0	2	89	1	U	1	U	1.2	U	1	U	1.2	U	1	U
PESTICIDES/ PCBS																			
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U	0.01	U	0.01	U	0.017	U	0.011	U	0.014	U
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U	0.01	U	0.01	U	0.017	U	0.011	U	0.014	U
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.01	U	0.01	U	0.01	U	0.017	U	0.011	U	0.014	U
Aldrin	UG/L	0	0.00%	0	0	0	89	0.005	U	0.0051	U	0.0051	U	0.0085	U	0.0054	U	0.007	U
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.005	U	0.0051	U	0.0051	U	0.0085	U	0.0054	U	0.007	U
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.005	U	0.0051	U	0.0051	U	0.0085	U	0.0054	U	0.007	U
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.17	U	0.11	U	0.14	U
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.2	U	0.2	U	0.2	U	0.34	U	0.22	U	0.28	U
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.17	U	0.11	U	0.14	U
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.17	U	0.11	U	0.14	U
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.17	U	0.11	U	0.14	U
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.17	U	0.11	U	0.14	U
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U	0.1	U	0.1	U	0.17	U	0.11	U	0.14	U
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.005	U	0.0051	U	0.0051	U	0.0085	U	0.0054	U	0.007	U
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.005	U	0.0051	U	0.0051	U	0.0085	U	0.0054	U	0.007	U
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U	0.01	U	0.01	U	0.017	U	0.011	U	0.014	U
Endosulfan I	UG/L	0	0.00%		0	0	89	0.005	U	0.0051	U	0.0051	U	0.0085	U	0.0054	U	0.007	U
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U	0.01	U	0.01	U	0.017	U	0.011	U	0.014	U
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U	0.01	U	0.01	U	0.017	U	0.011	U	0.014	U
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U	0.01	U	0.01	U	0.017	U	0.011	U	0.014	U
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U	0.01	U	0.01	U	0.017	U	0.011	U	0.014	U
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U	0.01	U	0.01	U	0.017	U	0.011	U	0.014	U
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.005	U	0.0051	U	0.0051	U	0.0085	U	0.0054	U	0.007	U
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.005	U	0.0051	U	0.0051	U	0.0085	U	0.0054	U	0.007	U
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.005	U	0.0051	U	0.0051	U	0.0085	U	0.0054	U	0.007	U
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.005	U	0.0051	U	0.0051	U	0.0085	U	0.0054	U	0.007	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	UJ	0.01	UJ	0.01	U	0.017	UJ	0.011	U	0.014	UJ
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.05	U	0.051	U	0.051	U	0.085	U	0.054	U	0.07	U
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.5	U	0.51	U	0.51	U	0.85	U	0.54	U	0.7	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		SEAD-12		
LOCATION ID								MW12-7		MW12-7		MW12-7		MW12-8		MW12-8		MW12-9		
MATRIX							G	GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		GROUND WATER		G
SAMPLE ID								122048		122044		122272		122046		122258		122050		
DEPTH TO TOP OF SAMPLE								14		14		13		13		13.86		15		
DEPTH TO BOTTOM OF SAMPLE								14		14		13		13		13.86		15		
SAMPLE DATE								5/5/1999		5/5/1999		12/18/1999		5/6/1999		12/14/1999		5/6/1999		
QC CODE								DU		SA		SA		SA		SA		SA		
STUDY ID								RI PHASE 1 STEP 1		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		RI P1S1 - Pu RS		RI PHASE 1 STEP 1		
SAMPLE ROUND								1		1		2		1		2		1		
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	VALUE	(Q)	
METALS																				
Aluminum	UG/L	9880	97.80%		0	89	91	74.6	J	65.3	J	34.2	J	259		146	J	25.1	J	
Antimony	UG/L	43.2	7.69%	3	3	7	91	5.2	U	5.2	U	2.2	U	5.2	U	2.2	U	5.2	U	
Arsenic	UG/L	5.1	14.29%	25	0	13	91	2.9	U	2.9	U	2.5	U	5.1	J	2.5	U	2.9	U	
Barium	UG/L	189	100.00%	1000	0	91	91	49.9	J	49.6	J	64.5	J	66.1	J	60.7	J	67	J	
Beryllium	UG/L	1.6	19.78%		0	18	91	0.3	U	0.3	U	0.1	U	0.3	U	0.16	J	0.3	U	
Cadmium	UG/L	3.3	28.57%	5	0	26	91	2	J	0.9	J	0.2	U	3.3	J	0.2	U	0.77	J	
Calcium	UG/L	260000	100.00%		0	91	91	113000		113000		104000		86500		80600		116000		
Chromium	UG/L	18.5	43.96%	50	0	40	91	1.2	U	1.2	U	1	U	1.4	J	1.4	J	1.2	U	
Cobalt	UG/L	15.2	19.78%		0	18	91	3.3	U	3.3	U	1.3	U	3.3	U	1.9	J	3.3	U	
Copper	UG/L	25.1	52.75%	200	0	48	91	3.2	J	4.1	J	15.8	J	4.2	J	1.9	U	3.8	J	
Cyanide	UG/L	0	0.00%	200	0	0	91	5	U	5	U	10	U	5	U	10	U	5	U	
Iron	UG/L	20700	91.21%	300	44	83	91	94.4	J	86.2	J	20.3	U	384		166	J	19.3	J	
Lead	UG/L	18.8	13.19%	25	0	12	91	0.99	J	0.9	U	1.3	UJ	0.9	U	1.3	UJ	0.9	U	
Magnesium	UG/L	72800	100.00%		0	91	91	27000		26900		24200		20600		17300		29400		
Manganese	UG/L	3280	98.90%	300	12	90	91	90.4		92.2		21.2		21.7		7.6	J	138		
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	
Nickel	UG/L	38.8	52.75%	100	0	48	91	10.2	U	10.2	U	1.9	J	10.2	U	1.7	U	10.2	U	
Potassium	UG/L	14200	100.00%		0	91	91	2740	J	2620	J	2310	J	4640	J	2120	J	5710		
Selenium	UG/L	6.5	21.98%	10	0	20	91	1.8	J	1.8	J	2.2	U	1.8	J	2.2	U	1.9	J	
Silver	UG/L	5.2	38.46%	50	0	35	91	3.9	J	5	J	1.3	UJ	4.1	J	3.7	J	4.2	J	
Sodium	UG/L	408000	100.00%	20000	24	91	91	13500		13400		14000		9340		7700		12000		
Thallium	UG/L	7	41.76%		0	38	91	2.6	U	2.6	U	3.2	U	4.5	J	3.2	U	2.6	U	
Vanadium	UG/L	18.3	28.57%		0	26	91	3.8	U	3.8	U	1.8	U	3.8	U	3	J	3.8	U	
Zinc	UG/L	2640	93.41%		0	85	91	22.9		13.4	J	3.3	J	8.1	J	18.5	J	2.7	J	

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12	
LOCATION ID								MW12-9	
MATRIX							G	GROUND WATER	
SAMPLE ID								122245	
DEPTH TO TOP OF SAMPLE								16	
DEPTH TO BOTTOM OF SAMPLE								16	
SAMPLE DATE								12/7/1999	
QC CODE								SA	
STUDY ID								RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY	NYSDEC	NUMBER	NUMBER	NUMBER	2	
PARAMETER	UNIT	MAXIMUM	OF DETECTION	CLASS GA STD.	ABOVE STD.	OF DETECTS	OF ANALYSES	VALUE	(Q)
VOLATILE ORGANICS									
1,1,1,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	40	0.5	U
1,1,1-Trichloroethane	UG/L	1.7	1.12%	5	0	1	89	0.5	U
1,1,2,2-Tetrachloroethane	UG/L	0	0.00%	5	0	0	89	0.5	U
1,1,2-Trichloroethane	UG/L	0	0.00%	1	0	0	89	0.5	U
1,1-Dichloroethane	UG/L	0	0.00%	5	0	0	89	0.5	U
1,1-Dichloroethene	UG/L	0	0.00%	5	0	0	89	0.5	U
1,1-Dichloropropene	UG/L	0	0.00%	5	0	0	40	0.5	U
1,2,3-Trichlorobenzene	UG/L	0	0.00%	5	0	0	40	0.5	U
1,2,3-Trichloropropane	UG/L	0	0.00%	0.04	0	0	40	0.5	U
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	82	0.5	U
1,2,4-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U
1,2-Dibromo-3-chloropropane	UG/L	0	0.00%	0.04	0	0	82	0.5	U
1,2-Dibromoethane	UG/L	0	0.00%	0.0006	0	0	82	0.5	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	0.5	U
1,2-Dichloroethane	UG/L	0	0.00%	0.6	0	0	89	0.5	U
1,2-Dichloroethene (total)	UG/L	30	14.29%	5	1	1	7		
1,2-Dichloropropane	UG/L	0	0.00%	1	0	0	89	0.5	U
1,3,5-Trimethylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	0.5	U
1,3-Dichloropropane	UG/L	0	0.00%	5	0	0	40	0.5	U
1,4-Dichlorobenzene	UG/L	0	0.00%	3	0	0	82	0.5	U
2,2-Dichloropropane	UG/L	0	0.00%	5	0	0	40	0.5	U
2-Chlorotoluene	UG/L	0	0.00%	5	0	0	40	0.5	U
2-Nitropropane	UG/L	0	0.00%	5	0	0	40	25	U
Acetone	UG/L	9	6.74%		0	6	89	5	UJ
Acrylonitrile	UG/L	0	0.00%	5	0	0	40	0.5	U
Allyl chloride	UG/L	0	0.00%	5	0	0	40	0.5	U
Benzene	UG/L	0	0.00%	1	0	0	89	0.5	U
Bromobenzene	UG/L	0	0.00%	5	0	0	40	0.5	U
Bromochloromethane	UG/L	0	0.00%	5	0	0	82	0.5	U
Bromodichloromethane	UG/L	0	0.00%		0	0	89	0.5	U
Bromoform	UG/L	0	0.00%		0	0	89	0.5	UJ
Butyl chloride	UG/L	0	0.00%	5	0	0	40	0.5	U
Carbon disulfide	UG/L	0	0.00%		0	0	89	0.5	U
Carbon tetrachloride	UG/L	0	0.00%	5	0	0	89	0.5	U
Chloracetonitrile	UG/L	0	0.00%		0	0	40	25	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12	
LOCATION ID								MW12-9	
MATRIX							G	GROUND WATER	
SAMPLE ID								122245	
DEPTH TO TOP OF SAMPLE								16	
DEPTH TO BOTTOM OF SAMPLE								16	
SAMPLE DATE								12/7/1999	
QC CODE								SA	
STUDY ID								RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY	NYSDEC	NUMBER	NUMBER	NUMBER	2	
PARAMETER	UNIT	MAXIMUM	OF DETECTION	CLASS GA STD.	ABOVE STD.	OF DETECTS	OF ANALYSES	VALUE	(Q)
Chlorobenzene	UG/L	0	0.00%	5	0	0	89	0.5	U
Chlorodibromomethane	UG/L	0	0.00%		0	0	89	0.5	U
Chloroethane	UG/L	0	0.00%	5	0	0	89	0.5	U
Chloroform	UG/L	0	0.00%	7	0	0	89	0.5	U
Cis-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	0.5	U
Cis-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	0.5	U
Dichlorodifluoromethane	UG/L	0	0.00%	5	0	0	40	0.5	U
Dichloromethyl methyl ketone	UG/L	0	0.00%		0	0	40	25	UJ
Ethyl benzene	UG/L	0	0.00%	5	0	0	89	0.5	U
Ethyl ether	UG/L	0	0.00%		0	0	40	0.5	U
Ethyl methacrylate	UG/L	0	0.00%		0	0	40	0.5	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	40	0.5	U
Hexachloroethane	UG/L	0	0.00%	5	0	0	40	0.5	U
Isopropylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U
Meta/Para Xylene	UG/L	0	0.00%	5	0	0	40	0.5	U
Methacrylonitrile	UG/L	0	0.00%	5	0	0	40	0.5	U
Methyl 2-propenoate	UG/L	0	0.00%		0	0	40	0.5	U
Methyl Tertbutyl Ether	UG/L	0	0.00%		0	0	40	0.5	U
Methyl bromide	UG/L	0	0.00%	5	0	0	89	0.5	U
Methyl butyl ketone	UG/L	0	0.00%		0	0	89	2.5	UJ
Methyl chloride	UG/L	0	0.00%	5	0	0	89	0.5	U
Methyl ethyl ketone	UG/L	0	0.00%		0	0	89	5	UJ
Methyl iodide	UG/L	0	0.00%	5	0	0	40	0.5	U
Methyl isobutyl ketone	UG/L	0	0.00%		0	0	89	2.5	U
Methyl methacrylate	UG/L	0	0.00%	50	0	0	40	0.5	U
Methylene bromide	UG/L	0	0.00%	5	0	0	40	0.5	U
Methylene chloride	UG/L	0	0.00%	5	0	0	89	0.5	U
Naphthalene	UG/L	0	0.00%		0	0	40	0.5	U
Nitrobenzene	UG/L	0	0.00%	0.4	0	0	40	25	UR
Ortho Xylene	UG/L	0	0.00%	5	0	0	40	0.5	U
Pentachloroethane	UG/L	0	0.00%	5	0	0	40	0.5	UJ
Propionitrile	UG/L	0	0.00%		0	0	40	25	U
Propylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U
Styrene	UG/L	0	0.00%	5	0	0	89	0.5	U
Tetrachloroethene	UG/L	0	0.00%	5	0	0	89	0.5	U
Tetrahydrofuran	UG/L	0	0.00%		0	0	40	2.5	U
Toluene	UG/L	3.1	5.62%	5	0	5	89	0.5	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12	
LOCATION ID								MW12-9	
MATRIX							G	GROUND WATER	
SAMPLE ID								122245	
DEPTH TO TOP OF SAMPLE								16	
DEPTH TO BOTTOM OF SAMPLE								16	
SAMPLE DATE								12/7/1999	
QC CODE								SA	
STUDY ID								RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)
Total Xylenes	UG/L	0	0.00%	5	0	0	89	0.5	U
Trans-1,2-Dichloroethene	UG/L	0	0.00%	5	0	0	82	0.5	U
Trans-1,3-Dichloropropene	UG/L	0	0.00%	0.4	0	0	89	0.5	U
Trans-1,4-Dichloro-2-butene	UG/L	0	0.00%		0	0	40	0.5	U
Trichloroethene	UG/L	1600	3.37%	5	2	3	89	0.5	U
Trichlorofluoromethane	UG/L	0	0.00%	5	0	0	40	0.5	U
Vinyl chloride	UG/L	0	0.00%	2	0	0	89	0.5	U
n-Butylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U
p-Chlorotoluene	UG/L	0	0.00%	5	0	0	40	0.5	U
p-Isopropyltoluene	UG/L	0	0.00%	5	0	0	40	0.5	U
sec-Butylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U
tert-Butylbenzene	UG/L	0	0.00%	5	0	0	40	0.5	U
SEMI-VOLATILE ORGANICS									
1,2,4-Trichlorobenzene	UG/L	0	0.00%	5	0	0	89	1.2	U
1,2-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.2	U
1,3-Dichlorobenzene	UG/L	0	0.00%	3	0	0	89	1.2	U
1,4-Dichlorobenzene	UG/L	0.093	8.99%	3	0	8	89	0.063	J
2,2'-oxybis(1-Chloropropane)	UG/L	0	0.00%		0	0	6		
2,4,5-Trichlorophenol	UG/L	0	0.00%		0	0	89	2.9	U
2,4,6-Trichlorophenol	UG/L	0	0.00%		0	0	89	1.2	U
2,4-Dichlorophenol	UG/L	0	0.00%	5	0	0	89	1.2	U
2,4-Dimethylphenol	UG/L	0	0.00%		0	0	89	1.2	U
2,4-Dinitrophenol	UG/L	0	0.00%		0	0	89	2.9	U
2,4-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.2	U
2,6-Dinitrotoluene	UG/L	0	0.00%	5	0	0	89	1.2	U
2-Chloronaphthalene	UG/L	0	0.00%		0	0	89	1.2	U
2-Chlorophenol	UG/L	0	0.00%		0	0	89	1.2	U
2-Methylnaphthalene	UG/L	0	0.00%		0	0	89	1.2	U
2-Methylphenol	UG/L	0	0.00%		0	0	89	1.2	U
2-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.9	U
2-Nitrophenol	UG/L	0	0.00%		0	0	89	1.2	U
3,3'-Dichlorobenzidine	UG/L	0	0.00%	5	0	0	89	1.2	U
3-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.9	U
4,6-Dinitro-2-methylphenol	UG/L	0	0.00%		0	0	89	2.9	U
4-Bromophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.2	U
4-Chloro-3-methylphenol	UG/L	0	0.00%		0	0	89	1.2	U
4-Chloroaniline	UG/L	0	0.00%	5	0	0	89	1.2	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12	
LOCATION ID								MW12-9	
MATRIX							G	GROUND WATER	
SAMPLE ID								122245	
DEPTH TO TOP OF SAMPLE								16	
DEPTH TO BOTTOM OF SAMPLE								16	
SAMPLE DATE								12/7/1999	
QC CODE								SA	
STUDY ID								RI P1S1 - Pu RS	
SAMPLE ROUND								2	
PARAMETER	UNIT	MAXIMUM	FREQUENCY OF DETECTION	NYSDEC CLASS GA STD.	NUMBER ABOVE STD.	NUMBER OF DETECTS	NUMBER OF ANALYSES	VALUE	(Q)
4-Chlorophenyl phenyl ether	UG/L	0	0.00%		0	0	89	1.2	U
4-Methylphenol	UG/L	0	0.00%		0	0	89	1.2	U
4-Nitroaniline	UG/L	0	0.00%	5	0	0	89	2.9	U
4-Nitrophenol	UG/L	0	0.00%		0	0	89	2.9	U
Acenaphthene	UG/L	0	0.00%		0	0	89	1.2	U
Acenaphthylene	UG/L	0	0.00%		0	0	89	1.2	U
Anthracene	UG/L	0	0.00%		0	0	89	1.2	U
Benzo(a)anthracene	UG/L	0	0.00%		0	0	89	1.2	U
Benzo(a)pyrene	UG/L	0.097	2.25%	0	0	2	89	1.2	U
Benzo(b)fluoranthene	UG/L	0.076	1.12%		0	1	89	1.2	U
Benzo(ghi)perylene	UG/L	0.18	4.49%		0	4	89	1.2	U
Benzo(k)fluoranthene	UG/L	0.091	1.12%		0	1	89	1.2	U
Bis(2-Chloroethoxy)methane	UG/L	0	0.00%	5	0	0	89	1.2	U
Bis(2-Chloroethyl)ether	UG/L	0	0.00%	1	0	0	89	1.2	U
Bis(2-Chloroisopropyl)ether	UG/L	0	0.00%	5	0	0	83	1.2	U
Bis(2-Ethylhexyl)phthalate	UG/L	230	3.37%	5	2	3	89	1.2	U
Butylbenzylphthalate	UG/L	0.064	1.12%		0	1	89	1.2	U
Carbazole	UG/L	0	0.00%		0	0	89	1.2	U
Chrysene	UG/L	0	0.00%		0	0	89	1.2	U
Di-n-butylphthalate	UG/L	0.21	8.99%		0	8	89	1.2	U
Di-n-octylphthalate	UG/L	0.41	6.74%		0	6	89	1.2	U
Dibenz(a,h)anthracene	UG/L	0	0.00%		0	0	89	1.2	U
Dibenzofuran	UG/L	0	0.00%		0	0	89	1.2	U
Diethyl phthalate	UG/L	4.3	13.48%		0	12	89	1.2	U
Dimethylphthalate	UG/L	0	0.00%		0	0	89	1.2	U
Fluoranthene	UG/L	0	0.00%		0	0	89	1.2	U
Fluorene	UG/L	0	0.00%		0	0	89	1.2	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	89	1.2	U
Hexachlorobutadiene	UG/L	0	0.00%	0.5	0	0	89	1.2	U
Hexachlorocyclopentadiene	UG/L	0	0.00%	5	0	0	89	1.2	U
Hexachloroethane	UG/L	0	0.00%	5	0	0	89	1.2	U
Indeno(1,2,3-cd)pyrene	UG/L	0.1	1.12%		0	1	89	1.2	U
Isophorone	UG/L	0	0.00%		0	0	89	1.2	U
N-Nitrosodiphenylamine	UG/L	0	0.00%		0	0	89	1.2	U
N-Nitrosodipropylamine	UG/L	0	0.00%		0	0	89	1.2	U
Naphthalene	UG/L	0	0.00%		0	0	89	1.2	U
Nitrobenzene	UG/L	0	0.00%		0	0	89	1.2	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12	
LOCATION ID								MW12-9	
MATRIX							G	GROUND WATER	
SAMPLE ID								122245	
DEPTH TO TOP OF SAMPLE								16	
DEPTH TO BOTTOM OF SAMPLE								16	
SAMPLE DATE								12/7/1999	
QC CODE								SA	
STUDY ID								RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY OF	NYSDEC CLASS GA	NUMBER ABOVE	NUMBER OF	NUMBER OF	2	
PARAMETER	UNIT	MAXIMUM	DETECTION	STD.	STD.	DETECTS	ANALYSES	VALUE	(Q)
Pentachlorophenol	UG/L	0	0.00%	1	0	0	89	2.9	U
Phenanthrene	UG/L	0	0.00%		0	0	89	1.2	U
Phenol	UG/L	0.43	5.62%	1	0	5	89	1.2	U
Pyrene	UG/L	0.08	2.25%		0	2	89	1.2	U
PESTICIDES/ PCBS									
4,4'-DDD	UG/L	0	0.00%	0.3	0	0	89	0.01	U
4,4'-DDE	UG/L	0	0.00%	0.2	0	0	89	0.01	U
4,4'-DDT	UG/L	0.018	1.12%	0.2	0	1	89	0.01	U
Aldrin	UG/L	0	0.00%	0	0	0	89	0.0052	U
Alpha-BHC	UG/L	0	0.00%	0.01	0	0	89	0.0052	U
Alpha-Chlordane	UG/L	0	0.00%		0	0	89	0.0052	U
Aroclor-1016	UG/L	0	0.00%	0.09	0	0	89	0.1	U
Aroclor-1221	UG/L	0	0.00%	0.09	0	0	89	0.21	U
Aroclor-1232	UG/L	0	0.00%	0.09	0	0	89	0.1	U
Aroclor-1242	UG/L	0	0.00%	0.09	0	0	89	0.1	U
Aroclor-1248	UG/L	0	0.00%	0.09	0	0	89	0.1	U
Aroclor-1254	UG/L	0	0.00%	0.09	0	0	89	0.1	U
Aroclor-1260	UG/L	0	0.00%	0.09	0	0	89	0.1	U
Beta-BHC	UG/L	0.0034	1.12%	0.04	0	1	89	0.0052	U
Delta-BHC	UG/L	0	0.00%	0.04	0	0	89	0.0052	U
Dieldrin	UG/L	0	0.00%	0.004	0	0	89	0.01	U
Endosulfan I	UG/L	0	0.00%		0	0	89	0.0052	U
Endosulfan II	UG/L	0	0.00%		0	0	89	0.01	U
Endosulfan sulfate	UG/L	0	0.00%		0	0	89	0.01	U
Endrin	UG/L	0	0.00%	0	0	0	89	0.01	U
Endrin aldehyde	UG/L	0	0.00%	5	0	0	89	0.01	U
Endrin ketone	UG/L	0	0.00%	5	0	0	89	0.01	U
Gamma-BHC/Lindane	UG/L	0	0.00%	0.05	0	0	89	0.0052	U
Gamma-Chlordane	UG/L	0.0056	1.12%		0	1	89	0.0052	U
Heptachlor	UG/L	0.0029	1.12%	0.04	0	1	89	0.0052	U
Heptachlor epoxide	UG/L	0	0.00%	0.03	0	0	89	0.0052	U
Hexachlorobenzene	UG/L	0	0.00%	0.04	0	0	83	0.01	U
Methoxychlor	UG/L	0	0.00%	35	0	0	89	0.052	U
Toxaphene	UG/L	0	0.00%	0.06	0	0	89	0.52	U

TABLE J-2
SITE GROUNDWATER - CHEMICAL RESULTS
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY

FACILITY								SEAD-12	
LOCATION ID								MW12-9	
MATRIX							G	GROUND WATER	
SAMPLE ID								122245	
DEPTH TO TOP OF SAMPLE								16	
DEPTH TO BOTTOM OF SAMPLE								16	
SAMPLE DATE								12/7/1999	
QC CODE								SA	
STUDY ID								RI P1S1 - Pu RS	
SAMPLE ROUND			FREQUENCY	NYSDEC	NUMBER	NUMBER	NUMBER	2	
PARAMETER	UNIT	MAXIMUM	OF DETECTION	CLASS GA STD.	ABOVE STD.	OF DETECTS	OF ANALYSES	VALUE	(Q)
METALS									
Aluminum	UG/L	9880	97.80%		0	89	91	89.1	J
Antimony	UG/L	43.2	7.69%	3	3	7	91	2.7	U
Arsenic	UG/L	5.1	14.29%	25	0	13	91	1.9	U
Barium	UG/L	189	100.00%	1000	0	91	91	55.3	J
Beryllium	UG/L	1.6	19.78%		0	18	91	0.2	U
Cadmium	UG/L	3.3	28.57%	5	0	26	91	0.3	U
Calcium	UG/L	260000	100.00%		0	91	91	125000	
Chromium	UG/L	18.5	43.96%	50	0	40	91	1	J
Cobalt	UG/L	15.2	19.78%		0	18	91	2	U
Copper	UG/L	25.1	52.75%	200	0	48	91	1.7	U
Cyanide	UG/L	0	0.00%	200	0	0	91	10	U
Iron	UG/L	20700	91.21%	300	44	83	91	197	
Lead	UG/L	18.8	13.19%	25	0	12	91	1	U
Magnesium	UG/L	72800	100.00%		0	91	91	28100	
Manganese	UG/L	3280	98.90%	300	12	90	91	27.4	
Mercury	UG/L	0.17	9.89%	0.7	0	9	91	0.1	U
Nickel	UG/L	38.8	52.75%	100	0	48	91	1.7	U
Potassium	UG/L	14200	100.00%		0	91	91	2650	J
Selenium	UG/L	6.5	21.98%	10	0	20	91	2.4	U
Silver	UG/L	5.2	38.46%	50	0	35	91	2.6	J
Sodium	UG/L	408000	100.00%	20000	24	91	91	8310	
Thallium	UG/L	7	41.76%		0	38	91	3.3	J
Vanadium	UG/L	18.3	28.57%		0	26	91	1.5	U
Zinc	UG/L	2640	93.41%		0	85	91	3.8	J

TABLE J-3
BACKGROUND RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-1			MW12-1			MW12-2			MW12-2			MW12-3		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122033			122225			122034			122223			122035		
DEPTH TO TOP OF SAMPLE								7.5			9.5			6.5			6.5			18		
DEPTH TO BOTTOM OF SAMPLE								7.5			9.5			6.5			6.5			18		
SAMPLE DATE								4/25/1999			12/2/1999			4/25/1999			12/1/1999			4/25/1999		
QC CODE								SA			SA			SA			SA			SA		
STUDY ID			FREQUENCY	RAD	NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
SAMPLE ROUND			OF	GUIDE-	ABOVE	OF	OF	1			2			1			2			1		
PARAMETER	UNIT	MAXIMUM	DETECTION	LINE	RAD	DETECT	ANALYSES															
Bismuth-214	pCi/L	37.8	50%		0	9	18	26.4	J	+/-9.1	6.44	U	+/-6.05	14.2	J	+/-6.7	8.76	U	+/-7.73	20.3	J	+/-5.4
Cesium-137	pCi/L	0	0%		0	0	18	2.7	U		2.47	U	+/-2.87	0.5	U		3.24	U	+/-2	1.2	U	
Cobalt-57	pCi/L	2.62	17%		0	3	18	0.7	U		2.46	U	+/-1.37	0.7	U		3.16	U	+/-1.81	0.5	U	
Cobalt-60	pCi/L	0	0%		0	0	18	0.4	U		2.93	U	+/-1.45	1.6	U		4.17	U	+/-2.15	1.1	U	
Gross Alpha	pCi/L	5.7	44%	15	0	8	18	0.5	U	+/-1.6	5.36	J	+/-2.11	2.2	U	+/-1.4	2.35	J	+/-1.36	5.7		+/-1.8
Gross Beta	pCi/L	12.6	89%	1000	0	16	18	1.8		+/-1.3	5.03	J	+/-1.52	1		+/-1.3	2.24	U	+/-1.17	6.3		+/-1.4
Lead-210	pCi/L	0	0%		0	0	9				2.98	U	+/-1.36				3.45	U	+/-1.58			
Lead-211	pCi/L	0	0%		0	0	18	3.8	U		69.8	U	+/-41.1	24.3	U		99.1	U	+/-58.4	15.6	U	
Lead-214	pCi/L	27.3	50%		0	9	18	17.6		+/-4.6	6.42	U	+/-3.53	17.8		+/-5	8.81	U	+/-7.64	18.1		+/-3.7
Plutonium-238	pCi/L	0	0%		0	0	9				0.00273	U	+/-0				0.00695	U	+/-0			
Plutonium-239/240	pCi/L	0	0%		0	0	18	0.1	U	+/-0.1	0.00273	U	+/-0	0.3	U	+/-0.1	0.00272	U	+/-0	0.1	U	+/-0.1
Radium-223	pCi/L	1.06	33%		0	6	18		U		0.436	U	+/-0.27	0.1			0.579	U	+/-0.33		U	
Radium-226	pCi/L	0.791	44%	3	0	8	18	0.2	U	+/-0.1	0.968	U	+/-0.56	0.1		+/-0.1	0.747	U	+/-0.43	0.2	U	+/-0.1
Radon-222	pCi/L	341	78%	300	1	14	18	98.9		+/-39.	67.7	U	+/-38.2	268		+/-43	144.4	J	+/-44.9	167		+/-41.
Thorium-227	pCi/L	1.06	11%		0	1	9				0.436	U	+/-0.27				0.579	U	+/-0.33			
Thorium-228	pCi/L	0	0%		0	0	9				0.09	UJ	+/-0.05				0.115	UJ	+/-0.05			
Thorium-230	pCi/L	0.6	17%		0	3	18	0.2	U	+/-0.2	0.0354	U	+/-0.02	0.2	U	+/-0.2	0.038	U	+/-0.02	0.3	U	+/-0.2
Thorium-232	pCi/L	0.173	22%		0	4	18	0.2	U	+/-0.1	0.0272	U	+/-0.02	0.2	U	+/-0.1	0.0329	U	+/-0.01	0.2	U	+/-0.1
Tritium	pCi/L	228	18%		0	3	17	114		+/-16	453	U	+/-0.25	267	U	+/-158	463	U	+/-0.25	267	U	+/-15
Uranium-234	pCi/L	1.8	89%	124847	0	16	18	0.9	J	+/-0.4	0.796	J	+/-0.32	0.6		+/-0.3	0.871	J	+/-0.35	1.2		+/-0.5
Uranium-235	pCi/L	0.1	22%	43.4216	0	4	18	0.1	J	+/-0.1	0.203	U	+/-0.06	0.1	U	+/-0.1	0.235	U	+/-0.07	0.1		+/-0.1
Uranium-238	pCi/L	1.3	78%	6.66933	0	14	18	0.9	J	+/-0.4	0.534	J	+/-0.26	0.4		+/-0.2	0.405	J	+/-0.24	0.8		+/-0.4

TABLE J-3
BACKGROUND RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-3			MW12-4			MW12-4			MW12-3		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122224			122036			122222			122037		
DEPTH TO TOP OF SAMPLE								18			12			12			16		
DEPTH TO BOTTOM OF SAMPLE								18			12			12			16		
SAMPLE DATE								12/2/1999			4/25/1999			12/1/1999			4/25/1999		
QC CODE								SA			SA			SA			SA		
STUDY ID			FREQUENCY	RAD	NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
SAMPLE ROUND			OF	GUIDE-	ABOVE	OF	OF	2			1			2			1		
PARAMETER	UNIT	MAXIMUM	DETECTION	LINE	RAD	DETECT	ANALYSES												
Bismuth-214	pCi/L	37.8	50%		0	9	18	18		+/-10.6	24	J	+/-11.4	8.35	U	+/-7.43	17.8	J	+/-4.4
Cesium-137	pCi/L	0	0%		0	0	18	4.19	U	+/-2.29	2	U		3.46	U	+/-1.77	1.4	U	
Cobalt-57	pCi/L	2.62	17%		0	3	18	2.32	U	+/-1.49	0.9	U		2.92	U	+/-1.65	1.8		+/-1
Cobalt-60	pCi/L	0	0%		0	0	18	4.28	U	+/-2.18	0.4	U		3.67	U	+/-1.99	1	U	
Gross Alpha	pCi/L	5.7	44%	15	0	8	18	2.54	U	+/-1.63	3.6	U	+/-2.2	4.88	U	+/-2.14	2.5		+/-2.3
Gross Beta	pCi/L	12.6	89%	1000	0	16	18	3	J	+/-1.34	2.6		+/-1.9	3.85	J	+/-1.42	12.6		+/-2.1
Lead-210	pCi/L	0	0%		0	0	9	2.77	U	+/-1.36				2.71	U	+/-1.4			
Lead-211	pCi/L	0	0%		0	0	18	95.8	U	+/-54.8	25	U		92.5	U	+/-52.7	11.5	U	
Lead-214	pCi/L	27.3	50%		0	9	18	8.8	J	+/-5.53	16		+/-4	8.46	U	+/-5.32	17.4		+/-4.7
Plutonium-238	pCi/L	0	0%		0	0	9	0.00242	U	+/-0				0.0126	UJ	+/-0.01			
Plutonium-239/240	pCi/L	0	0%		0	0	18	0.00242	U	+/-0	0.1	U	+/-0.1	0.0126	UJ	+/-0	0.3	U	+/-0.1
Radium-223	pCi/L	1.06	33%		0	6	18	0.638	U	+/-0.37	0.2			0.609	U	+/-0.32	0.2		
Radium-226	pCi/L	0.791	44%	3	0	8	18	0.213	J	+/-0.24	0.2		+/-0.1	0.521	U	+/-0.23	0.2		+/-0.1
Radon-222	pCi/L	341	78%	300	1	14	18	91.8	J	+/-42.8	94.5		+/-40.3	31.7		+/-45.8	202		+/-42.5
Thorium-227	pCi/L	1.06	11%		0	1	9	0.638	U	+/-0.37				0.609	U	+/-0.32			
Thorium-228	pCi/L	0	0%		0	0	9	0.107	UJ	+/-0.06				0.0474	UJ	+/-0.04			
Thorium-230	pCi/L	0.6	17%		0	3	18	0.031	U	+/-0.02	0.5	U	+/-0.3	0.0215	U	+/-0.02	0.3		+/-0.3
Thorium-232	pCi/L	0.173	22%		0	4	18	0.031	U	+/-0.01	0.1		+/-0.2	0.00841	U	+/-0.01	0.2		+/-0.1
Tritium	pCi/L	228	18%		0	3	17	463	U	+/-0.26	267	U	+/-157				228		+/-169
Uranium-234	pCi/L	1.8	89%	124847	0	16	18	1.29		+/-0.42	0.7		+/-0.4	0.427	J	+/-0.26	1.3		+/-0.6
Uranium-235	pCi/L	0.1	22%	43.4216	0	4	18	0.249	U	+/-0.07	0.3	U	+/-0.1	0.223	U	+/-0.03	0.1		+/-0.1
Uranium-238	pCi/L	1.3	78%	6.66933	0	14	18	1.08		+/-0.38	0.3		+/-0.2	0.345	J	+/-0.22	1.3		+/-0.5

TABLE J-3
BACKGROUND RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-57	
LOCATION ID								MW12-5			MW12-6			MW12-6			MW57-1	
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER	
SAMPLE ID								122221			122042			122220			122029	
DEPTH TO TOP OF SAMPLE								16			9.5			9.5			7	
DEPTH TO BOTTOM OF SAMPLE								16			9.5			9.5			7	
SAMPLE DATE								12/1/1999			5/4/1999			12/7/1999			4/23/1999	
QC CODE								SA			SA			SA			SA	
STUDY ID			FREQUENCY	RAD	NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1	
SAMPLE ROUND			OF	GUIDE-	ABOVE	OF	OF	2			1			2			1	
PARAMETER	UNIT	MAXIMUM	DETECTION	LINE	RAD	DETECT	ANALYSES											
Bismuth-214	pCi/L	37.8	50%		0	9	18	6.14	U	+/-3.42	27.4	U	+/-6.8	6.72	U	+/-6.06	20.1	J	+/-7.1
Cesium-137	pCi/L	0	0%		0	0	18	2.69	U	+/-1.53	1.3	U		2.55	U	+/-1.4	2	U	
Cobalt-57	pCi/L	2.62	17%		0	3	18	2.62	J	+/-1	0.6	U		2.63	U	+/-1.47	0.7	U	
Cobalt-60	pCi/L	0	0%		0	0	18	2.95	U	+/-1.73	4.5	U	+/-1.8	2.96	U	+/-1.56	0.4	U	
Gross Alpha	pCi/L	5.7	44%	15	0	8	18	2.67	U	+/-1.55	1.8		+/-2	3.85	U	+/-1.74	1.2	U	+/-0.7
Gross Beta	pCi/L	12.6	89%	1000	0	16	18	2.83	J	+/-1.29	1.6		+/-2.7	5.51	U	+/-2.76	2.1		+/-0.6
Lead-210	pCi/L	0	0%		0	0	9	2.99	U	+/-1.42				3.23	U	+/-1.58			
Lead-211	pCi/L	0	0%		0	0	18	70.4	U	+/-50.7	22.6	U		69.2	U	+/-43.3	19.5	U	
Lead-214	pCi/L	27.3	50%		0	9	18	6.16	U	+/-3.41	27	UJ	+/-4.4	6.16	U	+/-5.92	16.4		+/-4.3
Plutonium-238	pCi/L	0	0%		0	0	9	0.0102	U	+/-0.01				0.00674	U	+/-0			
Plutonium-239/240	pCi/L	0	0%		0	0	18	0.0102	U	+/-0	0.2	U	+/-0.1	0.00264	U	+/-0	0.1	U	+/-0.2
Radium-223	pCi/L	1.06	33%		0	6	18	0.698	U	+/-0.34	0.5			1.06	J	+/-0.74	0.1		
Radium-226	pCi/L	0.791	44%	3	0	8	18	0.905	U	+/-0.47	0.5		+/-0.1	1.05	U	+/-0.54	0.1		+/-0.1
Radon-222	pCi/L	341	78%	300	1	14	18	103.6		+/-49.6	68.3	U	+/-26	-19		+/-45.3	**341**		+/-44.6
Thorium-227	pCi/L	1.06	11%		0	1	9	0.698	U	+/-0.34				1.06	J	+/-0.74			
Thorium-228	pCi/L	0	0%		0	0	9	0.116	UJ	+/-0.06				0.221	UJ	+/-0.12			
Thorium-230	pCi/L	0.6	17%		0	3	18	0.0311	U	+/-0.01	0.2	U	+/-0.2	0.105	U	+/-0.06	0.2	U	+/-0.1
Thorium-232	pCi/L	0.173	22%		0	4	18	0.0359	U	+/-0.01	0.2	U	+/-0.1	0.0499	U	+/-0.02	0.2	U	+/-0.1
Tritium	pCi/L	228	18%		0	3	17	456	U	+/-0.25	90.2	U	+/-159	458	U	+/-0.25	311	U	+/-182
Uranium-234	pCi/L	1.8	89%	124847	0	16	18	1.51		+/-0.47	0.4	U	+/-0.2	0.306	U	+/-0.14	0.1		+/-0.1
Uranium-235	pCi/L	0.1	22%	43.4216	0	4	18	0.0901	U	+/-0.06	0.2	U	+/-0.1	0.249	U	+/-0.09	0.1		+/-0.1
Uranium-238	pCi/L	1.3	78%	6.66933	0	14	18	1.26		+/-0.42	0.1	U	+/-0.1	0.219	U	+/-0.12	0.3		+/-0.2

TABLE J-3
BACKGROUND RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-57			SEAD-45			SEAD-45			OB-GROUNDWATER		
LOCATION ID								MW57-1			MW45-4			MW45-4			MW3-[illegible]		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122227			122000			122247			12[illegible]		
DEPTH TO TOP OF SAMPLE								7			15			8.6			[illegible]		
DEPTH TO BOTTOM OF SAMPLE								7			15			8.6			[illegible]		
SAMPLE DATE								12/2/1999			4/9/1999			12/7/1999			4/[illegible]/199[illegible]		
QC CODE								SA			SA			SA			SA		
STUDY ID			FREQUENCY	RAD	NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
SAMPLE ROUND			OF	GUIDE-	ABOVE	OF	OF	2			1			2			1		
PARAMETER	UNIT	MAXIMUM	DETECTION	LINE	RAD	DETECT	ANALYSES												
Bismuth-214	pCi/L	37.8	50%		0	9	18	9.12	U	+/-4.99	37.8	J	+/-7.8	6.86	UJ	+/-3.61	34.2	J	+/-8.3
Cesium-137	pCi/L	0	0%		0	0	18	4.22	U	+/-2.3	1.6	U		5.06	UJ	+/-2.45	1.[illegible]	U	
Cobalt-57	pCi/L	2.62	17%		0	3	18	3.39	U	+/-2	0.7	J	+/-0.6	2.76	UJ	+/-1.53	0.9	UJ	
Cobalt-60	pCi/L	0	0%		0	0	18	4.51	U	+/-2.24	1.4	U		3.58	UJ	+/-1.93	1.4	U	
Gross Alpha	pCi/L	5.7	44%	15	0	8	18	3.69	J	+/-1.24	0.3		+/-1.9	2.45	UJ	+/-1.54	[illegible]		+/-1
Gross Beta	pCi/L	12.6	89%	1000	0	16	18	1.38	J	+/-0.68	3.3		+/-1.5	5.5	J	+/-2.2	3.3		+/-0.6
Lead-210	pCi/L	0	0%		0	0	9	2.76	U	+/-1.18				2.04	U	+/-0.96	[illegible]		
Lead-211	pCi/L	0	0%		0	0	18	99.4	U	+/-69.6	32	U		81.8	UJ	+/-58.3	32	U	
Lead-214	pCi/L	27.3	50%		0	9	18	9.56	U	+/-8.63	25.2	J	+/-5.7	7.38	UJ	+/-3.69	27.3	J	+/-10.7
Plutonium-238	pCi/L	0	0%		0	0	9	0.0037	U	+/-0				0.0142	U	+/-0.01	[illegible]		[illegible]
Plutonium-239/240	pCi/L	0	0%		0	0	18	0.00942	U	+/-0	0.3	U	+/-0.1	0.0122	U	+/-0.0[illegible]	[illegible]	U	+/-0.1
Radium-223	pCi/L	1.06	33%		0	6	18	0.628	U	+/-0.33	0.3	U		0.415	U	+/-0.27	0.3	U	
Radium-226	pCi/L	0.791	44%	3	0	8	18	0.791	J	+/-0.51	0.3	U	+/-0.1	0.335	J	+/-0.29	[illegible]	U	+/-0.1
Radon-222	pCi/L	341	78%	300	1	14	18	132.3	J	+/-43.5	118		+/-39.7	102	U	+/-57.9	232		+/-41.4
Thorium-227	pCi/L	1.06	11%		0	1	9	0.628	U	+/-0.33				0.415	U	+/-0.27			
Thorium-228	pCi/L	0	0%		0	0	9	0.065	UJ	+/-0.05				0.0465	U	+/-0.03			
Thorium-230	pCi/L	0.6	17%		0	3	18	0.0398	U	+/-0.03	0.3	UJ	+/-0.2	0.0166	U	+/-0.01	0.6	U	+/-0.3
Thorium-232	pCi/L	0.173	22%		0	4	18	0.0518	J	+/-0.03	0.2	U	+/-0.1	0.0083	U	+/-0.01	[illegible]		+/-0.1
Tritium	pCi/L	228	18%		0	3	17	455	U	+/-0.25	23.4	J	+/-184	424	U	+/-0.24	308	U	+/-181
Uranium-234	pCi/L	1.8	89%	124847	0	16	18	0.383	J	+/-0.23	0.5		+/-0.3	1.07		+/-0.43	[illegible]		+/-0.3
Uranium-235	pCi/L	0.1	22%	43.4216	0	4	18	0.183	U	+/-0.09	0.2	U	+/-0.1	0.233	U	+/-0.11	0.2	U	+/-0.1
Uranium-238	pCi/L	1.3	78%	6.66933	0	14	18	0.238	U	+/-0.15	0.6		+/-0.3	0.32	U	+/-0.24	[illegible]		+/-0.1

TABLE J-3
BACKGROUND RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								OB-GROUNDS		
LOCATION ID								MW34/35		
MATRIX								GROUND WATER		
SAMPLE ID								122226		
DEPTH TO TOP OF SAMPLE								0		
DEPTH TO BOTTOM OF SAMPLE								0		
SAMPLE DATE								12/2/1999		
QC CODE								SA		
STUDY ID			FREQUENCY	RAD	NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1	
SAMPLE ROUND			OF	GUIDE-	ABOVE	OF	OF	2		
PARAMETER	UNIT	MAXIMUM	DETECTION	LINE	RAD	DETECT	ANALYSES			
Bismuth-214	pCi/L	37.8	50%		0	9	18	8.49	U	+/-10.5
Cesium-137	pCi/L	0	0%		0	0	18	3.07	U	+/-2.05
Cobalt-57	pCi/L	2.62	17%		0	3	18	3.08	U	+/-1.88
Cobalt-60	pCi/L	0	0%		0	0	18	3.64	U	+/-1.86
Gross Alpha	pCi/L	5.7	44%	15	0	8	18	4.78	U	+/-2.39
Gross Beta	pCi/L	12.6	89%	1000	0	16	18	6.47	J	+/-2.71
Lead-210	pCi/L	0	0%		0	0	9	2.81	U	+/-1.08
Lead-211	pCi/L	0	0%		0	0	18	96.4	U	+/-55.3
Lead-214	pCi/L	27.3	50%		0	9	18	8.12	U	+/-6.42
Plutonium-238	pCi/L	0	0%		0	0	9	0.00772	U	+/-0
Plutonium-239/240	pCi/L	0	0%		0	0	18	0.00772	U	+/-0
Radium-223	pCi/L	1.06	33%		0	6	18	0.355	U	+/-0.21
Radium-226	pCi/L	0.791	44%	3	0	8	18	0.674	U	+/-0.28
Radon-222	pCi/L	341	78%	300	1	14	18	217.8	J	+/-46.9
Thorium-227	pCi/L	1.06	11%		0	1	9	0.355	U	+/-0.21
Thorium-228	pCi/L	0	0%		0	0	9	0.0389	UJ	+/-0.05
Thorium-230	pCi/L	0.6	17%		0	3	18	0.186	J	+/-0.05
Thorium-232	pCi/L	0.173	22%		0	4	18	0.173	J	+/-0.05
Tritium	pCi/L	228	18%		0	3	17	454	U	+/-0.25
Uranium-234	pCi/L	1.8	89%	124847	0	16	18	0.512	J	+/-0.26
Uranium-235	pCi/L	0.1	22%	43.4216	0	4	18	0.159	U	+/-0.06
Uranium-238	pCi/L	1.3	78%	6.66933	0	14	18	0.196	J	+/-0.16

TABLE J-4
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			
LOCATION ID								MW12-27			MW12A-3			MW12A-3			MW12A-3			MW12B-1			
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			
SAMPLE ID								122230			MW12A-3			122011			122249			MW12B-1			
DEPTH TO TOP OF SAMPLE								0			3.4			13			12			5.3			
DEPTH TO BOTTOM OF SAMPLE								0			14			13			12			17			
SAMPLE DATE								12/3/1999			7/20/1994			4/13/1999			12/8/1999			7/19/1994			
QC CODE								SA			SA			SA			SA			SA			
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			ESI			RI Phase 1 Step 1			RI Phase 1 Step 1			ESI			
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	2			0			1			2			0			
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES	N															
Bismuth-214	pCi/L	75	40%		0	4	10	11.5	U	+/-6.08				35.1	J	+/-11.9	6.6	UJ	+/-6.15	75		+/-34	
Cesium-137	pCi/L	0	0%		0	0	9	5.09	U	+/-2.82				1.4	U		2.38	UJ	+/-1.29				
Cobalt-57	pCi/L	0	0%		0	0	9	4.35	U	+/-2.55				0.8	UJ		2.24	UJ	+/-1.26				
Cobalt-60	pCi/L	0	0%		0	0	9	4.69	U	+/-2.67				2.4	U		2.97	UJ	+/-1.49				
Gross Alpha	pCi/L	50	67%	15	1	8	12	7.31	J	+/-2.06				3.2		+/-2	2.02	UJ	+/-0.96	50		+/-26	
Gross Beta	pCi/L	100	77%	1000	0	10	13	8.4	J	+/-1.46	10		+/-5	4.4		+/-1.7	2.16	UJ	+/-1.12	100		+/-30	
Lead-210	pCi/L	0	0%		0	0	5	2.83	U	+/-1.27							1.95	U	+/-0.86				
Lead-211	pCi/L	774	11%		0	1	9	131	U	+/-73.3				774		+/-494	67.4	UJ	+/-41.6				
Lead-214	pCi/L	45	40%		0	4	10	11.8	U	+/-6.3				27.5	J	+/-9.5	6.3	UJ	+/-5.58	45		+/-11	
Plutonium-239/240	pCi/L	0	0%		0	0	9	0.00428	U	+/-0				0.1	U	+/-0.1	0.00423	U	+/-0				
Radium-223	pCi/L	0.2	44%		0	4	9	0.00428	U	+/-0				0.2			0.383	U	+/-0.2				
Radium-226	pCi/L	0.2	44%	3	0	4	9	0.91	U					0.2		+/-0.1	0.71	U	+/-0.47				
Radon-222	pCi/L	319	56%	300	2	5	9	0.741	U	+/-0.43				56.2		+/-30.7	101	U	+/-55.5				
Thorium-227	pCi/L	0	0%		0	0	5	63.2	U	+/-0.04							0.383	U	+/-0.2				
Thorium-228	pCi/L	0	0%		0	0	5	0.91	U	+/-0.49							0.0805	U	+/-0.05				
Thorium-230	pCi/L	0	0%		0	0	9	0.363	U	+/-0.15				0.3	UJ	+/-0.2	0.031	U	+/-0.01				
Thorium-232	pCi/L	0	0%		0	0	9	0.155	U	+/-0.09				0.2	U	+/-0.1	0.0177	U	+/-0.01				
Tritium	pCi/L	234	11%		0	1	9	0.145	U	+/-0.04				234		+/-193	414	U	+/-0.25				
Uranium-234	pCi/L	2.27	89%	124846.8	0	8	9	417	U	+/-0.23				0.6		+/-0.3	0.347	J	+/-0.23				
Uranium-235	pCi/L	1.57	56%	43.42162	0	5	9	1.57		+/-0.33				0.1		+/-0.1	0.224	U	+/-0.07				
Uranium-238	pCi/L	2.11	89%	6.669334	0	8	9	0.101	U	+/-0.06				0.3		+/-0.2	0.266	J	+/-0.2				
								1.24		+/-0.28													

TABLE J-4
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12B-1			MW12B-1			MW12B-2			MW12B-2		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122021			122240			MW12B-2			122021		
DEPTH TO TOP OF SAMPLE								17			17			3.9			[illegible]		
DEPTH TO BOTTOM OF SAMPLE								17			17			12.9			[illegible]		
SAMPLE DATE								4/21/1999			12/6/1999			7/19/1994			4/21/1999		
QC CODE								SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			ESI			RI Phase 1 Step 1		
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	1			2			0			1		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES												
Bismuth-214	pCi/L	75	40%		0	4	10	22.4	UJ	+/-9.9	12.7	UJ	+/-10.8				[illegible]		+/-6.5
Cesium-137	pCi/L	0	0%		0	0	9	1.6	UJ		4.83	UJ	+/-2.65				[illegible]	U	
Cobalt-57	pCi/L	0	0%		0	0	9	0.8	UJ		4.07	UJ	+/-2.41				[illegible]	U	
Cobalt-60	pCi/L	0	0%		0	0	9	1.1	U		4.73	UJ	+/-2.9				[illegible]	U	
Gross Alpha	pCi/L	50	67%	15	1	8	12	6.3	U	+/-3.5	3	J	+/-0.97	6	+/-2[illegible]		[illegible]	U	+/-3.1
Gross Beta	pCi/L	100	77%	1000	0	10	13	6	U	+/-3.4	2.27	J	+/-1.25	100	+/-2[illegible]		[illegible]		+/-[illegible]
Lead-210	pCi/L	0	0%		0	0	5				2.12	U	+/-1						
Lead-211	pCi/L	774	11%		0	1	9	32.2	U		130	UJ	+/-74.2				[illegible]	U	
Lead-214	pCi/L	45	40%		0	4	10	15.7	UJ	+/-4.6	11	UJ	+/-11.8				[illegible]		+/-[illegible]
Plutonium-239/240	pCi/L	0	0%		0	0	9	0.2	U	+/-0.1	0.0119	U	+/-0				[illegible]		+/-[illegible].2
Radium-223	pCi/L	0.2	44%		0	4	9	0.1			0.323	U	+/-0.22				[illegible]		
Radium-226	pCi/L	0.2	44%	3	0	4	9	0.1		+/-0.1	0.508	U	+/-0.35				[illegible]		+/-[illegible]
Radon-222	pCi/L	319	56%	300	2	5	9	98.2	U	+/-28.2	69.1	J	+/-0.03				[illegible]		+/-[illegible].1
Thorium-227	pCi/L	0	0%		0	0	5				0.323	U	+/-0.22						
Thorium-228	pCi/L	0	0%		0	0	5				0.0456	U	+/-0.03						
Thorium-230	pCi/L	0	0%		0	0	9	0.4	U	+/-0.3	0.0248	U	+/-0.02				[illegible]	U	+/-[illegible].2
Thorium-232	pCi/L	0	0%		0	0	9	0.3	U	+/-0.1	0.0198	U	+/-0.01				0.2	U	+/-0.1
Tritium	pCi/L	234	11%		0	1	9	311	U	+/-177	422	U	+/-0.24				[illegible]	U	+/-180
Uranium-234	pCi/L	2.27	89%	124846.8	0	8	9	1.2		+/-0.5	0.823	J	+/-0.33				1.[illegible]		+/-0.4
Uranium-235	pCi/L	1.57	56%	43.42162	0	5	9	0.1		+/-0.1	0.158	U	+/-0.11				0.2		+/-0.2
Uranium-238	pCi/L	2.11	89%	6.669334	0	8	9	0.6		+/-0.3	0.591	J	+/-0.28				0.7		+/-0.3

TABLE J-4
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12B-2			MW12B-3			MW12B-3			MW12B-3		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122239			MW12B-3			122030			122238		
DEPTH TO TOP OF SAMPLE								14			4.6			14			10		
DEPTH TO BOTTOM OF SAMPLE								14			13.5			14			10		
SAMPLE DATE								12/6/1999			7/19/1994			4/23/1999			12/6/1999		
QC CODE								SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			ESI			RI Phase 1 Step 1			RI Phase 1 Step 1		
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	2			0			1			2		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES												
Bismuth-214	pCi/L	75	40%		0	4	10	10	UJ	+/-10.2				20.1	J	+/-6.3	7.5	UJ	+/-7.1
Cesium-137	pCi/L	0	0%		0	0	9	3.98	UJ	+/-2.13				1.3	U		3.54	UJ	+/-2.34
Cobalt-57	pCi/L	0	0%		0	0	9	2.27	UJ	+/-1.37				0.3	U		2.69	UJ	+/-1.57
Cobalt-60	pCi/L	0	0%		0	0	9	5.06	UJ	+/-2.54				1.5	U		4.42	UJ	+/-2.12
Gross Alpha	pCi/L	50	67%	15	1	8	12	3.58	J	+/-1.08	10		+/-24	0.9		+/-2.9	2.88	UJ	+/-1.45
Gross Beta	pCi/L	100	77%	1000	0	10	13	4.01	J	+/-1.28	94		+/-22	2.3		+/-2.5	2.18	UJ	+/-1.1
Lead-210	pCi/L	0	0%		0	0	5	2.09	U	+/-0.75							3.9	U	+/-1.61
Lead-211	pCi/L	774	11%		0	1	9	84.6	UJ	+/-49				22.2	U		87.9	UJ	+/-48.1
Lead-214	pCi/L	45	40%		0	4	10	8.69	UJ	+/-4.57				13.4		+/-3.8	7.69	UJ	+/-4.08
Plutonium-239/240	pCi/L	0	0%		0	0	9	0.00481	U	+/-0				0.1	U	+/-0.2	0.00269	U	+/-0
Radium-223	pCi/L	0.2	44%		0	4	9	0.396	U	+/-0.23				0.2			0.418	U	+/-0.24
Radium-226	pCi/L	0.2	44%	3	0	4	9	0.724	U	+/-0.4				0.2		+/-0.1	0.7	U	+/-0.36
Radon-222	pCi/L	319	56%	300	2	5	9	54	U	+/-0.03				**319**		+/-45.4	**311**	J	+/-0.04
Thorium-227	pCi/L	0	0%		0	0	5	0.396	U	+/-0.23							0.418	U	+/-0.24
Thorium-228	pCi/L	0	0%		0	0	5	0.0484	U	+/-0.02							0.0697	U	+/-0.04
Thorium-230	pCi/L	0	0%		0	0	9	0.0326	U	+/-0.02				0.3	U	+/-0.3	0.0503	U	+/-0.03
Thorium-232	pCi/L	0	0%		0	0	9	0.0233	U	+/-0.01				0.3	U	+/-0.1	0.00794	U	+/-0.01
Tritium	pCi/L	234	11%		0	1	9	418	U	+/-0.24				311	U	+/-183	414	U	+/-0.23
Uranium-234	pCi/L	2.27	89%	124846.8	0	8	9	1.02		+/-0.39				0.6		+/-0.3	2.27		+/-0.63
Uranium-235	pCi/L	1.57	56%	43.42162	0	5	9	0.169	U	+/-0.07				0.1		+/-0.1	0.106	U	+/-0.1
Uranium-238	pCi/L	2.11	89%	6.669334	0	8	9	0.808	J	+/-0.34				0.6		+/-0.3	2.11		+/-0.6

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12			
LOCATION ID								DW12-815			DW12-815			MW12-10			MW12-10			MW12-11			
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			
SAMPLE ID								122018			122255			122040			122261			122038			
DEPTH TO TOP OF SAMPLE								20			20			13.5			15			13			
DEPTH TO BOTTOM OF SAMPLE								20			20			13.5			15			13			
SAMPLE DATE								19-Apr-99			14-Dec-99			06-May-99			15-Dec-99			25-Apr-99			
QC CODE								SA			SA			SA			SA			SA			
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	1			2			1			2			1			
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES																
Bismuth-214	pCi/L	120	29%		0	22	77	35.2	J	+/-11.7	7.54	UJ	+/-6.82	34.6	U	+/-7.2	7.92	U	+/-4	24.9	J	+/-8	
Cesium-137	pCi/L	9.4	5%		0	4	77	1.2	UJ		3.53	U	+/-1.9	9.4		+/-4.4	5.13	U	+/-2.5	0.9	U		
Cobalt-57	pCi/L	2.6	4%		0	3	77	0.8	UJ		2.98	U	+/-1.89	1	U		2.73	UJ	+/-1.57	0.5	U		
Cobalt-60	pCi/L	11.4	9%		0	7	77	7.3		+/-3.3	3.36	U	+/-1.84	1	U		3.31	UJ	+/-1.77	1.3	U		
Gross Alpha	pCi/L	18	61%	15	1	48	79	2.1	U	+/-1.3	2.04	U	+/-1.06	2.7		+/-1.4	2.26	UJ	+/-1.38	1.1	U	+/-0.7	
Gross Beta	pCi/L	129	78%	1000	0	62	79	7.3		+/-1.3	6.47	J	+/-1.38	2		+/-1.6	5.32	J	+/-1.32	1.9		+/-0.6	
Lead-210	pCi/L	4.67	13%		0	5	39				5.87	U	+/-2.31				5.56	U	+/-2.32				
Lead-211	pCi/L	478	4%		0	3	77	32.2	U		87.2	U	+/-52.5	20.3	U		79.5	U	+/-53.1	19	U		
Lead-214	pCi/L	33.3	29%		0	22	77	31	J	+/-6.7	7.64	U	+/-4.16	35.7	UJ	+/-7.3	7.79	UJ	+/-7.76	19.8		+/-6	
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.4	UJ	+/-0.4	0.00813	U	+/-0	0.1	U	+/-0.1	0.00584	U	+/-0	0.2	U	+/-0.1	
Radium-223	pCi/L	0.7	40%		0	31	77		U		0.576	U	+/-0.33	0.3			0.622	U	+/-0.32	0.1			
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.3	U	+/-0.1	0.925	J	+/-0.68	0.3		+/-0.1	0.94	U	+/-0.57	0.1		+/-0.1	
Radon-222	pCi/L	746	61%	300	16	47	77	140		+/-28.5	43.2	U	+/-25.5	210	U	+/-28.6	94.1	J	+/-50.3	**618**		+/-39.9	
Thorium-227	pCi/L	0	0%		0	0	39				0.576	U	+/-0.33				0.622	U	+/-0.32				
Thorium-228	pCi/L	0.28	5%		0	2	39				0.197	U	+/-0.11				0.28	J	+/-0.1				
Thorium-230	pCi/L	0.4	14%		0	11	77	0.2		+/-0.2	0.0805	UJ	+/-0.03	0.2	U	+/-0.1	0.0458	J	+/-0.04	0.2	U	+/-0.2	
Thorium-232	pCi/L	0.1	12%		0	9	77	0.1	U	+/-0.1	0.0625	U	+/-0.02	0.2	U	+/-0.1	0.0189	U	+/-0	0.2	U	+/-0.1	
Tritium	pCi/L	74.8	8%		0	6	75	308	U	+/-182	414	U	+/-0.24	67.7		+/-158	399	U	+/-0.22	49.9		+/-187	
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	0.6		+/-0.3	0.57	J	+/-0.2	1.9		+/-0.6	1.15	J	+/-0.29	0.1		+/-0.1	
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.1		+/-0.1	0.11	UJ	+/-0.01	0.2	U	+/-0.1	0.112	UJ	+/-0.09	0.2	U	+/-0.1	
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	0.1		+/-0.1	0.332	J	+/-0.15	1.3		+/-0.5	0.916	J	+/-0.25	0.1		+/-0.2	

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-11			MW12-12			MW12-12			MW12-13			MW12-13		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122259			122041			122262			122047			122260		
DEPTH TO TOP OF SAMPLE								13			13.5			12			13.5			13		
DEPTH TO BOTTOM OF SAMPLE								13			13.5			12			13.5			13		
SAMPLE DATE								15-Dec-99			04-May-99			16-Dec-99			06-May-99			15-Dec-99		
QC CODE								SA			SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	2			1			2			1			2		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	5.63	U	+/-6.04	20.6	U	+/-6.9	9.34	U	+/-8.28	120		+/-26.4	[illegible]	J	+/-12
Cesium-137	pCi/L	9.4	5%		0	4	77	2.66	U	+/-3.09	0.8	U		3.8	U	+/-2	6	U		[illegible]	U	+/-2.15
Cobalt-57	pCi/L	2.6	4%		0	3	77	2.71	U	+/-1.53	0.3	U		2.9	UJ	+/-1.71	0.8	U		2.42	UJ	+/-1.42
Cobalt-60	pCi/L	11.4	9%		0	7	77	3.65	U	+/-1.98	1.6	U		3.89	UJ	+/-2.11	4.6	U		[illegible]	UJ	+/-2.2
Gross Alpha	pCi/L	18	61%	15	1	48	79	3.57	J	+/-0.7	1.4		+/-1.7	1.89	UJ	+/-1.12	0.9		+/-1.2	[illegible]		+/-1.11
Gross Beta	pCi/L	129	78%	1000	0	62	79	2.93	J	+/-0.63	0.6	U	+/-2.1	4.67	J	+/-1.3	2.2		+/-1.4	[illegible]	J	+/-1.3
Lead-210	pCi/L	4.67	13%		0	5	39	2.6	U	+/-1.19				6.13	U	+/-2.39				[illegible]		+/-2.5
Lead-211	pCi/L	478	4%		0	3	77	78	U	+/-46.3	14	U		89.2	U	+/-52	478		+/-241	86.9	J	+/-35.2
Lead-214	pCi/L	33.3	29%		0	22	77	7.95	UJ	+/-4.17	27.2	UJ	+/-4.1	9.08	UJ	+/-6.93	101	UJ	+/-20.4	[illegible]	UJ	+/-4.8
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.00673	U	+/-0	0.1	UJ	+/-0.1	0.00819	U	+/-0	0.2	U	+/-0.2	[illegible]	U	+/-2
Radium-223	pCi/L	0.7	40%		0	31	77	0.426	U	+/-0.28	0.4			0.485	U	+/-0.25	0.2			0.42[illegible]	U	+/-0.22
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.422	U	+/-0.3	0.4		+/-0.1	0.894	U	+/-0.51	0.2		+/-0.1	[illegible]	U	+/-0.6
Radon-222	pCi/L	746	61%	300	16	47	77	244.4	J	+/-66.1	746		+/-36.2	379.1	J	+/-60.6	203	U	+/-31.5	150.5	J	+/-61.1
Thorium-227	pCi/L	0	0%		0	0	39	0.426	U	+/-0.28				0.485	U	+/-0.25				0.42[illegible]	U	+/-0.22
Thorium-228	pCi/L	0.28	5%		0	2	39	0.0809	U	+/-0.04				0.0981	U	+/-0.07				[illegible]	U	+/-0.07
Thorium-230	pCi/L	0.4	14%		0	11	77	0.0263	UJ	+/-0.02	0.3	U	+/-0.3	0.0474	UJ	+/-0.02	0.3	UJ	+/-0.2	0.0265	UJ	+/-0.03
Thorium-232	pCi/L	0.1	12%		0	9	77	0.033	U	+/-0.01	0.2	U	+/-0.1	0.0166	U	+/-0.02	0.2	U	+/-0.1	0.0451	U	+/-0.03
Tritium	pCi/L	74.8	8%		0	6	75	515	U	+/-0.27	113	U	+/-160	417	U	+/-0.23	45.1	U	+/-157	409	U	+/-0.24
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	1.2		+/-0.4	0.8	U	+/-0.4	0.254	J	+/-0.13	0.7	UJ	+/-0.3	1.68	J	+/-0.29
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.0897	U	+/-0.08	0.1		+/-0.1	0.0945	UJ	+/-0.04	0.1	J	+/-0.1	0.0397	UJ	+/-0.06
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	1.04		+/-0.37	0.5		+/-0.3	0.235	J	+/-0.12	0.7	J	+/-0.3	1.91	J	+/-0.42

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-14			MW12-14			MW12-15			MW12-15			MW12-16		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122049			122273			122023			122271			122015		
DEPTH TO TOP OF SAMPLE								14.5			13			14			14			14		
DEPTH TO BOTTOM OF SAMPLE								14.5			13			14			14			14		
SAMPLE DATE								06-May-99			18-Dec-99			21-Apr-99			18-Dec-99			19-Apr-99		
QC CODE								SA			SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	1			2			1			2			1		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	27.6	U	+/-8.2	7.31	U	+/-5.81	25.2	UJ	+/-9.4	7.77	U	+/-7.26	24.7	J	+/-6 2
Cesium-137	pCi/L	9.4	5%		0	4	77	1.2	U		3.47	U	+/-1.93	1.5	UJ		3.04	U	+/-1.68	1.9	UJ	
Cobalt-57	pCi/L	2.6	4%		0	3	77	0.5	U		2.73	UJ	+/-1 58	0.6	UJ		2.96	UJ	+/-1.83	0.6	UJ	
Cobalt-60	pCi/L	11.4	9%		0	7	77	0.7	U		3.41	UJ	+/-1.84	1.4	U		4.43	UJ	+/-2.28	7.8		+/-4 6
Gross Alpha	pCi/L	18	61%	15	1	48	79	2.7		+/-1.9	2.11	UJ	+/-1.31	4.2	U	+/-2.4	1.37	J	+/-0.65	4		+/-2.6
Gross Beta	pCi/L	129	78%	1000	0	62	79	6.5		+/-2.2	2 24	UJ	+/-1.08	3.4	U	+/-2.1	1.65	J	+/-0.67	4.2		+/-2 3
Lead-210	pCi/L	4.67	13%		0	5	39				2 29	U	+/-0 98				2.51	U	+/-1			
Lead-211	pCi/L	478	4%		0	3	77	17.6	U		82.5	U	+/-45.2	28.7	U		95.8	U	+/-56	52 3		+/-44 5
Lead-214	pCi/L	33.3	29%		0	22	77	23.8	UJ	+/-6.1	6.74	UJ	+/-3.93	23.1	UJ	+/-6 9	7.68	UJ	+/-5.85	28.9	J	+/-8
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.1	U	+/-0.1	0.0026	U	+/-0	0 2	UJ	+/-0.2	0.00261	U	+/-0	0.2	U	+/-0 2
Radium-223	pCi/L	0.7	40%		0	31	77	0.4			0.45	U	+/-0.27	0.1			0.496	U	+/-0.26	0.1		
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.4		+/-0.1	0.899	U	+/-0.49	0 1		+/-0.1	0.619	U	+/-0.4	0 1		+/-0 1
Radon-222	pCi/L	746	61%	300	16	47	77	63	U	+/-28.9	59.7	U	+/-35.4	47 3	U	+/-27	59	U	+/-33.9	**542**		+/-34 4
Thorium-227	pCi/L	0	0%		0	0	39				0.45	U	+/-0 27				0.496	U	+/-0 26			
Thorium-228	pCi/L	0.28	5%		0	2	39				0.163	U	+/-0.09				0.145	U	+/-0.09			
Thorium-230	pCi/L	0.4	14%		0	11	77	0.4	U	+/-0.3	0.065	UJ	+/-0.04	0 4	U	+/-0 2	0.075	UJ	+/-0.03	0.3	J	+/-0.2
Thorium-232	pCi/L	0.1	12%		0	9	77	0.2	U	+/-0.1	0.0382	U	+/-0.02	0 2	U	+/-0 1	0.019	U	+/-0	0 2	U	+/-0 1
Tritium	pCi/L	74.8	8%		0	6	75	45.1		+/-157	410	U	+/-0.24	311	U	+/-178	408	U	+/-0.23	308	U	+/-183
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	1.1		+/-0.5	0.718	J	+/-0.22	0.7	U	+/-0.4	0.657	J	+/-0.22	1.1	J	+/-0 4
Uranium-235	pCi/L	0 4	35%	43.42162	0	27	77	0.2		+/-0.2	0.105	UJ	+/-0.05	0.3	U	+/-0 1	0.0494	UJ	+/-0.03	0.2	U	+/-0.1
Uranium-238	pCi/L	3 3	94%	6.669334	0	72	77	0 5		+/-0.3	0.493	J	+/-0.19	0 4	U	+/-0.3	0.337	J	+/-0.16	0 5	J	+/-0 3

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY POMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-16			MW12-17			MW12-17			MW12-18			MW12-18		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122267			122016			122242			122017			122019		
DEPTH TO TOP OF SAMPLE								14			18			15			12.5			12.5		
DEPTH TO BOTTOM OF SAMPLE								14			18			15			12.5			12.5		
SAMPLE DATE								17-Dec-99			19-Apr-99			07-Dec-99			20-Apr-99			20-Apr-99		
QC CODE								SA			SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	2			1			2			1			1		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	10.9	U	+/-6.73	23.6	J	+/-7.5	7.53	UJ	+/-6.64	2	UJ		89.6	UJ	+/-9.9
Cesium-137	pCi/L	9.4	5%		0	4	77	4.1	U	+/-2.29	1.8	UJ		3.12	UJ	+/-1.73	1.2	UJ		[illegible]	UJ	
Cobalt-57	pCi/L	2.6	4%		0	3	77	2.26	U	+/-1.41	1.1	UJ		3.19	UJ	+/-1.9	0.9	UJ		[illegible]	[illegible]	
Cobalt-60	pCi/L	11.4	9%		0	7	77	5.04	U	+/-2.48	1.5	U		3.65	UJ	+/-1.79	1.1	U		[illegible]	[illegible]	
Gross Alpha	pCi/L	18	61%	15	1	48	79	1.92	J	+/-0.87	4.4		+/-1.9	2.1	U	+/-1.09	9.7	U	+/-5.3	[illegible]	[illegible]	+/-5.8
Gross Beta	pCi/L	129	78%	1000	0	62	79	2.02	U	+/-1.22	5.4		+/-1.7	2.3	J	+/-1.14	0.4	U	+/-4.6	[illegible]	[illegible]	+/-5.3
Lead-210	pCi/L	4.67	13%		0	5	39	2.72	U	+/-1.07				2.72	U	+/-1.1						
Lead-211	pCi/L	478	4%		0	3	77	92.1	U	+/-61.3	28.2	U		88.8	UJ	+/-51.4	24.1	U		32.4	J	
Lead-214	pCi/L	33.3	29%		0	22	77	9.08	UJ	+/-6.82	24.6	J	+/-7.7	7.31	UJ	+/-4.89	16.6	UJ	+/-[illegible]	[illegible]	[illegible]	+/-[illegible]
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.00785	U	+/-0	0.1	U	+/-0.1	0.00927	UJ	+/-0	0.2	U	+/-0.2	[illegible]	[illegible]	+/-0.[illegible]
Radium-223	pCi/L	0.7	40%		0	31	77	0.49	U	+/-0.28	0.1			0.435	U	+/-0.25	0.2	J		0.4	J	
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.432	U	+/-0.32	0.1		+/-0.1	0.498	U	+/-0.3	0.2	J	+/-0.1	[illegible]	[illegible]	+/-0.1
Radon-222	pCi/L	746	61%	300	16	47	77	374.4	J	+/-54.5	130		+/-27.5	98.3	U	+/-56.6	67.1	U	+/-30.2	[illegible]	[illegible]	+/-30.[illegible]
Thorium-227	pCi/L	0	0%		0	0	39	0.49	U	+/-0.28				0.435	U	+/-0.25						
Thorium-228	pCi/L	0.28	5%		0	2	39	0.095	U	+/-0.05				0.0448	U	+/-0.03						
Thorium-230	pCi/L	0.4	14%		0	11	77	0.0395	J	+/-0.03	0.2		+/-0.2	0.0215	U	+/-0.02	0.4	U	+/-0.3	[illegible]	[illegible]	+/-0.3
Thorium-232	pCi/L	0.1	12%		0	9	77	0.0132	U	+/-0.01	0.2	U	+/-0.1	0.0215	U	+/-0.01	0.2	U	+/-0.1	[illegible]	[illegible]	+/-0.1
Tritium	pCi/L	74.8	8%		0	6	75	522	U	+/-0.28	308	U	+/-177	423	U	+/-0.24	311	U	+/-178	[illegible]	[illegible]	+/-185
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	0.505	J	+/-0.27	0.8		+/-0.4	0.859	J	+/-0.36	0.9	U	+/-0.4	[illegible]	[illegible]	+/-0.5
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.0972	U	+/-0.06	0.1	U	+/-0.1	0.0992	U	+/-0	0.1	J	+/-0.1	[illegible]	[illegible]	+/-0.1
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	0.591	J	+/-0.29	0.8		+/-0.3	0.578	J	+/-0.29	0.8		+/-0.4	0.8		+/-0.4

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-18			MW12-19			MW12-19			MW12-20			MW12-20		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122237			122005			122235			122006			122233		
DEPTH TO TOP OF SAMPLE								12.5			11			11			14			12		
DEPTH TO BOTTOM OF SAMPLE								12.5			11			11			14			12		
SAMPLE DATE								06-Dec-99			12-Apr-99			05-Dec-99			12-Apr-99			05-Dec-99		
QC CODE								SA			SA			SA			SA			DU		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	2			1			2			1			2		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	8.47	UJ	+/-7.25	35.2	J	+/-9.9	8.59	U	+/-7.13	16.8	J	+/-5.1	8.52	U	+/-9.47
Cesium-137	pCi/L	9.4	5%		0	4	77	3.39	UJ	+/-1.84	1.2	U		3.44	U	+/-1.81	2	U		3.32	U	+/-3.37
Cobalt-57	pCi/L	2.6	4%		0	3	77	2.56	UJ	+/-2.4	2.6	J	+/-2.3	2.96	U	+/-1.62	0.7	UJ		2.93	U	+/-1.62
Cobalt-60	pCi/L	11.4	9%		0	7	77	3.33	UJ	+/-1.7	1.6	U		3.91	U	+/-1.84	1.2	U		3.88	U	+/-1.91
Gross Alpha	pCi/L	18	61%	15	1	48	79	3.23	J	+/-1.83	0.7		+/-1.8	2.24	U	+/-1.18	5.8	U	+/-3.3	5.05	U	+/-2.33
Gross Beta	pCi/L	129	78%	1000	0	62	79	5.55	J	+/-2.48	4.8		+/-1.4	2.37	U	+/-1.17	6.1		+/-3.1	4.39	U	+/-2.14
Lead-210	pCi/L	4.67	13%		0	5	39	1.73	U	+/-0.94				2.75	U	+/-1.19				2.99	U	+/-1.27
Lead-211	pCi/L	478	4%		0	3	77	82.6	UJ	+/-45.4	15.7	U		92.5	U	+/-54.2	33.9	U		91.1	U	+/-52.9
Lead-214	pCi/L	33.3	29%		0	22	77	7.83	UJ	+/-6.59	33.3	J	+/-9.6	7.95	U	+/-4.31	17.7	J	+/-4.8	8.02	U	+/-4.25
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.0124	U	+/-0	0.2	U	+/-0.2	0.0037	U	+/-0	0.1	U	+/-0.1	0.0114	U	+/-0
Radium-223	pCi/L	0.7	40%		0	31	77	0.368	U	+/-0.23	0.3	U		0.982	U		0.6			1.1	U	
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.702	U	+/-0.4	0.3	U	+/-0.1	0.749	J	+/-0.48	0.6		+/-0.2	0.735	U	+/-0.44
Radon-222	pCi/L	746	61%	300	16	47	77	54.5	U	+/-0.03	159		+/-36.6	105	J	+/-0.04	262		+/-38.5	134	J	+/-0.04
Thorium-227	pCi/L	0	0%		0	0	39	0.368	U	+/-0.23				0.982	U	+/-0.4				1.1	U	+/-0.48
Thorium-228	pCi/L	0.28	5%		0	2	39	0.08	U	+/-0.05				0.176	U	+/-0.09				0.235	U	+/-0.11
Thorium-230	pCi/L	0.4	14%		0	11	77	0.0307	U	+/-0.02	0.4	UJ	+/-0.3	0.132	U	+/-0.07	0.1	UJ	+/-0.1	0.117	U	+/-0.06
Thorium-232	pCi/L	0.1	12%		0	9	77	0.0175	U	+/-0.01	0.2	U	+/-0.1	0.0373	J	+/-0.04	0.2	U	+/-0.1	0.096	U	+/-0.03
Tritium	pCi/L	74.8	8%		0	6	75				308	UJ	+/-182	420	U	+/-0.24	308	UJ	+/-177	410	U	+/-0.24
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	1.14		+/-0.43	0.4		+/-0.3	0.191	J	+/-0.12	0.5		+/-0.3	0.174	J	+/-0.1
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.189	U	+/-0.1	0.1		+/-0.1	0.0431	U	+/-0.03	0.3	U	+/-0.1	0.143	U	+/-0.04
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	1.05		+/-0.41	0.3		+/-0.2	0.129	J	+/-0.09	0.5		+/-0.3	0.166	J	+/-0.1

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-20			MW12-20			MW12-21			MW12-21			MW12-22		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122232			122233			122004			122236			122007		
DEPTH TO TOP OF SAMPLE								12			12			11			11			12		
DEPTH TO BOTTOM OF SAMPLE								12			12			11			11			12		
SAMPLE DATE								05-Dec-99			05-Dec-99			12-Apr-99			05-Dec-99			12-Apr-99		
QC CODE								SA			DU			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
SAMPLE ROUND								2			2			1			2			1		
PARAMETER	UNIT	MAXIMUM	OF DETECTION	RAD GUIDELINE	ABOVE RAD	OF DETECTS	OF ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	7.62	U	+/-8.55	8.52	U	+/-9.47	27.4	J	+/-7	9.11	UJ	+/-5.84	22.9	J	+/-7.5
Cesium-137	pCi/L	9.4	5%		0	4	77	3.05	U	+/-1.73	3.32	U	+/-3.37	2.7	U		3.18	UJ	+/-1.75	1.9	U	
Cobalt-57	pCi/L	2.6	4%		0	3	77	2.75	U	+/-1.61	2.93	U	+/-1.62	0.9	UJ		2.8	UJ	+/-1.63	0.7	UJ	
Cobalt-60	pCi/L	11.4	9%		0	7	77	3.48	U	+/-2.01	3.88	U	+/-1.91	11.4		+/-1.6	3.99	UJ	+/-2.03	3.4		+/-3.1
Gross Alpha	pCi/L	18	61%	15	1	48	79	2.49	J	+/-1.86	5.05	U	+/-2.33	0.9		+/-1.4	1.93	J	+/-1.15	4.5	U	+/-2.3
Gross Beta	pCi/L	129	78%	1000	0	62	79	4.49	J	+/-2.16	4.39	U	+/-2.14	5.8		+/-1.3	2.56	J	+/-1.14	4.1		+/-1.9
Lead-210	pCi/L	4.67	13%		0	5	39	2.84	U	+/-1.19	2.99	U	+/-1.27				2.43	U	+/-1.02			
Lead-211	pCi/L	478	4%		0	3	77	83.9	U	+/-46	91.1	U	+/-52.9	23.2	U		82.5	UJ	+/-41.8	33.7	U	
Lead-214	pCi/L	33.3	29%		0	22	77	7.32	U	+/-7.29	8.02	U	+/-4.25	20.9	J	+/-6	7.37	UJ	+/-4.08	14.5		+/-6.3
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.00458	U	+/-0	0.0114	U	+/-0	0.1	U	+/-0.2	0.00272	U	+/-0	0.2	U	+/-0.2
Radium-223	pCi/L	0.7	40%		0	31	77	0.753	U		1.1	U		0.3	U		0.4	U	+/-0.24	0.3	U	
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.714	U	+/-0.43	0.735	U	+/-0.44	0.3	U	+/-0.1	0.713	U	+/-0.39	0.2	U	+/-0.1
Radon-222	pCi/L	746	61%	300	16	47	77	114	J	+/-0.04	134	J	+/-0.04	328		+/-44.4	149	J	+/-0.04	84.4		+/-35.6
Thorium-227	pCi/L	0	0%		0	0	39	0.753	U	+/-0.36	1.1	U	+/-0.48				0.4	U	+/-0.24			
Thorium-228	pCi/L	0.28	5%		0	2	39	0.22	U	+/-0.13	0.235	U	+/-0.11				0.054	U	+/-0.03			
Thorium-230	pCi/L	0.4	14%		0	11	77	0.154	U	+/-0.05	0.117	U	+/-0.06	0.1	UJ	+/-0.2	0.0265	U	+/-0.01	0.4	UJ	+/-0.3
Thorium-232	pCi/L	0.1	12%		0	9	77	0.121	U	+/-0.04	0.096	U	+/-0.03	0.2	U	+/-0.1	0.0093	J	+/-0.01	0.2	J	+/-0.1
Tritium	pCi/L	74.8	8%		0	6	75	419	U	+/-0.24	410	U	+/-0.24	308	UJ	+/-182	420	U	+/-0.23	203	UJ	+/-175
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	0.206	J	+/-0.12	0.174	J	+/-0.1	1		+/-0.5	1.15		+/-0.4	1.3		+/-0.5
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.125	U	+/-0.04	0.143	U	+/-0.04	0.1		+/-0.2	0.234	U	+/-0.07	0.1		+/-0.2
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	0.165	J	+/-0.11	0.166	J	+/-0.1	0.9		+/-0.4	0.702	J	+/-0.31	1		+/-0.4

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-22			MW12-23			MW12-23			MW12-24			MW12-24		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122228			122008			122229			122002			122264		
DEPTH TO TOP OF SAMPLE								12			12.3			12.3			9.5			10.5		
DEPTH TO BOTTOM OF SAMPLE								12			12.3			12.3			9.5			10.5		
SAMPLE DATE								03-Dec-99			12-Apr-99			03-Dec-99			11-Apr-99			17-Dec-99		
QC CODE								SA			SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	2			1			2			1			2		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	7.13	U	+/-3.61	38.3	J	+/-11.8	7.56	U	+/-5.93	35.8	J	+/-11	9.05	J	+/-5.45
Cesium-137	pCi/L	9.4	5%		0	4	77	5.17	U	+/-2.51	6.1		+/-4.1	3.4	U	+/-1.8	1.6	U		3.2	U	+/-3.54
Cobalt-57	pCi/L	2.6	4%		0	3	77	2.83	U	+/-1.58	2.1	J	+/-1.2	2.94	U	+/-1.65	2.6	J	+/-1.6	2.79	UJ	+/-1.57
Cobalt-60	pCi/L	11.4	9%		0	7	77	3.3	U	+/-1.69	1.9	U		3.7	U	+/-2.07	1.3	U		3.28	UJ	+/-1.78
Gross Alpha	pCi/L	18	61%	15	1	48	79	5.75	U	+/-3.36	4.2	U	+/-2.4	4.89	U	+/-2.78	1.1		+/-1.4	2.43	UJ	+/-1.43
Gross Beta	pCi/L	129	78%	1000	0	62	79	4.99	U	+/-2.5	5.7		+/-2.1	7.48	J	+/-2.57	3.1		+/-1.2	2.75	J	+/-1.17
Lead-210	pCi/L	4.67	13%		0	5	39	5.9	U	+/-2.32				2.93	U	+/-1.22				5.5	U	+/-2.22
Lead-211	pCi/L	478	4%		0	3	77	90.2	U	+/-53.2	70.3		+/-60.3	91.6	U	+/-50.3	18.5	U		73.9	U	+/-48.1
Lead-214	pCi/L	33.3	29%		0	22	77	7.91	U	+/-7.76	19.2	J	+/-3.7	8	U	+/-4.55	29.1	J	+/-6.7	7.74	UJ	+/-6.19
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.00853	U	+/-0	0.1	UJ	+/-0.1	0.00277	U	+/-0	0.2	U	+/-0.1	0.00804	U	+/-0
Radium-223	pCi/L	0.7	40%		0	31	77	0.448	U	+/-0.24	0.1	U		0.441	U	+/-0.29	0.4	U		0.382	U	+/-0.25
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.757	J	+/-0.52	0.1	U	+/-0.1	0.575	J	+/-0.45	0.4	U	+/-0.1	0.91	U	+/-0.5
Radon-222	pCi/L	746	61%	300	16	47	77	58.4	U	+/-34.7	88.1		+/-35.8	58.1	U	+/-33.5	**422**		+/-46.1	**347.3**	J	+/-53.8
Thorium-227	pCi/L	0	0%		0	0	39	0.448	U	+/-0.24				0.441	U	+/-0.29				0.382	U	+/-0.25
Thorium-228	pCi/L	0.28	5%		0	2	39	0.0743	UJ	+/-0.04				0.0624	UJ	+/-0.04				0.0788	U	+/-0.05
Thorium-230	pCi/L	0.4	14%		0	11	77	0.00773	U	+/-0.02	0.2	UJ	+/-0.2	0.0212	U	+/-0.02	0.5	UJ	+/-0.3	0.0595	UJ	+/-0.04
Thorium-232	pCi/L	0.1	12%		0	9	77	0.00773	U	+/-0.01	0.2	U	+/-0.1	0.0265	U	+/-0.01	0.2	U	+/-0.1	0.042	U	+/-0.01
Tritium	pCi/L	74.8	8%		0	6	75				46.8	J	+/-185	455	U	+/-0.25	308	UJ	+/-183	408	U	+/-0.23
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	1.38		+/-0.43	1.5		+/-0.5	1.55		+/-0.47	1.1		+/-0.4	1.11	J	+/-0.29
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.157	U	+/-0.1	0.1		+/-0.1	0.209	U	+/-0.07	0.1		+/-0.1	0.102	UJ	+/-0.05
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	1.21		+/-0.4	1.4		+/-0.5	1.06		+/-0.38	0.9		+/-0.4	0.773	J	+/-0.23

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-25			MW12-25			MW12-25			MW12-26			MW12-26		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122039			122043			122263			122003			122265		
DEPTH TO TOP OF SAMPLE								11			11			11			11			11		
DEPTH TO BOTTOM OF SAMPLE								11			11			11			11			11		
SAMPLE DATE								04-May-99			04-May-99			16-Dec-99			11-Apr-99			17-Dec-99		
QC CODE								SA			SA			SA			SA			DU		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
SAMPLE ROUND								1			1			2			1			2		
PARAMETER	UNIT	MAXIMUM	OF DETECTION	RAD GUIDELINE	ABOVE RAD	OF DETECTS	OF ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	57	U	+/-7	38.6	U	+/-8.5	7.88	U	+/-6.43	19.4	J	+/-7	9.2	U	+/-6.75
Cesium-137	pCi/L	9.4	5%		0	4	77	1	U		1.9	U		5.1	U	+/-2.48	1.2	U		3.44	U	+/-1.72
Cobalt-57	pCi/L	2.6	4%		0	3	77	0.4	U		1	U		2.24	UJ	+/-1.31	0.6	UJ		2.66	UJ	+/-1.5
Cobalt-60	pCi/L	11.4	9%		0	7	77	3.7	U	+/-1.8	0.4	U		3.67	UJ	+/-1.78	1	U		3.64	UJ	+/-1.8
Gross Alpha	pCi/L	18	61%	15	1	48	79	1.1	J	+/-2.3	0.6	J	+/-2.3	1.77	UJ	+/-1.18	0.2		+/-2.1	3	UJ	+/-1.35
Gross Beta	pCi/L	129	78%	1000	0	62	79	1.6	J	+/-2.7	4.9	UJ	+/-2.7	2.61	J	+/-1.14	4.8		+/-1.7	2.55	U	+/-1.31
Lead-210	pCi/L	4.67	13%		0	5	39							5.37	U	+/-1.95				3.14	J	+/-1.48
Lead-211	pCi/L	478	4%		0	3	77	23.9	U		20.7	U		66	U	+/-60.4	17.7	U		66.5	U	+/-49.5
Lead-214	pCi/L	33.3	29%		0	22	77	56.1	UJ	+/-6	26.4	UJ	+/-6	5.82	UJ	+/-6.82	19.7	J	+/-4.9	7.53	UJ	+/-4.1
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.3	U	+/-0.2	0.1	U	+/-0.2	0.00609	U	+/-0	0.2	UJ	+/-0.2	0.00654	U	+/-0
Radium-223	pCi/L	0.7	40%		0	31	77	0.1	J		0.3	J		0.547	U	+/-0.3	0.7			0.541	U	+/-0.25
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.1	J	+/-0.1	0.3	J	+/-0.1	0.893	U	+/-0.51	0.7		+/-0.2	0.847	U	+/-0.54
Radon-222	pCi/L	746	61%	300	16	47	77	652		+/-35.3	394		+/-37	292.1	J	+/-56.4	600		+/-43.1	[illegible]		+/-53.2
Thorium-227	pCi/L	0	0%		0	0	39							0.547	U	+/-0.3				0.54[illegible]		+/-0.25
Thorium-228	pCi/L	0.28	5%		0	2	39							0.194	U	+/-0.1				0.[illegible]	U	+/-0.1
Thorium-230	pCi/L	0.4	14%		0	11	77	0.3	U	+/-0.3	0.2	U	+/-0.2	0.0672	UJ	+/-0.04	0.3	UJ	+/-0.2	0.067[illegible]	UJ	+/-0.04
Thorium-232	pCi/L	0.1	12%		0	9	77	0.2	U	+/-0.1	0.2	U	+/-0.1	0.0587	U	+/-0.01	0.1		+/-0.1	0.0355	U	+/-0.01
Tritium	pCi/L	74.8	8%		0	6	75	45.1	U	+/-157	135	U	+/-162	413	U	+/-0.23	308	UJ	+/-182	399	U	+/-0.23
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	0.8	U	+/-0.4	0.9	U	+/-0.4	0.539	J	+/-0.2	0.7		+/-0.4	0.35[illegible]		+/-0.17
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.1		+/-0.1	0.1		+/-0.1	0.104	UJ	+/-0.01	0.2		+/-0.2	0.160	UJ	+/-0.05
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	0.5	U	+/-0.3	0.3	U	+/-0.2	0.56	J	+/-0.2	0.2		+/-0.2	[illegible]		+/-0.12

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-26			MW12-27			MW12-27			MW12-29			MW12-29		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122266			122012			122230			122014			122251		
DEPTH TO TOP OF SAMPLE								11			10.25			0			14			14		
DEPTH TO BOTTOM OF SAMPLE								11			10.25			0			14			14		
SAMPLE DATE								17-Dec-99			14-Apr-99			12/3/1999			14-Apr-99			13-Dec-99		
QC CODE								SA			SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	2			1			2			1			2		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	8.19	U	+/-6.31	4.5	UJ		11.5	U	+/-6.08	31.4	J	+/-12.3	9.28	UJ	+/-5.01
Cesium-137	pCi/L	9.4	5%		0	4	77	3.36	U	+/-1.98	0.7	U		5.09	U	+/-2.82	1.8	U		4.05	U	+/-4.87
Cobalt-57	pCi/L	2.6	4%		0	3	77	2.81	UJ	+/-1.63	0.7	UJ		4.35	U	+/-2.55	0.6	UJ		3.37	U	+/-2.04
Cobalt-60	pCi/L	11.4	9%		0	7	77	3.97	UJ	+/-1.84	1.3	U		4.69	U	+/-2.67	0.9	U		4.11	U	+/-2.18
Gross Alpha	pCi/L	18	61%	15	1	48	79	2.72	UJ	+/-1.51	2.4		+/-1.4	7.31	J	+/-2.06	3.1		+/-1.7	3.75	J	+/-1.46
Gross Beta	pCi/L	129	78%	1000	0	62	79	2.7	UJ	+/-1.33	5.3		+/-1.1	8.4	J	+/-1.46	6.3		+/-1.4	29.3	J	+/-2.32
Lead-210	pCi/L	4.67	13%		0	5	39	2.77	U	+/-1.12				2.83	U	+/-1.27				5.48	U	+/-2.59
Lead-211	pCi/L	478	4%		0	3	77	99.9	U	+/-61.7	33.9	U		131	U	+/-73.3	190	U		109	U	+/-62.1
Lead-214	pCi/L	33.3	29%		0	22	77	7.78	UJ	+/-8.33	14.6	J	+/-6.4	11.8	U	+/-6.3	26.2	J	+/-6.4	8.76	U	+/-4.79
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.00602	U	+/-0	0.2	U	+/-0.2	0.00428	U	+/-0	0.1	UJ	+/-0.2	0.00581	U	+/-0
Radium-223	pCi/L	0.7	40%		0	31	77	0.604	U	+/-0.44	0.3			0.91	U		0.2			0.541	U	+/-0.29
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.929	U	+/-0.51	0.3		+/-0.2	0.741	U	+/-0.43	0.2		+/-0.1	1.8		+/-0.77
Radon-222	pCi/L	746	61%	300	16	47	77	260.7	J	+/-51.4	99.9		+/-28.3	63.2	U	+/-0.04	95.4		+/-28.2	43.3	U	+/-26.2
Thorium-227	pCi/L	0	0%		0	0	39	0.604	U	+/-0.44				0.91	U	+/-0.49				0.541	U	+/-0.29
Thorium-228	pCi/L	0.28	5%		0	2	39	0.171	U	+/-0.09				0.363	U	+/-0.15				0.117	U	+/-0.07
Thorium-230	pCi/L	0.4	14%		0	11	77	0.101	UJ	+/-0.04	0.2	UJ	+/-0.2	0.155	U	+/-0.09	0.2	UJ	+/-0.2	0.041	UJ	+/-0.02
Thorium-232	pCi/L	0.1	12%		0	9	77	0.0505	U	+/-0.02	0.2	U	+/-0.1	0.145	U	+/-0.04	0.2	U	+/-0.1	0.041	U	+/-0.01
Tritium	pCi/L	74.8	8%		0	6	75	401	U	+/-0.23	308	U	+/-180	417	U	+/-0.23	308	U	+/-182	420	U	+/-0.23
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	0.399	J	+/-0.21	1.3		+/-0.5	1.57		+/-0.33	1.1		+/-0.4	1.3	J	+/-0.33
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.142	UJ	+/-0.05	0.2		+/-0.2	0.101	U	+/-0.06	0.1	U	+/-0.1	0.0873	UJ	+/-0.03
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	0.409	J	+/-0.21	1.6		+/-0.5	1.24		+/-0.28	1.1		+/-0.4	0.622	J	+/-0.22

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-30			MW12-30			MW12-31			MW12-31			MW12-32		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122013			122252			122032			122234			122025		
DEPTH TO TOP OF SAMPLE								13.7			14			10.5			0			11		
DEPTH TO BOTTOM OF SAMPLE								13.7			14			10.5			0			11		
SAMPLE DATE								14-Apr-99			13-Dec-99			24-Apr-99			03-Dec-99			22-Apr-99		
QC CODE								SA			SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	1			2			1			2			1		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	16	J	+/-5.2	8.38	UJ	+/-6.81	23.3	J	+/-6.3	8.35	U	+/-5.96	22.6	[illegible]	+/-[illegible]
Cesium-137	pCi/L	9.4	5%		0	4	77	1.9	U		3.24	U	+/-1.68	1.1	U		3.05	U	+/-[illegible]	1.5	UJ	
Cobalt-57	pCi/L	2.6	4%		0	3	77	1.1	UJ		2.73	U	+/-1.59	0.5	U		2.57	U	+/-[illegible]	0.3	[illegible]	
Cobalt-60	pCi/L	11.4	9%		0	7	77	0.7	U		3.66	U	+/-1.9	6.7		+/-2.7	3.61	U	+/-1.79	2.9	U	+/-[illegible]
Gross Alpha	pCi/L	18	61%	15	1	48	79	3.2		+/-1.5	6.55	J	+/-1.44	1.9		+/-1.9	12.5		+/-3.62	0.5		+/-2[illegible]
Gross Beta	pCi/L	129	78%	1000	0	62	79	7.3		+/-1.5	13.5	J	+/-1.67	8.4		+/-1.6	9.46	J	+/-2.38	1.2		+/-1[illegible]
Lead-210	pCi/L	4.67	13%		0	5	39				5.76	U	+/-2.55				2.77	U	+/-1.29			
Lead-211	pCi/L	478	4%		0	3	77	30.9	U		86.8	U	+/-47.4	18.3	U		85	U	+/-50.6	31.7	U	
Lead-214	pCi/L	33.3	29%		0	22	77	19.5	J	+/-6.9	7.52	U	+/-6.18	14.5		+/-3.7	8	U	+/-7.68	27.9	UJ	+/-6.9
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.2	U	+/-0.2	0.00215	U	+/-0	0.3	U	+/-0.2	0.0128	U	+/-0	0.3	J	+/-0.1
Radium-223	pCi/L	0.7	40%		0	31	77		U		0.96	U	+/-0.41	0.2			1.09	U		0.2		
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.3	U	+/-0.1	0.809	J	+/-0.59	0.2		+/-0.1	0.774	U	+/-0.42	0.2		+/-0.
Radon-222	pCi/L	746	61%	300	16	47	77	179		+/-29.7	42.6	U	+/-26.1	203		+/-39	67.6	J	+/-0.04	84.6		+/-32.3
Thorium-227	pCi/L	0	0%		0	0	39				0.96	U	+/-0.41				1.09	U	+/-0.52			
Thorium-228	pCi/L	0.28	5%		0	2	39				0.267	U	+/-0.14				0.193	U	+/-0.09			
Thorium-230	pCi/L	0.4	14%		0	11	77	0.2	U	+/-0.1	0.0754	UJ	+/-0.04	0.2	U	+/-0.2	0.091	U	+/-0.01	0.1	U	+/-0.[illegible]
Thorium-232	pCi/L	0.1	12%		0	9	77	0.2	U	+/-0.1	0.0864	U	+/-0.05	0.2	U	+/-0.1	0.091	U	+/-0.[illegible]	0.[illegible]	U	+/-0.2
Tritium	pCi/L	74.8	8%		0	6	75	308	U	+/-180	420	U	+/-0.25	24.9		+/-186	423	U	+/-0.[illegible]	311	J	+/-183
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	1.6	J	+/-0.5	1.4	J	+/-0.36	2.5		+/-0.7	1.65		+/-0.[illegible]	2.9		+/-[illegible]
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.2	U	+/-0.1	0.0951	UJ	+/-0.07	0.2	U	+/-0.1	0.091	U	+/-0.04	0.4		+/-0.4
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	1.1	J	+/-0.4	0.908	J	+/-0.28	1.5		+/-0.5	1.09		+/-0.27	1.4		+/-0.[illegible]

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-32			MW12-33			MW12-33			MW12-33			MW12-34		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122231			122022			122244			122243			122045		
DEPTH TO TOP OF SAMPLE								11.5			15.5			14			14			15		
DEPTH TO BOTTOM OF SAMPLE								11.5			15.5			14			14			15		
SAMPLE DATE								03-Dec-99			21-Apr-99			07-Dec-99			07-Dec-99			05-May-99		
QC CODE								SA			SA			DU			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
SAMPLE ROUND								2			1			2			2			1		
PARAMETER	UNIT	MAXIMUM	OF DETECTION	RAD GUIDELINE	ABOVE RAD	OF DETECTS	OF ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	7.9	U	+/-3.9	19.6	UJ	+/-8.7	11.4	UJ	+/-10.3	8.08	UJ	+/-4.15	21.7	U	+/-5
Cesium-137	pCi/L	9.4	5%		0	4	77	3.41	U	+/-1.92	1.3	UJ		4.64	UJ	+/-2.7	3.13	UJ	+/-1.68	1.1	U	
Cobalt-57	pCi/L	2.6	4%		0	3	77	2.91	U	+/-1.63	0.6	UJ		4.17	UJ	+/-2.36	2.81	UJ	+/-1.58	0.6	U	
Cobalt-60	pCi/L	11.4	9%		0	7	77	3.46	U	+/-1.78	1.9	U		5.48	UJ	+/-3	4.11	UJ	+/-2.2	5.4	U	+/-2.8
Gross Alpha	pCi/L	18	61%	15	1	48	79	2.66	J	+/-1.56	4.4	U	+/-2.5	1.85	U	+/-0.98	1.85	U	+/-1.02	3.9		+/-2.7
Gross Beta	pCi/L	129	78%	1000	0	62	79	2.26	J	+/-1.15	2.6		+/-2.1	2.09	U	+/-1.05	2.62	J	+/-1.13	8.3		+/-2.7
Lead-210	pCi/L	4.67	13%		0	5	39	2.51	U	+/-1.19				2.52	U	+/-1.34	2.49	U	+/-1.17			
Lead-211	pCi/L	478	4%		0	3	77	95.1	U	+/-55.4	28.3	U		130	UJ	+/-72.1	82.9	UJ	+/-46.5	20	U	
Lead-214	pCi/L	33.3	29%		0	22	77	8.59	U	+/-7.87	14.1	UJ	+/-6.1	10.3	UJ	+/-5.44	6.88	UJ	+/-7.78	23.2	UJ	+/-5.4
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.00991	U	+/-0	0.2	U	+/-0.2	0.00305	U	+/-0	0.0104	U	+/-0	0.1	U	+/-0.2
Radium-223	pCi/L	0.7	40%		0	31	77	1.26	U		0.1			0.415	U	+/-0.22	0.381	U	+/-0.2	0.4		
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.763	U	+/-0.42	0.1		+/-0.1	0.249	J	+/-0.24	0.693	U	+/-0.33	0.4		+/-0.1
Radon-222	pCi/L	746	61%	300	16	47	77	57.3	U	+/-34	57.7	U	+/-27.4	96.2	U	+/-54.2	95.8	U	+/-54.3	73.4	U	+/-33.2
Thorium-227	pCi/L	0	0%		0	0	39	1.26	U	+/-0.55				0.415	U	+/-0.22	0.381	U	+/-0.2			
Thorium-228	pCi/L	0.28	5%		0	2	39	0.202	U	+/-0.12				0.0784	U	+/-0.04	0.0719	U	+/-0.04			
Thorium-230	pCi/L	0.4	14%		0	11	77	0.132	U	+/-0.05	0.2	U	+/-0.2	0.0417	U	+/-0.03	0.0275	U	+/-0.02	0.2	U	+/-0.2
Thorium-232	pCi/L	0.1	12%		0	9	77	0.116	U	+/-0.04	0.1	U	+/-0.1	0.02	U	+/-0.01	0.024	U	+/-0.01	0.2	U	+/-0.1
Tritium	pCi/L	74.8	8%		0	6	75	459	U	+/-0.25	311	U	+/-182	411	U	+/-0.24	412	U	+/-0.24	261	U	+/-154
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	2.01		+/-0.39	0.8	U	+/-0.4	0.569	J	+/-0.3	0.718	J	+/-0.33	3.4		+/-0.9
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.0901	U	+/-0.06	0.2	U	+/-0.1	0.267	U	+/-0.07	0.177	U	+/-0.07	0.2		+/-0.2
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	1.1		+/-0.27	0.2	U	+/-0.2	0.249	J	+/-0.19	0.493	J	+/-0.27	2.9		+/-0.8

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-34			MW12-35			MW12-35			MW12-37			MW12-37		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122246			122028			122241			122025			122257		
DEPTH TO TOP OF SAMPLE								0			35			35			11			11		
DEPTH TO BOTTOM OF SAMPLE								0			35			35			11			11		
SAMPLE DATE								07-Dec-99			23-Apr-99			05-Dec-99			22-Apr-99			14-Dec-99		
QC CODE								SA			SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	2			1			2			1			2		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	7.96	UJ	+/-3.95	31.6	J	+/-10.1	7.89	UJ	+/-4.89	19.4	J	+/-4.3	7.7[illegible]	U	+/-[illegible].22
Cesium-137	pCi/L	9.4	5%		0	4	77	2.95	U	+/-1.77	1.8	U		2.94	UJ	+/-3.44	0.6	UJ		3.60	U	+/-[illegible].74
Cobalt-57	pCi/L	2.6	4%		0	3	77	2.66	U	+/-1.46	0.9	U		2.88	UJ	+/-1.61	0.5	UJ		2.9	U	+/- .69
Cobalt-60	pCi/L	11.4	9%		0	7	77	3.1	U	+/-1.8	0.4	U		3.21	UJ	+/-1.72	1	U		3.83	U	+/-[illegible].76
Gross Alpha	pCi/L	18	61%	15	1	48	79	4.25	J	+/-1.72	1.3		+/-1.9	2.14	J	+/-1.33	4		+/-3.8	2.13	J	+/-[illegible].97
Gross Beta	pCi/L	129	78%	1000	0	62	79	6.01	J	+/-1.32	12.2		+/-1.8	4.9	J	+/-1.24	4.8		+/-3.3	1.96	U	+/-[illegible].16
Lead-210	pCi/L	4.67	13%		0	5	39	5.26	U	+/-2.1				2.45	U	+/-1.09				3.17	J	+/- .53
Lead-211	pCi/L	478	4%		0	3	77	84.3	U	+/-48.3	34.2	U		87.1	UJ	+/-52.1	21.1	U		100	U	+/-[illegible]S.1
Lead-214	pCi/L	33.3	29%		0	22	77	7.51	U	+/-8.85	21.4		+/-7.1	7.04	UJ	+/-4.02	16.5	J	+/-[illegible]	8.34	UJ	+/-[illegible].33
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.0078	U	+/-0	0.3	U	+/-0.1	0.00925	U	+/-0	0.3	U	+/-0.2	0.00863	U	+/-[illegible]
Radium-223	pCi/L	0.7	40%		0	31	77	0.682	U	+/-0.34	0.4			0.581	U	+/-0.31	0.2			0.494	U	+/-[illegible].31
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.706	J	+/-0.55	0.4		+/-0.1	0.737	U	+/-0.35	0.2		+/-0.1	0.619	J	+/-[illegible].41
Radon-222	pCi/L	746	61%	300	16	47	77	101	U	+/-58.6	65.7	U	+/-39	52.9	U	+/-0.03	76.2		+/ 26.8	98.8	U	+/-80
Thorium-227	pCi/L	0	0%		0	0	39	0.682	U	+/-0.34				0.581	U	+/-0.31				0.494	U	+/-0.31
Thorium-228	pCi/L	0.28	5%		0	2	39	0.188	J	+/-0.09				0.0921	U	+/-0.05				0.0664	U	+/-0.04
Thorium-230	pCi/L	0.4	14%		0	11	77	0.0724	UJ	+/-0.04	0.2	U	+/-0.2	0.0488	U	+/-0.03	0.3		+/-0.3	0.0419	UJ	+/-0.03
Thorium-232	pCi/L	0.1	12%		0	9	77	0.0653	U	+/-0.03	0.2	U	+/-0.1	0.04	U	+/-0.02	0.4	U	+/-0.1	0.019	J	+/-[illegible].02
Tritium	pCi/L	74.8	8%		0	6	75	417	U	+/-0.23	311	U	+/-176	422	U	+/-0.24	311	U	+/-182	413	U	+/-[illegible].23
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	3.08	J	+/-0.55	0.7		+/-0.3	0.538	J	+/-0.27	3		+/-0.9	1.59		+/-0.44
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.123	J	+/-0.09	0.1		+/-0.1	0.16	U	+/-0.06	0.1		+/-[illegible]	0.129	J	+/-[illegible].12
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	2.64	J	+/-0.49	0.3		+/-0.2	1.03		+/-0.37	1.3		+/-0.5	0.983	J	+/-0.34

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY RoMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-38			MW12-38			MW12-39			MW12-39			MW12-40		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122026			122253			122027			122250			122024		
DEPTH TO TOP OF SAMPLE								8.5			9			8.2			8.5			11.5		
DEPTH TO BOTTOM OF SAMPLE								8.5			9			8.2			8.5			11.5		
SAMPLE DATE								22-Apr-99			13-Dec-99			22-Apr-99			13-Dec-99			22-Apr-99		
QC CODE								SA			SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1		
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	1			2			1			2			1		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	20.7	J	+/-11.1	8.39	U	+/-5.21	2.7	UJ		8.97	UJ	+/-5.08	29.9	J	+/-6.1
Cesium-137	pCi/L	9.4	5%		0	4	77	4.1	J	+/-4	3.09	U	+/-3.91	1.3	UJ		4.07	U	+/-2.2	1.1	U	
Cobalt-57	pCi/L	2.6	4%		0	3	77	0.5	UJ		2.89	UJ	+/-2.36	1	UJ		2.39	U	+/-1.4	0.3	U	
Cobalt-60	pCi/L	11.4	9%		0	7	77	1.5	U		3.52	UJ	+/-1.7	0.4	U		5.15	U	+/-3.99	3.1		+/-2
Gross Alpha	pCi/L	18	61%	15	1	48	79	10.8	U	+/-6.2	4.66	J	+/-2.64	7.7	U	+/-4.1	2.94	J	+/-2.82	0.3	U	+/-1.7
Gross Beta	pCi/L	129	78%	1000	0	62	79	1.4		+/-5.1	4.09	UJ	+/-2.49	0.4		+/-3.5	129	J	+/-4.88	2.9		+/-1.5
Lead-210	pCi/L	4.67	13%		0	5	39				3.17	J	+/-1.47				5.7	U	+/-2.19			
Lead-211	pCi/L	478	4%		0	3	77	28.3	U		81	U	+/-53.1	27.3	U		103	U	+/-60.1	15.5	U	
Lead-214	pCi/L	33.3	29%		0	22	77	29.2	J	+/-12.4	8.22	UJ	+/-8.2	12	J	+/-4.9	7.65	U	+/-4.14	30.7		+/-5.9
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.2	UJ	+/-0.2	0.00716	U	+/-0	0.1	U	+/-0.2	0.00237	U	+/-0	0.4	U	+/-0.3
Radium-223	pCi/L	0.7	40%		0	31	77	0.4			0.512	U	+/-0.28	0.1			0.508	U	+/-0.29	0.1		
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.4		+/-0.1	0.883	U	+/-0.45	0.1		+/-0.1	1.09		+/-0.64	0.1		+/-0.1
Radon-222	pCi/L	746	61%	300	16	47	77	85.1		+/-27.1	73.2	J	+/-28.3	**336**		+/-31.5	205.4	J	+/-33.3	177		+/-27
Thorium-227	pCi/L	0	0%		0	0	39				0.512	U	+/-0.28				0.508	U	+/-0.29			
Thorium-228	pCi/L	0.28	5%		0	2	39				0.0812	U	+/-0.05				0.17	U	+/-0.1			
Thorium-230	pCi/L	0.4	14%		0	11	77	0.4		+/-0.3	0.0834	J	+/-0.04	0.3		+/-0.3	0.0836	UJ	+/-0.04	0.2	U	+/-0.1
Thorium-232	pCi/L	0.1	12%		0	9	77	0.3	U	+/-0.1	0.0278	J	+/-0.03	0.3	U	+/-0.1	0.041	U	+/-0.03	0.1		+/-0.1
Tritium	pCi/L	74.8	8%		0	6	75	311	U	+/-184	418	U	+/-0.23	74.8		+/-188	424	U	+/-0.25	311	U	+/-183
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	2.2		+/-0.7	1.04	J	+/-0.29	1.4		+/-0.5	2.97	J	+/-0.59	0.7		+/-0.4
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.1		+/-0.2	0.0857	UJ	+/-0.07	0.1		+/-0.1	0.0574	UJ	+/-0.05	0.1		+/-0.1
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	1.1		+/-0.4	0.575	J	+/-0.21	0.8		+/-0.3	1.98	J	+/-0.45	0.8		+/-0.4

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-40			MW12-7			MW12-7			MW12-7			MW12-3		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122254			122044			122048			122272			122046		
DEPTH TO TOP OF SAMPLE								12.3			14			14			13			13		
DEPTH TO BOTTOM OF SAMPLE								12.3			14			14			13			13		
SAMPLE DATE								13-Dec-99			05-May-99			05-May-99			18-Dec-99			06-May-99		
QC CODE								SA			SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1		RI Phase 1	Step 1	
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	2			1			1			2			1		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	8.23	U	+/-6.39	27.2	U	+/-8	21.6	U	+/-6.5	11.6	U	+/-9.78	24.1	U	+/-[illegible]
Cesium-137	pCi/L	9.4	5%		0	4	77	2.76	U	+/-1.59	2	UJ		4.9	J	+/-1.2	4.86	U	+/-2.74	0.7	U	
Cobalt-57	pCi/L	2.6	4%		0	3	77	2.78	UJ	+/-1.6	0.5	U		0.9	U		4.25	UJ	+/-2.51	0.4	[illegible]	
Cobalt-60	pCi/L	11.4	9%		0	7	77	2.81	U	+/-1.46	0.4	U		0.4	U		4.9	UJ	+/-2.91	1	U	
Gross Alpha	pCi/L	18	61%	15	1	48	79	3.82	UJ	+/-1.57	0.5	J	+/-1.9	2.8	UJ	+/-1.8	1.83	J	+/-0.53	1.6		+/-1.1
Gross Beta	pCi/L	129	78%	1000	0	62	79	4.04	J	+/-1.31	1.3	J	+/-2.2	3.4	UJ	+/-2	3.33	J	+/-0.65	6.6		+/-1.7
Lead-210	pCi/L	4.67	13%		0	5	39	4.67	J	+/-1.67							2.7	U	+/-1.37			
Lead-211	pCi/L	478	4%		0	3	77	91	U	+/-55.6	23.9	U		39.5	U		127	U	+/-75.1	20.8	U	
Lead-214	pCi/L	33.3	29%		0	22	77	8.03	UJ	+/-4.15	29.8	UJ	+/-8.8	25.6	UJ	+/-10.1	11.7	UJ	+/-6.15	18.8	UJ	+/-8.7
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.00551	U	+/-0	0.1	UJ	+/-0.1	0.2	U	+/-0.1	0.0069	U	+/-0	0.2	[illegible]	+/-0.2
Radium-223	pCi/L	0.7	40%		0	31	77	0.825	U	+/-0.52	0.2			0.3			0.462	U	+/-0.25	0.2		
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.942	U	+/-0.51	0.2		+/-0.1	0.3		+/-0.1	0.629	U	+/-0.44	0.2		+/-0.1
Radon-222	pCi/L	746	61%	300	16	47	77	116	U	+/-70.2	187	UJ	+/-35.3	258	J	+/-56.3	148	J	+/-39.5	[illegible]		+/-[illegible].3
Thorium-227	pCi/L	0	0%		0	0	39	0.825	UJ	+/-0.52							0.462	U	+/-0.25			
Thorium-228	pCi/L	0.28	5%		0	2	39	0.17	UJ	+/-0.11							0.143	U	+/-0.08			
Thorium-230	pCi/L	0.4	14%		0	11	77	0.0952	UJ	+/-0.05	0.2	U	+/-0.2	0.2	U	+/-0.2	0.0523	J	+/-0.04	0.4	U	+/-0.3
Thorium-232	pCi/L	0.1	12%		0	9	77	0.0771	UJ	+/-0.03	0.2	U	+/-0.1	0.2	U	+/-0.1	0.0174	U	+/-0	0.1		+/-0.1
Tritium	pCi/L	74.8	8%		0	6	75	418	U	+/-0.23	90.2	U	+/-159	90.2	U	+/-159	406	U	+/-0.23	158	U	+/-162
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	0.591	J	+/-0.21	0.8	U	+/-0.4	1	U	+/-0.4	0.77	J	+/-0.23	1	U	+/-0.4
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.113	UJ	+/-0.05	0.2	UJ	+/-0.1	0.1	J	+/-0.1	0.0927	UJ	+/-0.05	0.1		+/-0.1
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	0.371	J	+/-0.17	0.3	UJ	+/-0.2	0.7	J	+/-0.3	0.506	J	+/-0.19	1.1		+/-0.1

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12-8			MW12-9			MW12-9			MW12A-1			MW12A-1		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122258			122050			122245			MW12A-1			122009		
DEPTH TO TOP OF SAMPLE								13.86			15			16			4			13		
DEPTH TO BOTTOM OF SAMPLE								13.86			15			16			13			13		
SAMPLE DATE								14-Dec-99			06-May-99			07-Dec-99			20-Jul-94			13-Apr-99		
QC CODE								SA			SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1 Step 1			RI Phase 1 Step 1			RI Phase 1 Step 1			ESI			RI Phase 1 Step 1		
SAMPLE ROUND					ABOVE	OF	OF	2			1			2			0			1		
PARAMETER	UNIT	MAXIMUM	OF DETECTION	RAD GUIDELINE	RAD	DETECTS	ANALYSES															
Bismuth-214	pCi/L	120	29%		0	22	77	7.3	U	+/-3.69	19.8	U	+/-5.7	8.93	UJ	+/-5.89				18	J	+/-10
Cesium-137	pCi/L	9.4	5%		0	4	77	3.54	U	+/-1.77	1.1	U		3.23	UJ	+/-1.82				1.1	U	
Cobalt-57	pCi/L	2.6	4%		0	3	77	2.48	UJ	+/-1.44	0.5	U		2.96	UJ	+/-1.69				0.7	UJ	
Cobalt-60	pCi/L	11.4	9%		0	7	77	2.92	UJ	+/-1.57	1.8	U		4.29	UJ	+/-2.55				11.4		+/-1.2
Gross Alpha	pCi/L	18	61%	15	1	48	79	5.25	J	+/-1.84	1.6		+/-2	5.71	J	+/-1.88	5		+/-10	3.8		+/-2.6
Gross Beta	pCi/L	129	78%	1000	0	62	79	3.45	J	+/-1.32	6		+/-2.2	6.77	J	+/-1.4	30		+/-9	3.6		+/-2.8
Lead-210	pCi/L	4.67	13%		0	5	39	2.64	J	+/-1.4				2.45	U	+/-1.2						
Lead-211	pCi/L	478	4%		0	3	77	84.2	U	+/-50.6	22.2	U		95.7	UJ	+/-53				26.6	U	
Lead-214	pCi/L	33.3	29%		0	22	77	7.76	UJ	+/-9.16	19.2	UJ	+/-3.9	7.6	UJ	+/-3.91				26.6	J	+/-5.1
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.00569	U	+/-0	0.1	U	+/-0.2	0.00621	U	+/-0				0.2	U	+/-0.1
Radium-223	pCi/L	0.7	40%		0	31	77	0.443	U	+/-0.25	0.4			0.366	U	+/-0.23				0.1		
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.922	U	+/-0.47	0.4		+/-0.1	0.625	U	+/-0.35				0.1		+/-0.1
Radon-222	pCi/L	746	61%	300	16	47	77	283.9	J	+/-67.5	95.6	U	+/-29.6	101	U	+/-59.1				215		+/-33.9
Thorium-227	pCi/L	0	0%		0	0	39	0.443	U	+/-0.25				0.366	U	+/-0.23						
Thorium-228	pCi/L	0.28	5%		0	2	39	0.165	U	+/-0.09				0.0537	U	+/-0.03						
Thorium-230	pCi/L	0.4	14%		0	11	77	0.0525	UJ	+/-0.04	0.1	U	+/-0.2	0.0188	U	+/-0.01				0.4	UJ	+/-0.2
Thorium-232	pCi/L	0.1	12%		0	9	77	0.0458	U	+/-0.02	0.2	U	+/-0.1	0.0302	U	+/-0.01				0.1		+/-0.1
Tritium	pCi/L	74.8	8%		0	6	75	410	U	+/-0.24	45.1	U	+/-157	417	U	+/-0.23				308	U	+/-182
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	1.35	J	+/-0.32	3.5		+/-0.9	2.71		+/-0.67				0.6	J	+/-0.3
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.0907	UJ	+/-0.04	0.3		+/-0.2	0.222	U	+/-0.16				0.2	J	+/-0.1
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	1.55	J	+/-0.35	3.3		+/-0.9	2.34		+/-0.61				0.4	J	+/-0.2

TABLE J-4 CONT'D
SITE RADIOLOGICAL DATA-GROUND WATER
SEAD-12 REMEDIAL INVESTIGATION
SENECA ARMY DEPOT ACTIVITY ROMULUS, NY

FACILITY								SEAD-12			SEAD-12			SEAD-12			SEAD-12		
LOCATION ID								MW12A-1			MW12A-2			MW12A-2			MW12A-2		
MATRIX								GROUND WATER			GROUND WATER			GROUND WATER			GROUND WATER		
SAMPLE ID								122256			MW12A-2			122010			122238		
DEPTH TO TOP OF SAMPLE								9			4.3			11			9		
DEPTH TO BOTTOM OF SAMPLE								9			11.1			11			9		
SAMPLE DATE								14-Dec-99			20-Jul-94			13-Apr-99			17-Dec-99		
QC CODE								SA			SA			SA			SA		
STUDY ID			FREQUENCY		NUMBER	NUMBER	NUMBER	RI Phase 1	Step 1		ESI			RI Phase 1	Step 1		RI Phase 1	Step 1	
SAMPLE ROUND			OF	RAD	ABOVE	OF	OF	2			0			1			2		
PARAMETER	UNIT	MAXIMUM	DETECTION	GUIDELINE	RAD	DETECTS	ANALYSES												
Bismuth-214	pCi/L	120	29%		0	22	77	7.68	UJ	+/-4.01				29.3	J	+/-6.9	13.1	U	+/-11.5
Cesium-137	pCi/L	9.4	5%		0	4	77	2.84	U	+/-1.73				2.2	U		3.32	U	+/-3.06
Cobalt-57	pCi/L	2.6	4%		0	3	77	2.63	U	+/-1.49				0.9	UJ		4.19	U	+/-2.43
Cobalt-60	pCi/L	11.4	9%		0	7	77	3.19	U	+/-1.65				0.4	U		5.0[illegible]	U	+/-2.78
Gross Alpha	pCi/L	18	61%	15	1	48	79	3.19	J	+/-1.5	18		+/-20	2.6		+/-1.7	0.908	U	+/-0.58
Gross Beta	pCi/L	129	78%	1000	0	62	79	2.37	J	+/-1.12	110		+/-20	4.6		+/-1.6	1.16	J	+/-0.63
Lead-210	pCi/L	4.67	13%		0	5	39	5.64	U	+/-2.69							4.16	U	+/-1.82
Lead-211	pCi/L	478	4%		0	3	77	81.4	U	+/-61.4				21	U		134	U	[illegible]
Lead-214	pCi/L	33.3	29%		0	22	77	6.65	U	+/-4.02				29.7	J	+/-10.9	12.1	UJ	+/-11.1
Plutonium-239/240	pCi/L	0	0%		0	0	77	0.00874	U	+/-0				0.2	U	+/-0.1	0.00262	U	+/-2
Radium-223	pCi/L	0.7	40%		0	31	77	0.589	U	+/-0.3				0.1			0.399	J	+/-0.25
Radium-226	pCi/L	1.8	52%	3	0	40	77	0.932	U	+/-0.56				0.1		+/-0.1	0.663	U	+/-0.45
Radon-222	pCi/L	746	61%	300	16	47	77	114	U	+/-69.1				495		+/-38	324.9	J	+/-52.1
Thorium-227	pCi/L	0	0%		0	0	39	0.589	U	+/-0.3							0.399	U	+/-0.25
Thorium-228	pCi/L	0.28	5%		0	2	39	0.165	U	+/-0.09							0.0828	U	+/-0.05
Thorium-230	pCi/L	0.4	14%		0	11	77	0.0504	UJ	+/-0.03				0.5	UJ	+/-0.3	0.0797	J	+/-0.04
Thorium-232	pCi/L	0.1	12%		0	9	77	0.0504	U	+/-0.02				0.2	U	+/-0.1	0.0455	J	+/-0.03
Tritium	pCi/L	74.8	8%		0	6	75	422	U	+/-0.23				308	U	+/-183	515	J	+/-0.20
Uranium-234	pCi/L	3.5	87%	124846.8	0	67	77	0.742	J	+/-0.24				0.5		+/-0.3	0.506	J	+/-0.25
Uranium-235	pCi/L	0.4	35%	43.42162	0	27	77	0.104	UJ	+/-0.05				0.1	U	+/-0.1	0.21	U	+/-0.08
Uranium-238	pCi/L	3.3	94%	6.669334	0	72	77	0.569	J	+/-0.21				0.1		+/-0.1	0.302	J	+/-0.19

APPENDIX K

SOIL GAS DATA

- **Soil Gas Collection Data**
- **Calibration and Carrier Gas Certification**
- **Soil Gas AnaylisisChromatographs and Calibration Forms**

Soil Gas Collection Data

SOIL GAS SAMPLE LOCATION DATA

PARSONS ENGINEERING-SCIENCE	CLIENT: USACOE	DATE: 10/6/97

PROJECT: RI FIELD INVESTIGATION

SWMU # (AREA): 12

INSPECTOR: F. O'Loughlin

CONTRACTOR: American Auger

TYPE OF RIG: Simco Earthprobe 200

WT/HAMMER: Hydraulic Hammer

Background OVM – Ø OVM was calibrated to 100ppm isobutylene

WEATHER/FIELD CONDITIONS (record major changes)				MONITORING	
TIME	TEMP	PRECIP.	GROUND SURFACE CONDITIONS	INSTRUMENT	DETECTOR
1600	75°	–	Dry	OVM 580 B	VOCs

SAMPLE LOCATION: SG12-137

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: 0.7 ppm
	TIME OF OVM MAXIMUM: 1649:30
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1649:30
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1646:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 6
TIME STOP EVACUATION PUMP: 1650	SYRINGE NUMBER: 9

COMMENTS: Drilled inside Bldg 813, 6" of concrete floor

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

Collected duplicate MSD, syringe #6

SAMPLE LOCATION: Rod Blank

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: –
DEPTH OF PENETROMETER POINT (ft): –	TIME OF SOIL GAS SAMPLE: 1657
DEPTH TO BOTTOM OF ROD (FT): –	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1653	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1657	SYRINGE NUMBER: 1

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-138

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: –
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1720:30
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE(L/min): 2
TIME START EVACUATION PUMP: 1716:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1720:30	SYRINGE NUMBER: 2

COMMENTS: Drilled inside Bldg 813, 6" of concrete floor

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SOIL GAS SAMPLE LOCATION DATA

PARSONS ENGINEERING-SCIENCE	CLIENT: USACOE	DATE: 10/7/97

PROJECT: RI FIELD INVESTIGATION

SWMU # (AREA): 12

OVM calibrated to 100 ppm isobutylene

Ø - Background OVM Reading

INSPECTOR: F. O'Loughlin

CONTRACTOR: American Auger

TYPE OF RIG: Simco Earthprobe 200

WT/HAMMER: Hydraulic Hammer

WEATHER/FIELD CONDITIONS (record major changes)

TIME	TEMP	PRECIP.	GROUND SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0845	58°F	-	dry	OVM 580 B	VOCs

SAMPLE LOCATION: ROD BLANK

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: -
DEPTH OF PENETROMETER POINT (ft): -	TIME OF SOIL GAS SAMPLE: 0859
DEPTH TO BOTTOM OF ROD (FT): -	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 0855	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 0859	SYRINGE NUMBER: 5

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-132

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: 1.1 ppm
	TIME OF OVM MAXIMUM: 0905:30
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 0905:30
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 0904:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 2
TIME STOP EVACUATION PUMP: 0908:30	SYRINGE NUMBER: 3

COMMENTS: Drilled inside Bldg 813, 6" concrete floor

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-131

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: 0.7 ppm
	TIME OF OVM MAXIMUM: 0911:30
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 0911:30
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE(L/min): 2
TIME START EVACUATION PUMP: 0910:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 2
TIME STOP EVACUATION PUMP: 0914:30	SYRINGE NUMBER: 8

COMMENTS: Drilled thru 6" concrete floor in Bldg 813

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG12-134

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: 1.1 ppm
TIME OF OVM MAXIMUM: 1032:30
DEPTH OF PENETROMETER POINT (ft): 4
TIME OF SOIL GAS SAMPLE: 1032:30
DEPTH TO BOTTOM OF ROD (FT): 2
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1029
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 7
TIME STOP EVACUATION PUMP: 1033
SYRINGE NUMBER: 2
COMMENTS: Drilled thru 8" of concrete floor in Bldg 813
IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-130

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: 1.6 ppm
TIME OF OVM MAXIMUM: 1044:30
DEPTH OF PENETROMETER POINT (ft): 4
TIME OF SOIL GAS SAMPLE: 1044:30
DEPTH TO BOTTOM OF ROD (FT): 2
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1042:30
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 4
TIME STOP EVACUATION PUMP: 1046
SYRINGE NUMBER: 4
COMMENTS: Drilled thru 8" of concrete floor in Bldg 813
IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-147

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: 1.2 ppm
TIME OF OVM MAXIMUM: 1134
DEPTH OF PENETROMETER POINT (ft): 3.5
TIME OF SOIL GAS SAMPLE: 1134
DEPTH TO BOTTOM OF ROD (FT): 1.0
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1132
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 4
TIME STOP EVACUATION PUMP: 1136
SYRINGE NUMBER: 6
COMMENTS: Moved location 2.5 west of original location due to refusal at 1'. (Refusal at 3.5')
IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: Ambient Air BLANK

BLOWS PER 6 INCHES:
OVM MAXIMUM: Ø
TIME OF OVM MAXIMUM:
DEPTH OF PENETROMETER POINT (ft):
TIME OF SOIL GAS SAMPLE:
DEPTH TO BOTTOM OF ROD (FT):
FLOW RATE(L/min): 2
TIME START EVACUATION PUMP:
VOLUME OF GAS REMOVED AT SAMPLE TIME (L)
TIME STOP EVACUATION PUMP:
SYRINGE NUMBER: 9
COMMENTS: Collected to confirm Toluene found in Rod Blank
IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG12-151

BLOWS PER 6 INCHES: MA	OVM MAXIMUM: 0.8 ppm
	TIME OF OVM MAXIMUM: 1142:30
DEPTH OF PENETROMETER POINT (ft): 2	TIME OF SOIL GAS SAMPLE: 1142:30
DEPTH TO BOTTOM OF ROD (FT): 1	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1138:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1142:30	SYRINGE NUMBER: 1

COMMENTS: Refusal at 1' moved ~2.5 to west. Refusal at 2'

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION: SG12-156

BLOWS PER 6 INCHES: MA	OVM MAXIMUM: 0.1 ppm
	TIME OF OVM MAXIMUM: 1309:30
DEPTH OF PENETROMETER POINT (ft): .8	TIME OF SOIL GAS SAMPLE: 1309:30
DEPTH TO BOTTOM OF ROD (FT): .4	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1308:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 2
TIME STOP EVACUATION PUMP: 1312	SYRINGE NUMBER: 3

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION: SG12-154

BLOWS PER 6 INCHES: MA	OVM MAXIMUM: 0.3 ppm
	TIME OF OVM MAXIMUM: 1316:30
DEPTH OF PENETROMETER POINT (ft): 1.5	TIME OF SOIL GAS SAMPLE: 1316:30
DEPTH TO BOTTOM OF ROD (FT): 1.0	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1313:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 6
TIME STOP EVACUATION PUMP: 1317:30	SYRINGE NUMBER: 5

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION: SG12-153

BLOWS PER 6 INCHES: MA	OVM MAXIMUM: 0.3 ppm
	TIME OF OVM MAXIMUM: 1354
DEPTH OF PENETROMETER POINT (ft): 1.5	TIME OF SOIL GAS SAMPLE: 1354
DEPTH TO BOTTOM OF ROD (FT): 1.0	FLOW RATE(L/min): 2
TIME START EVACUATION PUMP 1351	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 6
TIME STOP EVACUATION PUMP: 1354	SYRINGE NUMBER: 2

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG12-152

BLOWS PER 6 INCHES:	NA	OVM MAXIMUM	0.1 ppm
		TIME OF OVM MAXIMUM	1358
DEPTH OF PENETROMETER POINT (ft):	3.5	TIME OF SOIL GAS SAMPLE	1350
DEPTH TO BOTTOM OF ROD (FT):	2.5	FLOW RATE (L/min)	2
TIME START EVACUATION PUMP:	1356	VOLUME OF GAS REMOVED AT SAMPLE TIME (L)	4
TIME STOP EVACUATION PUMP:	1400	SYRINGE NUMBER	8

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-126

BLOWS PER 6 INCHES	NA	OVM MAXIMUM	0.1 ppm
		TIME OF OVM MAXIMUM	~~1459~~ Fc
DEPTH OF PENETROMETER POINT (ft):	4	TIME OF SOIL GAS SAMPLE:	1459
DEPTH TO BOTTOM OF ROD (FT):	2	FLOW RATE (L/min):	2
TIME START EVACUATION PUMP:	1455:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L):	7
TIME STOP EVACUATION PUMP:	1459:30	SYRINGE NUMBER:	9

COMMENTS: collected duplicate Syringe #1

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-121

BLOWS PER 6 INCHES:	NA	OVM MAXIMUM	0.8 ppm
		TIME OF OVM MAXIMUM	1505
DEPTH OF PENETROMETER POINT (ft):	4	TIME OF SOIL GAS SAMPLE:	1505
DEPTH TO BOTTOM OF ROD (FT):	2	FLOW RATE (L/min):	2
TIME START EVACUATION PUMP:	1502:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L):	5
TIME STOP EVACUATION PUMP:	1506:30	SYRINGE NUMBER	4

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-119

BLOWS PER 6 INCHES:	NA	OVM MAXIMUM	0.7 ppm
		TIME OF OVM MAXIMUM	1558
DEPTH OF PENETROMETER POINT (ft):	4	TIME OF SOIL GAS SAMPLE:	1558
DEPTH TO BOTTOM OF ROD (FT):	2	FLOW RATE(L/min)	2
TIME START EVACUATION PUMP:	1557	VOLUME OF GAS REMOVED AT SAMPLE TIME (L)	2
TIME STOP EVACUATION PUMP:	1601	SYRINGE NUMBER	8

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG 12- 118

BLOWS PER 6 INCHES: NA	OVM MAXIMUM: 0.5 ppm
	TIME OF OVM MAXIMUM: 1603:30
DEPTH OF PENETROMETER POINT (ft): 3.5 (Refusal)	TIME OF SOIL GAS SAMPLE: 1603:30
DEPTH TO BOTTOM OF ROD (FT): 1.5	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1602	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 3
TIME STOP EVACUATION PUMP: 1606	SYRINGE NUMBER: 3

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12- 120

BLOWS PER 6 INCHES: NA	OVM MAXIMUM: 0.4 ppm
	TIME OF OVM MAXIMUM: 1609:30
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1609:30
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1607:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 4
TIME STOP EVACUATION PUMP: 1610	SYRINGE NUMBER: 6

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12 - 123

BLOWS PER 6 INCHES: NA	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: ~~16~~ FG
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1625
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1621	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1625	SYRINGE NUMBER: 5

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-122

BLOWS PER 6 INCHES: NA	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1648
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE(L/min): 2
TIME START EVACUATION PUMP: 1644:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 7
TIME STOP EVACUATION PUMP: 1648:30	SYRINGE NUMBER: 4

COMMENTS: Asphalt - 3" thick concrete beneath Asphalt - 7" thick. There also appeared to be ground + soil, possibly fill, from 10" to 4'

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

~~Asphalt - 3"~~ f..

FIGURE A-16

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG2-141

BLOWS PER 6 INCHES: NA	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM —
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1707:30
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1703:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L) 8
TIME STOP EVACUATION PUMP: 1707:30	SYRINGE NUMBER: 9

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION:

BLOWS PER 6 INCHES:	OVM MAXIMUM:
	TIME OF OVM MAXIMUM:
DEPTH OF PENETROMETER POINT (ft):	TIME OF SOIL GAS SAMPLE:
DEPTH TO BOTTOM OF ROD (FT):	FLOW RATE (L/min):
TIME START EVACUATION PUMP:	VOLUME OF GAS REMOVED AT SAMPLE TIME (L):
TIME STOP EVACUATION PUMP:	SYRINGE NUMBER:

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION:

BLOWS PER 6 INCHES:	OVM MAXIMUM:
	TIME OF OVM MAXIMUM:
DEPTH OF PENETROMETER POINT (ft):	TIME OF SOIL GAS SAMPLE:
DEPTH TO BOTTOM OF ROD (FT):	FLOW RATE (L/min):
TIME START EVACUATION PUMP:	VOLUME OF GAS REMOVED AT SAMPLE TIME (L):
TIME STOP EVACUATION PUMP:	SYRINGE NUMBER:

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION:

BLOWS PER 6 INCHES:	OVM MAXIMUM:
	TIME OF OVM MAXIMUM:
DEPTH OF PENETROMETER POINT (ft)	TIME OF SOIL GAS SAMPLE:
DEPTH TO BOTTOM OF ROD (FT):	FLOW RATE(L/min):
TIME START EVACUATION PUMP:	VOLUME OF GAS REMOVED AT SAMPLE TIME (L)
TIME STOP EVACUATION PUMP:	SYRINGE NUMBER:

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE? YES NO

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SOIL GAS SAMPLE LOCATION DATA

PARSONS ENGINEERING-SCIENCE	CLIENT: USACOE	DATE: 10/8/97

PROJECT: RI FIELD INVESTIGATION

SWMU # (AREA): 12

Ø - background OVM reading
OVM was calibrated to 100 ppm isobutylene

INSPECTOR: F. O'Loughlin
CONTRACTOR: American Auger
TYPE OF RIG: Simco Earthprobe 200
WT/HAMMER: Hydraulic Hammer

WEATHER/FIELD CONDITIONS (record major changes) / MONITORING

TIME	TEMP	PRECIP.	GROUND SURFACE CONDITIONS	INSTRUMENT	DETECTOR
0815	60°F		dry	OVM 580B	VOCs

SAMPLE LOCATION: SG12-142

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: 0.1 ppm
	TIME OF OVM MAXIMUM: 0839:30
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 0839:30
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 0837:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 4
TIME STOP EVACUATION PUMP: 0841	SYRINGE NUMBER: 3

COMMENTS:
IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-150

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: 0.5 ppm
	TIME OF OVM MAXIMUM: 0847:30
DEPTH OF PENETROMETER POINT (ft): 3	TIME OF SOIL GAS SAMPLE: 0847:30
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 0846	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 3
TIME STOP EVACUATION PUMP: 0850	SYRINGE NUMBER: 8

COMMENTS:
IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: Rod Blank

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): —	TIME OF SOIL GAS SAMPLE: 1000
DEPTH TO BOTTOM OF ROD (FT): —	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 0956	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1000	SYRINGE NUMBER: 1

COMMENTS: Also collected Ambient air blank at the same time as Rod Blank samples collected upwind of Bldg 813 + 814
IS GROUNDWATER PRESENT IN THE SAMPLING PIPE? YES (NO)

Same and will be used at SG12-125 Syringe #2

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG12 - 124

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: Ø
TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 4
TIME OF SOIL GAS SAMPLE: 1027:30
DEPTH TO BOTTOM OF ROD (FT): 2
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1023:30
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1027:30
SYRINGE NUMBER: 6

COMMENTS: Drilled through 3" of Asphalt + ~7" of concrete
IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-125

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: Ø
TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 4
TIME OF SOIL GAS SAMPLE: 1147:30
DEPTH TO BOTTOM OF ROD (FT): 2
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1143:30
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1147:30
SYRINGE NUMBER: 4

COMMENTS: Drilled through ~3" asphalt ~7" of concrete
IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-129

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: Ø
TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 4
TIME OF SOIL GAS SAMPLE: 1153:30
DEPTH TO BOTTOM OF ROD (FT): 2
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1149:30
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1153:30
SYRINGE NUMBER: 3

COMMENTS: 1" of asphalt - no cement
IS GROUNDWATER PRESENT IN THE SAMPLING PIPE? YES (NO)

SAMPLE LOCATION: SG12-128

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: Ø
TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 4
TIME OF SOIL GAS SAMPLE: 1159:30
DEPTH TO BOTTOM OF ROD (FT): 2
FLOW RATE(L/min): 2
TIME START EVACUATION PUMP: 1154:30
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1159:30
SYRINGE NUMBER: 9

COMMENTS: Drilled through 3" asphalt, 7" concrete
IS GROUNDWATER PRESENT IN THE SAMPLING PIPE? YES (NO)

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG12-144

BLOWS PER 6 INCHES: NA	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1205
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1201	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1205	SYRINGE NUMBER: 5

COMMENTS: Drilled through 3" asphalt + 7" concrete

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-143

BLOWS PER 6 INCHES: NA	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1352
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1348	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1352	SYRINGE NUMBER: 8

COMMENTS: Drilled through 3" asphalt, 7" concrete

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

, 817

SAMPLE LOCATION: SG12-161

BLOWS PER 6 INCHES: NA	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1302:30
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1258:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1302:30	SYRINGE NUMBER: 1

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-160

BLOWS PER 6 INCHES: NA	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1408
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE(L/min): 2
TIME START EVACUATION PUMP: 1404	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1408	SYRINGE NUMBER: 2

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

FIGURE A-16

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG12-167

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: Ø
TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 1.5
TIME OF SOIL GAS SAMPLE: 1458:30
DEPTH TO BOTTOM OF ROD (FT): 1
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1454:30
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1458:30
SYRINGE NUMBER: 4

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-164

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: 0.7 ppm
TIME OF OVM MAXIMUM: 1500:30
DEPTH OF PENETROMETER POINT (ft): 4
TIME OF SOIL GAS SAMPLE: 1500:30
DEPTH TO BOTTOM OF ROD (FT): 2
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1500
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 1
TIME STOP EVACUATION PUMP: 1504
SYRINGE NUMBER: 3

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-169

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: 1.8 ppm
TIME OF OVM MAXIMUM: 1507:30
DEPTH OF PENETROMETER POINT (ft): 1.5
TIME OF SOIL GAS SAMPLE: 1507:30
DEPTH TO BOTTOM OF ROD (FT): 1.0
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1507
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 1
TIME STOP EVACUATION PUMP: 1511
SYRINGE NUMBER: 9

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE? YES (NO)

SAMPLE LOCATION: SG12-162

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: 0.4 ppm
TIME OF OVM MAXIMUM: 1515
DEPTH OF PENETROMETER POINT (ft): 4
TIME OF SOIL GAS SAMPLE: 1515
DEPTH TO BOTTOM OF ROD (FT): 2
FLOW RATE(L/min): 2
TIME START EVACUATION PUMP: 1514
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 2
TIME STOP EVACUATION PUMP: 1519
SYRINGE NUMBER: 5

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE? YES (NO)

FIGURE A-16

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG12-165	
BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1713:30
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1709:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1713:30	SYRINGE NUMBER: 1

COMMENTS: Also collected duplicate syringe # 8. Sample location is 4' from telephone - down gradient

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-166	
BLOWS PER 6 INCHES: N/A	OVM MAXIMUM:
	TIME OF OVM MAXIMUM:
DEPTH OF PENETROMETER POINT (ft): 2.5	TIME OF SOIL GAS SAMPLE:
DEPTH TO BOTTOM OF ROD (FT): 2.0	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP:	VOLUME OF GAS REMOVED AT SAMPLE TIME (L):
TIME STOP EVACUATION PUMP:	SYRINGE NUMBER:

F.O.

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION: SG12-163	
BLOWS PER 6 INCHES: N/A	OVM MAXIMUM:
	TIME OF OVM MAXIMUM:
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE:
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP:	VOLUME OF GAS REMOVED AT SAMPLE TIME (L):
TIME STOP EVACUATION PUMP:	SYRINGE NUMBER:

F.O.

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION.	
BLOWS PER 6 INCHES	OVM MAXIMUM:
	TIME OF OVM MAXIMUM:
DEPTH OF PENETROMETER POINT (ft):	TIME OF SOIL GAS SAMPLE:
DEPTH TO BOTTOM OF ROD (FT):	FLOW RATE(L/min):
TIME START EVACUATION PUMP:	VOLUME OF GAS REMOVED AT SAMPLE TIME (L):
TIME STOP EVACUATION PUMP:	SYRINGE NUMBER:

F.O.

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SOIL GAS SAMPLE LOCATION DATA

PARSONS ENGINEERING-SCIENCE	CLIENT: USACOE	DATE: 10/9/97
PROJECT: RI FIELD INVESTIGATION		INSPECTOR: F. O'Loughlin
SWMU # (AREA): 12 (Bldg 817)		CONTRACTOR: American Auger
OVM was calibrated to 100 ppm isobutylene		TYPE OF RIG: SIMCO Earthprobe 300
Ø - background OVM reading		WT/HAMMER: Hydraulic Hammer

WEATHER/FIELD CONDITIONS (record major changes)

TIME	TEMP	PRECIP.	GROUND SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0850	68	-	Dry	OVM 580B	VOCs

SAMPLE LOCATION: SG12-166

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: -
DEPTH OF PENETROMETER POINT (ft): 2.5	TIME OF SOIL GAS SAMPLE: 0900
DEPTH TO BOTTOM OF ROD (FT): 2.0	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 0856	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 0900	SYRINGE NUMBER: 4

COMMENTS: Sample located 10' downgradient of telephone pole. Surface water runoff may affect location

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-163

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: -
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 0905:30
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 0901:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 0905:30	SYRINGE NUMBER: 5

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

Bldg 817

SAMPLE LOCATION: SG12-133

BLOWS PER 6 INCHES: N/A (HAND Driven)	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: -
DEPTH OF PENETROMETER POINT (ft): 3.5	TIME OF SOIL GAS SAMPLE: 1002
DEPTH TO BOTTOM OF ROD (FT): 1.5	FLOW RATE(L/min): 2
TIME START EVACUATION PUMP: 0958	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1002	SYRINGE NUMBER: 6

COMMENTS: Collected near underground storage tank in Gravel fill Area

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG12 - 136

BLOWS PER 6 INCHES: HAND DRIVEN

OVM MAXIMUM: 0.5 ppm

TIME OF OVM MAXIMUM: 1008:30

DEPTH OF PENETROMETER POINT (ft): 2

TIME OF SOIL GAS SAMPLE: 1008:30

DEPTH TO BOTTOM OF ROD (FT): 1

FLOW RATE (L/min): 2

TIME START EVACUATION PUMP: 1005:30

VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 6

TIME STOP EVACUATION PUMP: 1009:30

SYRINGE NUMBER: 3

COMMENTS: Collected at edge of Gravel fill area 9' from midpoint of ditch

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION: SG12 - 135

BLOWS PER 6 INCHES: N/A (driven w/rig)

OVM MAXIMUM: Ø

TIME OF OVM MAXIMUM: —

DEPTH OF PENETROMETER POINT (ft): 4

TIME OF SOIL GAS SAMPLE: 1018:45

DEPTH TO BOTTOM OF ROD (FT): 2

FLOW RATE (L/min): 2

TIME START EVACUATION PUMP: 1014:45

VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8

TIME STOP EVACUATION PUMP: 1018:45

SYRINGE NUMBER: 2

COMMENTS: moved from proposed location due to overhead vessels + foundation.

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION: SG12 - 139

BLOWS PER 6 INCHES: HAND DRIVEN

OVM MAXIMUM: Ø

TIME OF OVM MAXIMUM: —

DEPTH OF PENETROMETER POINT (ft): 3

TIME OF SOIL GAS SAMPLE: 1040:30

DEPTH TO BOTTOM OF ROD (FT): 2

FLOW RATE (L/min) 2

TIME START EVACUATION PUMP: 1036:30

VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8

TIME STOP EVACUATION PUMP: 1040:30

SYRINGE NUMBER: 9

COMMENTS: Moved from proposed location due to foundation

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION: SG12 - 140

BLOWS PER 6 INCHES: HAND Driven

OVM MAXIMUM: Ø

TIME OF OVM MAXIMUM: —

DEPTH OF PENETROMETER POINT (ft): 2

TIME OF SOIL GAS SAMPLE: 1046:30

DEPTH TO BOTTOM OF ROD (FT): 1

FLOW RATE(L/min) 2

TIME START EVACUATION PUMP: 1042:30

VOLUME OF GAS REMOVED AT SAMPLE TIME (L) 8

TIME STOP EVACUATION PUMP 1046:30

SYRINGE NUMBER: 8

COMMENTS: Collected at edge of fill area, 10' from midpoint of ditch

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG12-127

BLOWS PER 6 INCHES: HAND Driven

OVM MAXIMUM: Ø

TIME OF OVM MAXIMUM: —

DEPTH OF PENETROMETER POINT (ft): 3

TIME OF SOIL GAS SAMPLE: 1054:30

DEPTH TO BOTTOM OF ROD (FT): 2

FLOW RATE (L/min): 2

TIME START EVACUATION PUMP: 1050:30

VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8

TIME STOP EVACUATION PUMP: 1054:30

SYRINGE NUMBER: 1

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-117

BLOWS PER 6 INCHES: HAND Driven

OVM MAXIMUM: Ø

TIME OF OVM MAXIMUM: —

DEPTH OF PENETROMETER POINT (ft): 3

TIME OF SOIL GAS SAMPLE: 1308:30

DEPTH TO BOTTOM OF ROD (FT): 2

FLOW RATE (L/min): 2

TIME START EVACUATION PUMP: 1304:30

VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8

TIME STOP EVACUATION PUMP: 1308:30

SYRINGE NUMBER: 4

COMMENTS: Sample location was not proposed in workplan. Added for coverage since we ~~Samples~~ were not able to collect samples proposed in the southeastern portion of bldg 813.

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-169 Re-Analysis

BLOWS PER 6 INCHES: N/A

OVM MAXIMUM: 0.3ppm

TIME OF OVM MAXIMUM: 1326

DEPTH OF PENETROMETER POINT (ft): 2

TIME OF SOIL GAS SAMPLE: 1326

DEPTH TO BOTTOM OF ROD (FT): 1.5

FLOW RATE (L/min): 2

TIME START EVACUATION PUMP: 1325

VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 2

TIME STOP EVACUATION PUMP: 1329

SYRINGE NUMBER: 5

COMMENTS: Reanalyzed due to plugged Photovac

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: ROD BLANK

BLOWS PER 6 INCHES: —

OVM MAXIMUM: Ø

TIME OF OVM MAXIMUM: —

DEPTH OF PENETROMETER POINT (ft): —

TIME OF SOIL GAS SAMPLE: 1412

DEPTH TO BOTTOM OF ROD (FT):

FLOW RATE(L/min): 2

TIME START EVACUATION PUMP: 1408

VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8

TIME STOP EVACUATION PUMP: 1412

SYRINGE NUMBER: 9

COMMENTS: Also collected Ambient air blank syringe #2

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SOIL GAS SAMPLE LOCATION DATA

Air Rig

SAMPLE LOCATION: SG 12-170

BLOWS PER 6 INCHES:	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: 1453:30
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1453:30
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1449:36	VOLUME OF GAS REMOVED AT SAMPLE TIME (L):
TIME STOP EVACUATION PUMP: 1453:30	SYRINGE NUMBER: 1

COMMENTS: Also collected duplicate Syringe #6 Drilled through ~3" Asphalt 4" cement + rebar

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

Air Rig

SAMPLE LOCATION: SG12-168

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: 0.1 ppm
	TIME OF OVM MAXIMUM: 1455:30
DEPTH OF PENETROMETER POINT (ft): 2.5	TIME OF SOIL GAS SAMPLE: 1455:30
DEPTH TO BOTTOM OF ROD (FT): 1.5	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1454:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 2
TIME STOP EVACUATION PUMP: 1458:30	SYRINGE NUMBER: 3

COMMENTS: Pushed rod through ~3" Asphalt

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

Air Rig

SAMPLE LOCATION: SG12-157

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 3	TIME OF SOIL GAS SAMPLE: 1616
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE (Ll/min): 2
TIME START EVACUATION PUMP: 1612	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1616	SYRINGE NUMBER: 8

COMMENTS: Drilled through 3" Asphalt + 6" cement + rebar

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

Air Rig

SAMPLE LOCATION: SG12-159

BLOWS PER 6 INCHES: N/A	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 1624
DEPTH TO BOTTOM OF ROD (FT): 2	FLOW RATE(L/min): 2
TIME START EVACUATION PUMP: 1620	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1624	SYRINGE NUMBER: 2

COMMENTS: Drilled through 2" asphalt and 6" cement + rebar

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG12-158

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: Ø
TIME OF OVM MAXIMUM: -
DEPTH OF PENETROMETER POINT (ft): 3.5
TIME OF SOIL GAS SAMPLE: 1634
DEPTH TO BOTTOM OF ROD (FT): 1.5
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1630
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1634
SYRINGE NUMBER: 4

COMMENTS: Drilled through 2" Asphalt + 6" rebar/cement

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION: SG12-156

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM
TIME OF OVM MAXIMUM
DEPTH OF PENETROMETER POINT (ft): 4
TIME OF SOIL GAS SAMPLE
DEPTH TO BOTTOM OF ROD (FT): 2
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP
VOLUME OF GAS REMOVED AT SAMPLE TIME (L)
TIME STOP EVACUATION PUMP
SYRINGE NUMBER

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION: SG12-146

BLOWS PER 6 INCHES
OVM MAXIMUM
TIME OF OVM MAXIMUM
DEPTH OF PENETROMETER POINT (ft): 2
TIME OF SOIL GAS SAMPLE
DEPTH TO BOTTOM OF ROD (FT): 1.5
FLOW RATE (L/min)
TIME START EVACUATION PUMP
VOLUME OF GAS REMOVED AT SAMPLE TIME (L)
TIME STOP EVACUATION PUMP
SYRINGE NUMBER

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SAMPLE LOCATION: SG12-149

BLOWS PER 6 INCHES
OVM MAXIMUM
TIME OF OVM MAXIMUM
DEPTH OF PENETROMETER POINT (ft): 3
TIME OF SOIL GAS SAMPLE
DEPTH TO BOTTOM OF ROD (FT): 2
FLOW RATE(L/min)
TIME START EVACUATION PUMP
VOLUME OF GAS REMOVED AT SAMPLE TIME (L)
TIME STOP EVACUATION PUMP
SYRINGE NUMBER

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

SG12-145 2, 1.5
148 2, 1.5

SOIL GAS SAMPLE LOCATION DATA

PARSONS ENGINEERING-SCIENCE	CLIENT: USACOE	DATE: 10/10/97

PROJECT: RI FIELD INVESTIGATION

INSPECTOR: F. O'Loughlin

SWMU # (AREA): 12

CONTRACTOR: American Auger

TYPE OF RIG: Simco Earthprobe 200

WT/HAMMER: Hydraulic hammer

Q - Background OVM reading
OVM was calibrated to 100 ppm isobutylene

WEATHER/FIELD CONDITIONS (record major changes) / MONITORING

TIME	TEMP	PRECIP.	GROUND SURFACE CONDITIONS	INSTRUMENT	DETECTOR
0930	65°F	-	dry	580B OVM	VOCs

SAMPLE LOCATION: SG12-156

BLOWS PER 6 INCHES: NA	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 4	TIME OF SOIL GAS SAMPLE: 0946:30
DEPTH TO BOTTOM OF ROD (FT): 7	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 0942:30	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 0946:30	SYRINGE NUMBER: 5

COMMENTS: Also collected duplicate syringe # 8 Drilled through 2" Asphalt + 6" cement + rebar

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE? YES (NO)

SAMPLE LOCATION: SG12-158

BLOWS PER 6 INCHES: NA	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: 1012
DEPTH OF PENETROMETER POINT (ft): 3.5	TIME OF SOIL GAS SAMPLE: 1012
DEPTH TO BOTTOM OF ROD (FT): 2.5	FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1008	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1012	SYRINGE NUMBER: 4

COMMENTS: Drilled through 2" of Asphalt + 6" cement w/ rebar

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE? YES (NO)

SAMPLE LOCATION: SG12-146

BLOWS PER 6 INCHES NA	OVM MAXIMUM: Ø
	TIME OF OVM MAXIMUM: —
DEPTH OF PENETROMETER POINT (ft): 2	TIME OF SOIL GAS SAMPLE: 1023
DEPTH TO BOTTOM OF ROD (FT): 1.5	FLOW RATE(L/min): 2
TIME START EVACUATION PUMP 1019	VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP 1023	SYRINGE NUMBER: 7

COMMENTS: Drilled through 3" Asphalt + 4" Cement

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE? YES (NO)

SOIL GAS SAMPLE LOCATION DATA

SAMPLE LOCATION: SG12-149

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: Ø
TIME OF OVM MAXIMUM: –
DEPTH OF PENETROMETER POINT (ft): 3
TIME OF SOIL GAS SAMPLE: 1049
DEPTH TO BOTTOM OF ROD (FT): 2
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1045
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: 1049
SYRINGE NUMBER: 2

COMMENTS: Drilled through 3" asphalt + 6" cement W/rebar

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-145

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: Ø
TIME OF OVM MAXIMUM: –
DEPTH OF PENETROMETER POINT (ft): 2
TIME OF SOIL GAS SAMPLE: 1053:30
DEPTH TO BOTTOM OF ROD (FT): 1.5
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: 1049:30
VOLUME OF GAS REMOVED AT SAMPLE TIME (L):
TIME STOP EVACUATION PUMP: 1053:30
SYRINGE NUMBER: 9

COMMENTS: Drilled through 7" Asphalt + 5" cement + rebar

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION: SG12-148

BLOWS PER 6 INCHES: N/A
OVM MAXIMUM: Ø
TIME OF OVM MAXIMUM: –
DEPTH OF PENETROMETER POINT (ft): 2
TIME OF SOIL GAS SAMPLE: 1221
DEPTH TO BOTTOM OF ROD (FT): 1.5
FLOW RATE (L/min): 2
TIME START EVACUATION PUMP: ~~1056~~ 1217
VOLUME OF GAS REMOVED AT SAMPLE TIME (L): 8
TIME STOP EVACUATION PUMP: ~~1102~~ 1221
SYRINGE NUMBER: 1

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES (NO)

SAMPLE LOCATION:

BLOWS PER 6 INCHES:
OVM MAXIMUM:
TIME OF OVM MAXIMUM:
DEPTH OF PENETROMETER POINT (ft):
TIME OF SOIL GAS SAMPLE:
DEPTH TO BOTTOM OF ROD (FT):
FLOW RATE(L/min):
TIME START EVACUATION PUMP:
VOLUME OF GAS REMOVED AT SAMPLE TIME (L):
TIME STOP EVACUATION PUMP:
SYRINGE NUMBER:

COMMENTS:

IS GROUNDWATER PRESENT IN THE SAMPLING PIPE?: YES NO

Calibration and Carrier Gas Certification

MESSER

MG Industries

Parsons Engineering
c/o Seneca Army Depot
Building 323
Romulus, N.Y. 14541
Attn:Kerry Smith

September 18, 1997

Mr. Smith,

MG Industries is pleased to guarantee that the product purchased on your Purchase Order# 731747-00016, will meet or exceed the specifications listed below:

MG Industries

9 Avenue E
Hopkinton, MA 01748

Tel (508) 435-4280
Fax (508) 435-4467

GAS	GRADE	O2	H20	CO2	CO	THC
AIR	ULTRA ZERO	19.5-23.5%	<1ppm	<1ppm	<1ppm	<0.1ppm

Joseph Kelliher
MG/Hopkinton

Liquid Technology
CORPORATION

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

Customer: Pine Environmental Services, Inc.
Date: August 18, 1997
Delivery Receipt: DR-3037
Product: 100 ppm Multi-Component Standard
Lot Number: LTH127GM

Material Specifications

Components	Requested	Actual
TriChloroethyelene	100 ppm	96.8 ppm
cis-1,2 DiChloroethyelene	100 ppm	104.0 ppm
Benzene	100 ppm	99.6 ppm
Toluene	100 ppm	102.1 ppm
p-Xylene	100 ppm	99.0 ppm
Nitrogen	Balance	Balance

- NIST Traceable Standard -

Shelf Life: 24 Months from Date of Certification

Cylinder Volume: 5.1 Cubic Feet
Cylinder Pressure: 340 psi
Cylinder Valve: CGA 350

Certified by: Dave Kagrise

Dave Kagrise

North Orange Blossom Trail • Suite 118 • Orlando • FL 32810 • Ph: (800) 465.0405 • (407) 521.0405 • Fax (407) 521.0407

Soil Gas Anaylisis Chromatographs and Calibration Forms

DATA FOR CALIBRATION STANDARDS

Parsons Engineering Science | CLIENT: ACOE | DATE: 9/29/97

PROJECT: Seneca Army Depot - Soil Gas Survey

LOCATION: SEAD - 12

GC Operator: Kerry Smith

Instrument Specs:

Type of GC: Photovac 10 S Plus
Column Type: CP Sil - 5 Isothermal
Chart Speed: –
Gain: Auto (1000 normal)
Sensitivity: Auto
Gas Flow Rate: 13.3 cc/min
Tank Pressure: 40 psi

FORMULAS:
RF= CONC. / AREA(vs)

Delta RF= (a-b)/[(a+b)/2]

Standard: cis 1,2 DCE, TCE, Benzene, Toluene, p-xylene
Concentration: 1.0 ppm Tedlar or Glass Bulb
Inj. volume: 0.5 ml (Normal)
Analysis #: 15
Time: 1452

Comments: 0.5 normalized concentration

Analyte:	Actual Std. Conc.(ppmV)	x	Injection Vol.(ml)	=	Normalized Conc.(ppmV)	Area (vs)	Retention Time (sec.)	Response Factor	Delta RF
cis 1,2-DCE					1.0	0.5216	47.3	1.92	
Benzene					↓	0.4573	68.0	2.19	
TCE					↓	0.6561	84.6	1.52	
Toluene					↓	0.3057	132.2	3.27	
P-Xylenes					↓	0.2146	303.4	4.66	

Notes: RF = Conc. ÷ Area (vs) ; Actual Std. Conc. is to be obtained from analysis of gas standard ; Conc. normalized to .5 ml injection.

Standard: Same
Concentration: 0.5 ppm Tedlar or Glass Bulb
Inj. volume: 0.25 of 1.0 ppm (0.5 ml normal)
Analysis #: 16
Time: 1535

Comments: 0.5 normalized concentration

Analyte:	Actual Std. Conc.(ppmV)	x	Injection Vol.(ml)	=	Normalized Conc.(ppmV)	Area (vs)	Retention Time (sec.)	Response Factor	Delta RF
cis 1,2-DCE	1.0		0.25		0.5	0.2629	47.2	1.90	
Benzene	↓		↓		↓	0.2328	67.8	2.15	
TCE	↓		↓		↓	0.3803	84.5	1.32	
Toluene	↓		↓		↓	0.1582	134.1	3.16	
P-Xylenes	↓		↓		↓	0.1059	303.7	4.72	

Notes: RF = Conc. ÷ Area (vs) ; Actual Std. Conc. is to be obtained from analysis of gas standard ; Conc. normalized to .5 ml injection.

Standard: Same
Concentration: 0.1 ppm Tedlar or Glass Bulb
Inj. volume: 0.5 ml (normal)
Analysis #: 14
Time: 1436

Comments: 0.5 normalized concentration

Analyte:	Actual Std. Conc.(ppmV)	x	Injection Vol.(ml)	=	Normalized Conc.(ppmV)	Area (vs)	Retention Time (sec.)	Response Factor	Delta RF
cis 1,2-DCE					0.1	0.058	47.4	1.73	
Benzene					↓	0.0611	68.2	1.64	
TCE					↓	0.0767	85.0	1.31	
Toluene					↓	0.0265	134.8	3.77	
P-Xylenes					↓	0.0290	304.5	3.45	

Notes: RF = Conc. ÷ Area (vs) ; Actual Std. Conc. is to be obtained from analysis of gas standard ; Conc. normalized to .5 ml injection.

DATA FOR CALIBRATION STANDARDS

Parsons Engineering Science	CLIENT: ACOE	DATE: 9/29/97
PROJECT:		GC Operator: Kerry Smith
LOCATION:		

Standard: Same
Concentration: 0.04 Tedlar or (Glass Bulb)
Inj. volume: 0.2 ml of 100 ppb
Analysis #: 8
Time: 1338

Comments: 0.5 normalized injection

Analyte:	Actual Std. Conc.(ppmV)	x	Injection Vol.(ml)	=	Normalized Conc.(ppmV)	Area (vs)	Retention Time (sec.)	Response Factor	Delta RF
cis 1,2-DCE	0.1		0.2		0.04	0.0218	46.5	1.84	
Benzene						0.0313	67.2	1.28	
TCE						0.0337	83.7	1.19	
Toluene						0.0092	133.6	4.35	
P-Xylenes						0.0083	301.6	4.82	

Notes: RF = Conc. ÷ Area (vs) ; Actual Std. Conc. is to be obtained from analysis of gas standard ; Conc. normalized to .5 ml injection.

Standard: Same
Concentration: 0.01 Tedlar or (Glass Bulb)
Inj. volume: 0.05 of 100 ppb
Analysis #: ~~KKS 1406~~ 11
Time: 1406

Comments:

Analyte:	Actual Std. Conc.(ppmV)	x	Injection Vol.(ml)	=	Normalized Conc.(ppmV)	Area (vs)	Retention Time (sec.)	Response Factor	Delta RF
cis 1,2-DCE	0.1		0.05		0.01	0.00727	46.4	1.38	
Benzene						0.0238	67.2	0.42	
TCE						0.0114	83.8	0.88	
Toluene						0.0022	132.9	4.55	
P-Xylenes						0.00177	305.3	5.65	

Notes: RF = Conc. ÷ Area (vs) ; Actual Std. Conc. is to be obtained from analysis of gas standard ; Conc. normalized to .5 ml injection.

PARSONS MAIN, INC.

PARSONS

CLIENT ACOE · Seneca Army Depot · SEAD 12

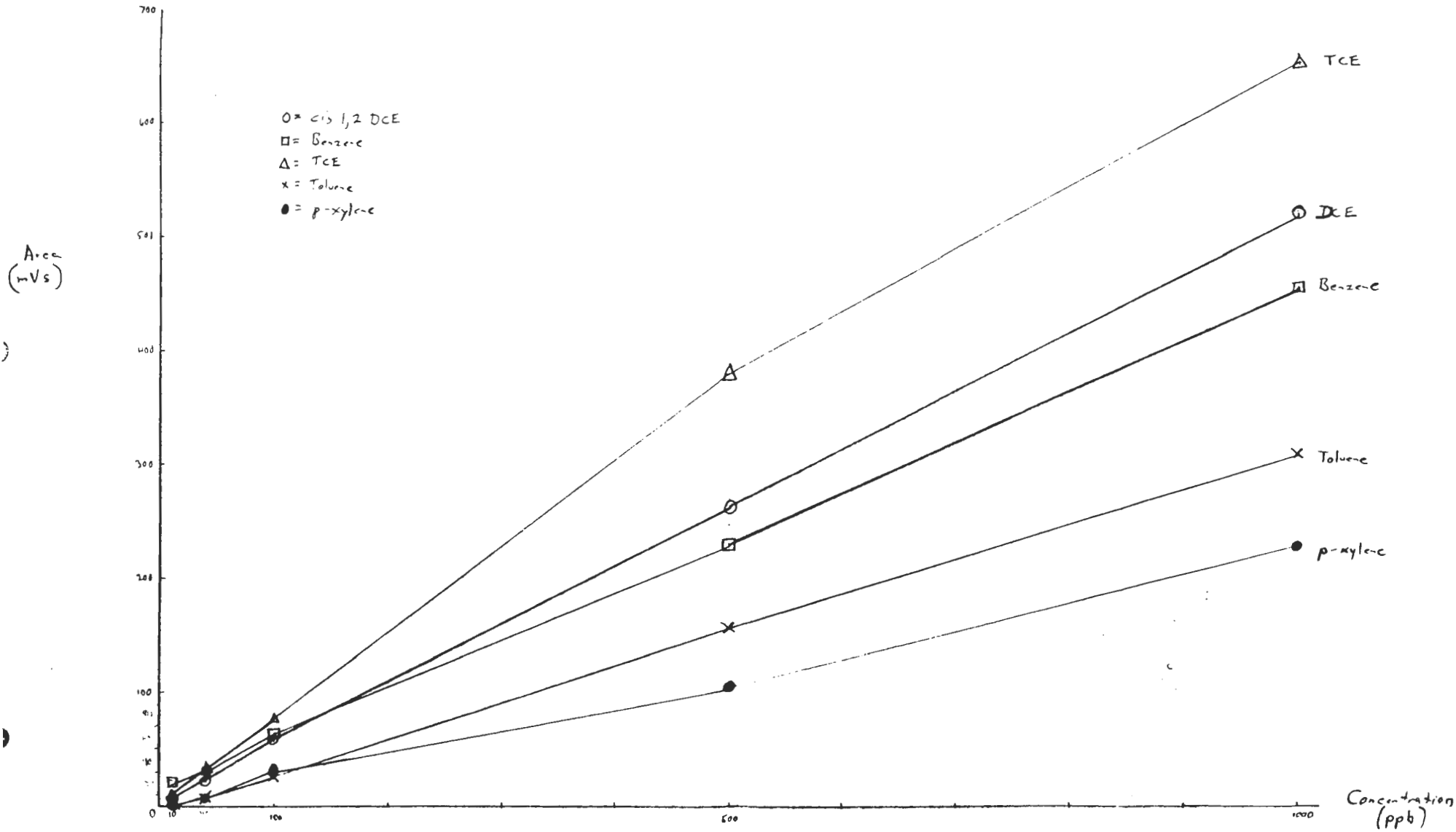
SUBJECT 5 Point Calibration Curve

10, 40, 100, 500, 1000 ppb Cal. Std. Dilutions

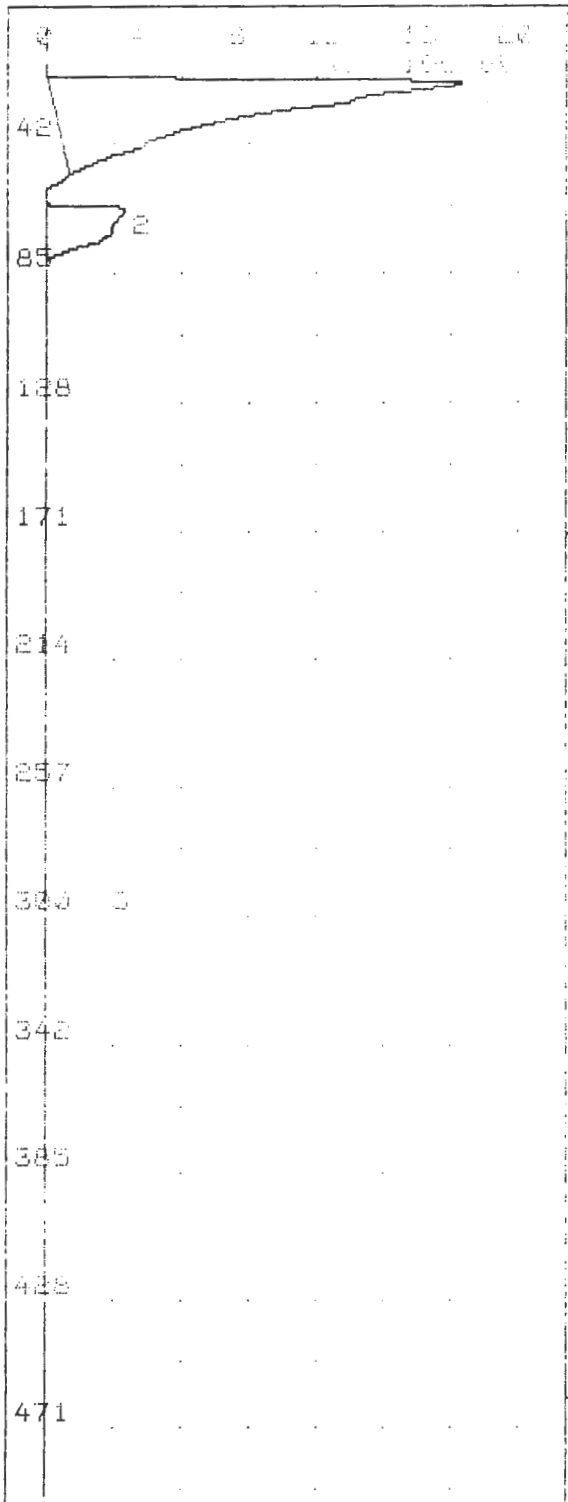
JOB NO _____ SHEET ____ OF ____

BY Kerry Smith DATE 9/29/97

CKD _____ REVISION _____



Analysis [illegible] [illegible] Report



[illegible] 1.27 [illegible]
[illegible] 6.97 11:57
Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.200	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	34/35	C
Amb Temp	34 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	[illegible] 86 mVs	20.0
2	Unknown	7.474 mVs	62.0
3	Unknown	6.966 mVs	291.4

Notes

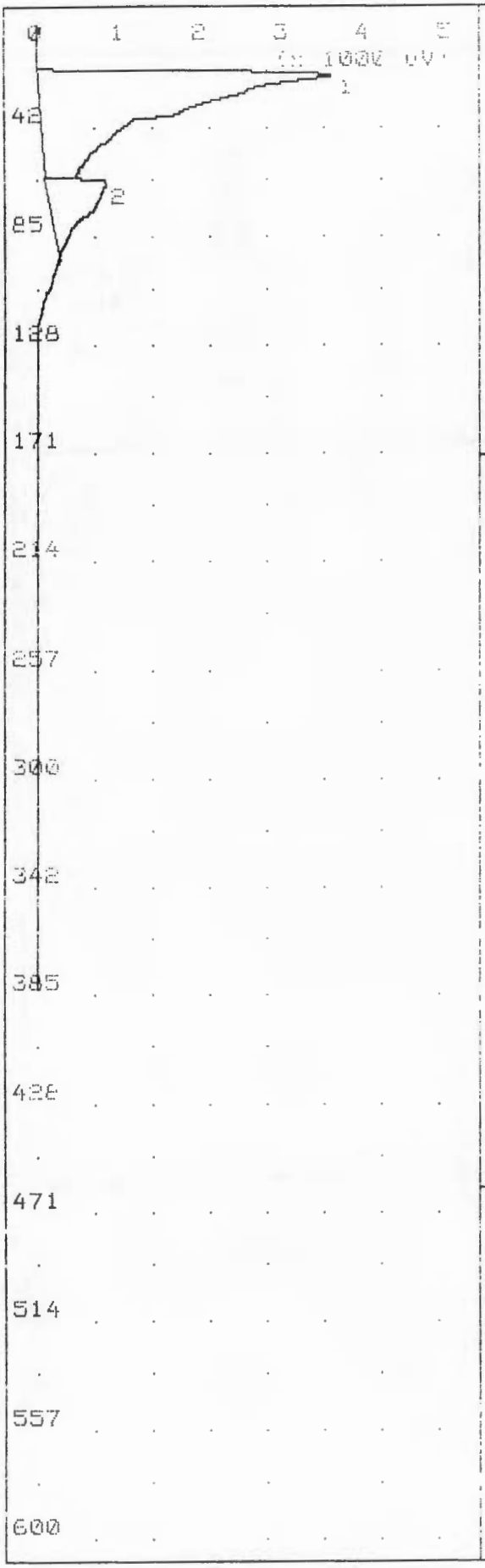
Seneca Army Depot
SFAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 0

Syringe Blank : yes
Bulb Blank :

Analysis #2 1051 SI Function Analysis Report



Printed : Oct 6,97 12:14
Run at : Oct 6,97 12:07

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	34/35	C
Amb Temp	34 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	71.46 mVs	19.6
2	Unknown	12.35 mVs	61.6

Notes

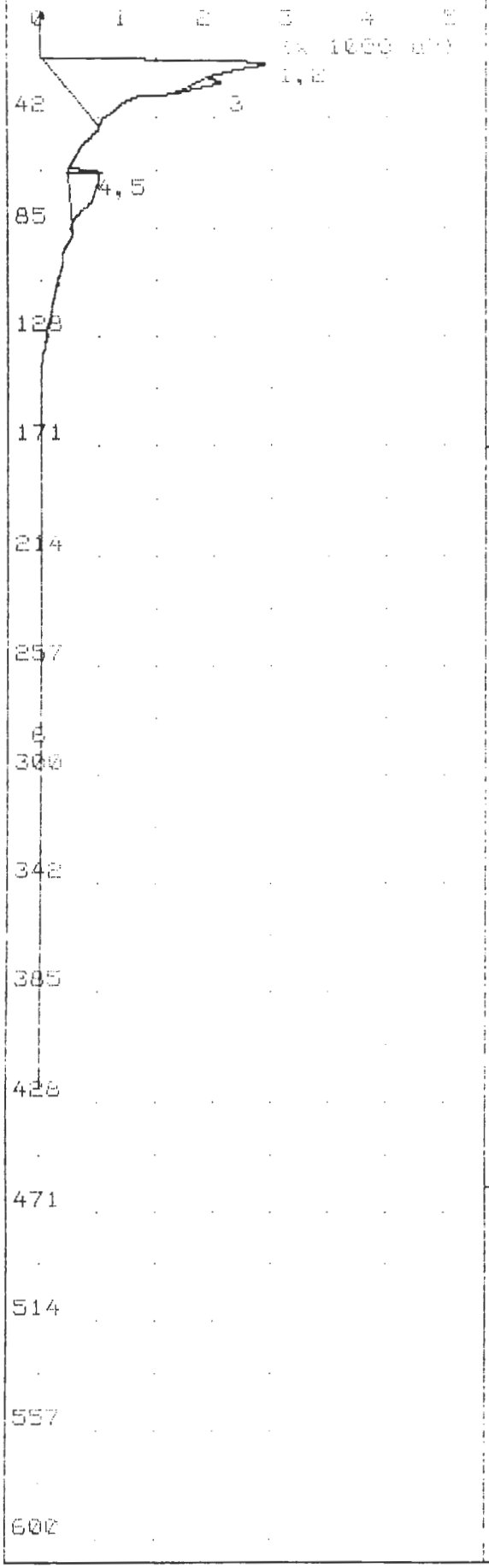
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 6

Syringe Blank : Yes
Bulb Blank :

Analysis #3 HP- GC Function Analysis Report



Printed : Oct 6,97 12:22
Run at : Oct 5,97 11:15

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	33/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.249 mVs	16.8
2	Unknown	33.60 mVs	20.2
3	Unknown	0.816 mVs	26.8
4	Unknown	0.515 mVs	61.8
5	Unknown	4.859 mVs	62.8
6	Unknown	1.894 mVs	273.6

Notes

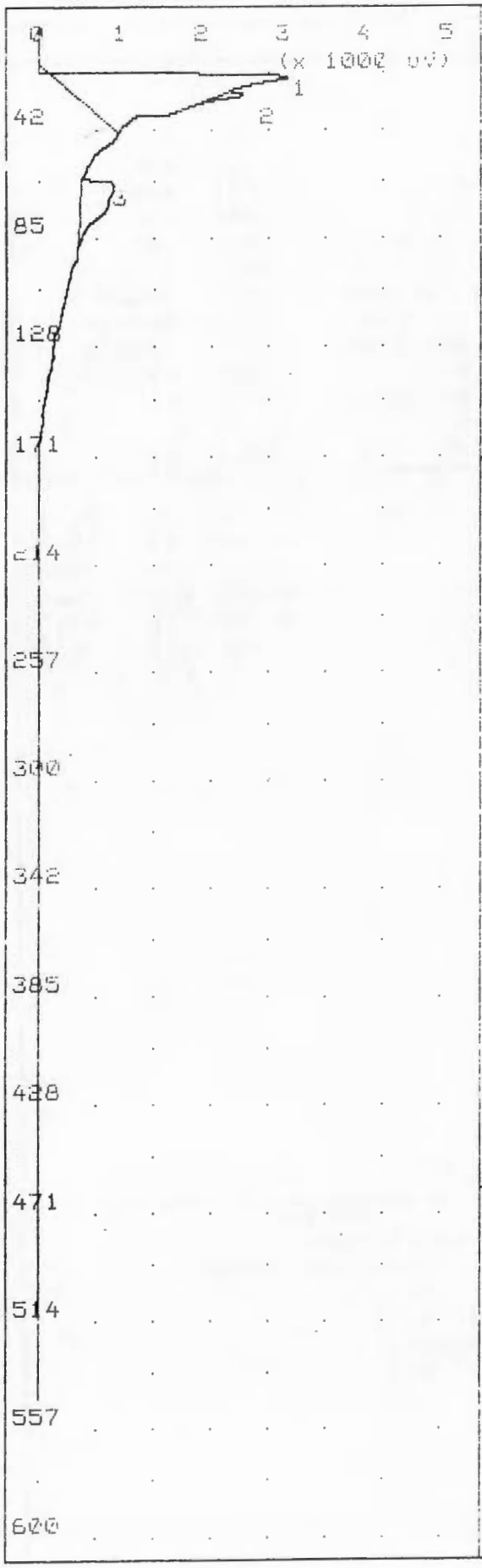
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 1

Syringe Blank : Yes
Bulb Blank :

Analysis #4 10ft GC Function Analysis Report



Printed : Oct 6,97 12:33
Run at : Oct 6,97 12:24

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	36.96 mVs	19.7
2	Unknown	0.773 mVs	26.2
3	Unknown	5.918 mVs	62.2

Notes

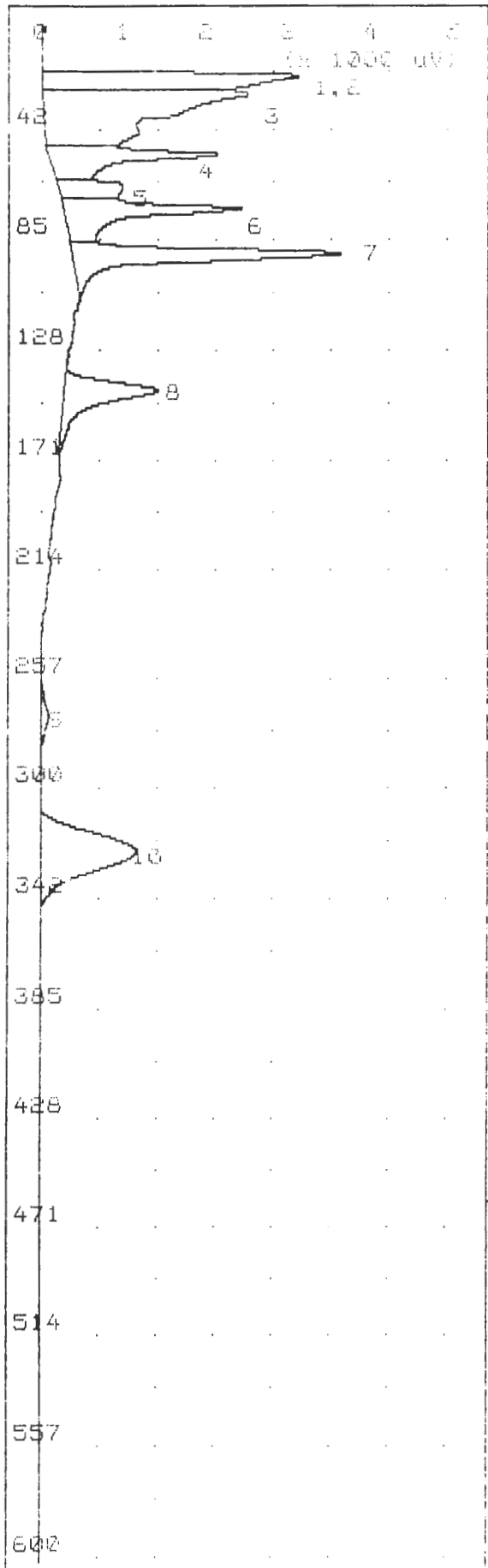
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : A

Syringe Blank : Yes
Bulb Blank : Yes

Analysis #3 111' of Function Analysis Report



Printed : Oct 6,91 12:51
Run at : Oct 5,37 12:41

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.309 mVs	17.0
2	Unknown	22.32 mVs	19.6
3	Unknown	35.29 mVs	26.8
4	Unknown	12.40 mVs	49.3
5	Unknown	5.422 mVs	61.8
6	Unknown	14.27 mVs	70.9
7	Unknown	19.16 mVs	88.5
8	Unknown	10.72 mVs	141.0
9	Unknown	2.592 mVs	268.2
10	Unknown	23.46 mVs	321.3

Syringe A used to transfer 100 ppm to Bulb - still traces of std.
increased flow rate to 14

Notes

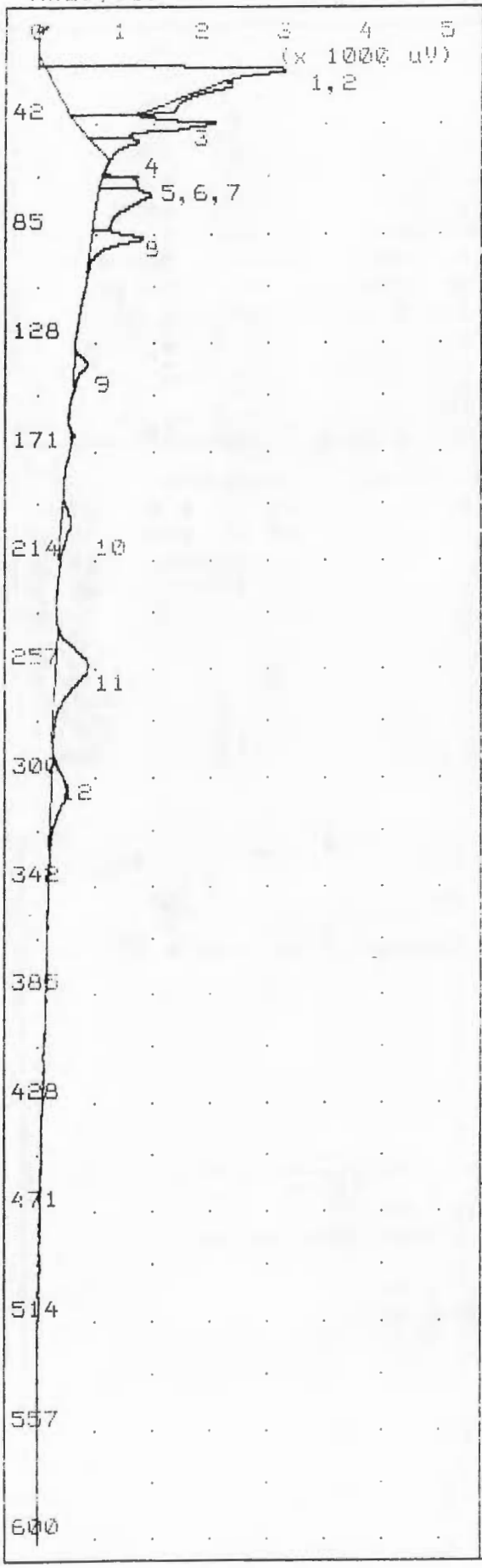
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : A

Syringe Blank : Yes
Bulb Blank : Yes

Analysis #6 1094 GC Function Analysis Report



Printed : Oct 6,97 13:11
Run at : Oct 6,97 13:01

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	38.65 mVs	18.6
2	Unknown	2.149 mVs	24.8
3	Unknown	9.682 mVs	39.2
4	Unknown	2.529 mVs	46.6
5	Unknown	0.209 mVs	61.0
6	Unknown	2.201 mVs	63.6
7	Unknown	5.999 mVs	67.6
8	Unknown	3.531 mVs	84.6
9	Unknown	1.124 mVs	133.7
10	Unknown	1.336 mVs	198.0
11	Unknown	7.018 mVs	252.8
12	Unknown	3.205 mVs	302.9

Notes

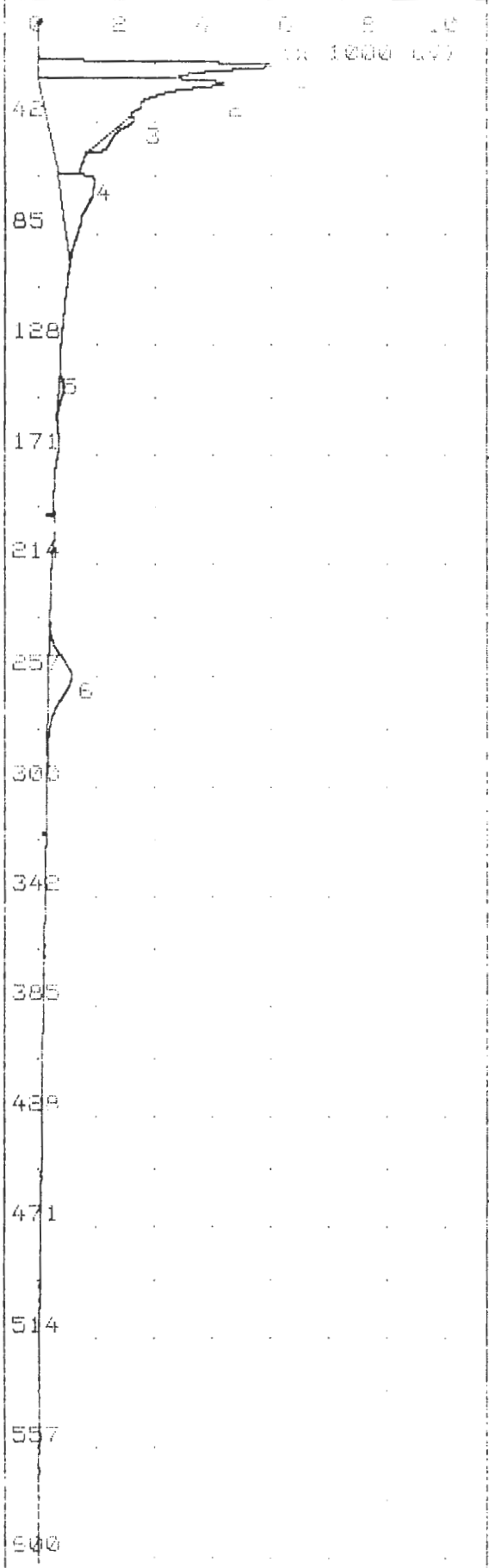
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : A

Syringe Blank : Yes
Bulb Blank : Yes

Analysis #7 1051 GC Function Analysis Report



Printed : Oct 6,97 11:01
Run at : Oct 6,97 10:50

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	31.82 mVs	18.2
2	Unknown	71.02 mVs	25.2
3	Unknown	3.079 mVs	39.3
4	Unknown	15.21 mVs	62.3
5	Unknown	1.160 mVs	142.4
6	Unknown	10.64 mVs	253.8

Notes

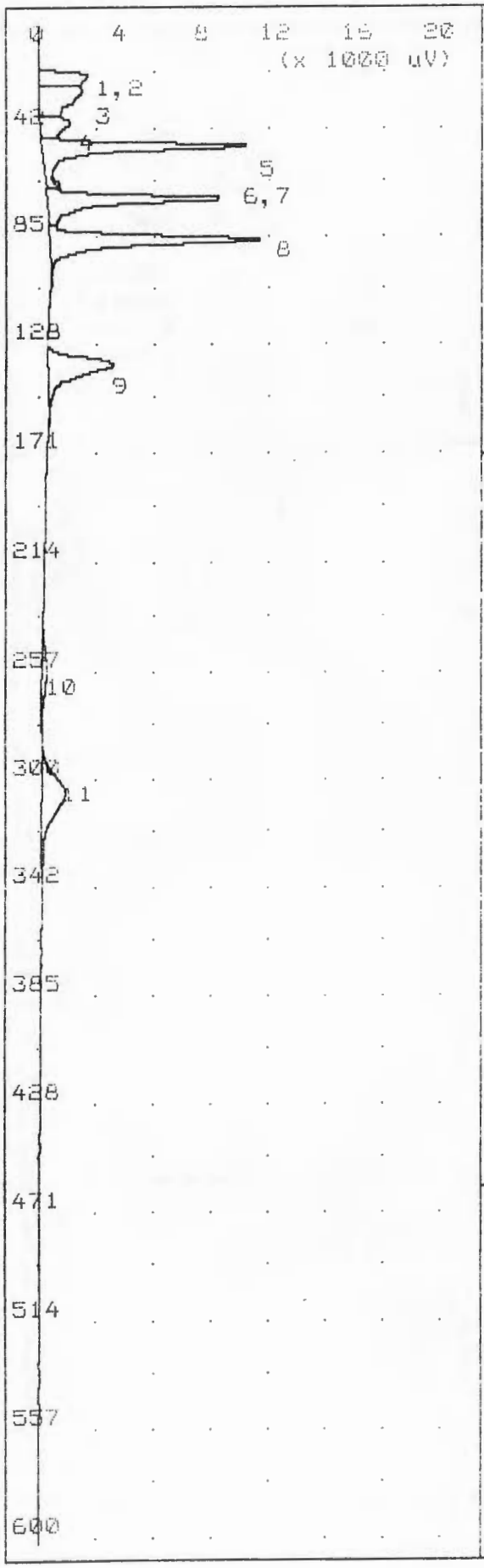
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 4

Syringe Blank : Yes
Built Blank :

Analysis #8 10S+ GC Function Analysis Report



Printed : Oct 6,97 14:12
Run at : Oct 6,97 14:02

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.	
1	Unknown	0.111 mVs	15.6	
2	Unknown	15.15 mVs	19.2	
3	Unknown	20.17 mVs	25.0	
4	Unknown	10.11 mVs	37.5	
5	Unknown	44.81 mVs	47.0	cis 1,2 DCE
6	Unknown	0.551 mVs	62.5	
7	Unknown	39.70 mVs	67.6	Benzene
8	Unknown	51.76 mVs	84.2	TCE
9	Unknown	28.25 mVs	133.6	Toluene
10	Unknown	3.924 mVs	253.8	
11	Unknown	20.44 mVs	302.9	p-xylene

Notes

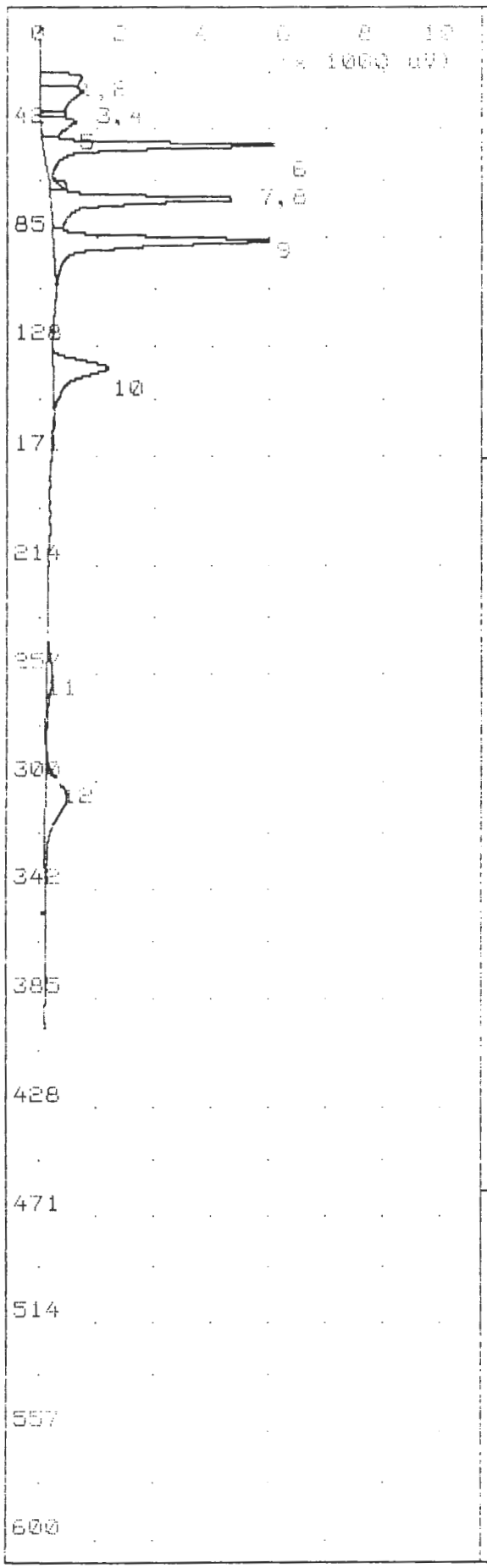
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Volume : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #9 1004 GC Function Analysis Report



Printed : Sat 6.17 15:15
Run at : Sat 6.17 15:10

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.	
1	Unknown	0.144	mVs	16.8	
2	Unknown	7.173	mVs	19.8	
3	Unknown	8.672	mVs	25.2	
4	Unknown	1.740	mVs	34.0	
5	Unknown	5.373	mVs	37.5	
6	Unknown	31.08	mVs	46.9	cis 1,2 DCE
7	Unknown	0.565	mVs	61.8	
8	Unknown	20.41	mVs	67.7	Benzene
9	Unknown	20.80	mVs	84.[illegible]	TCE
10	Unknown	18.01	mVs	134.0	Toluene
11	Unknown	2.402	mVs	255.2	
12	Unknown	9.165	mVs	307.4	p-xylene

Notes

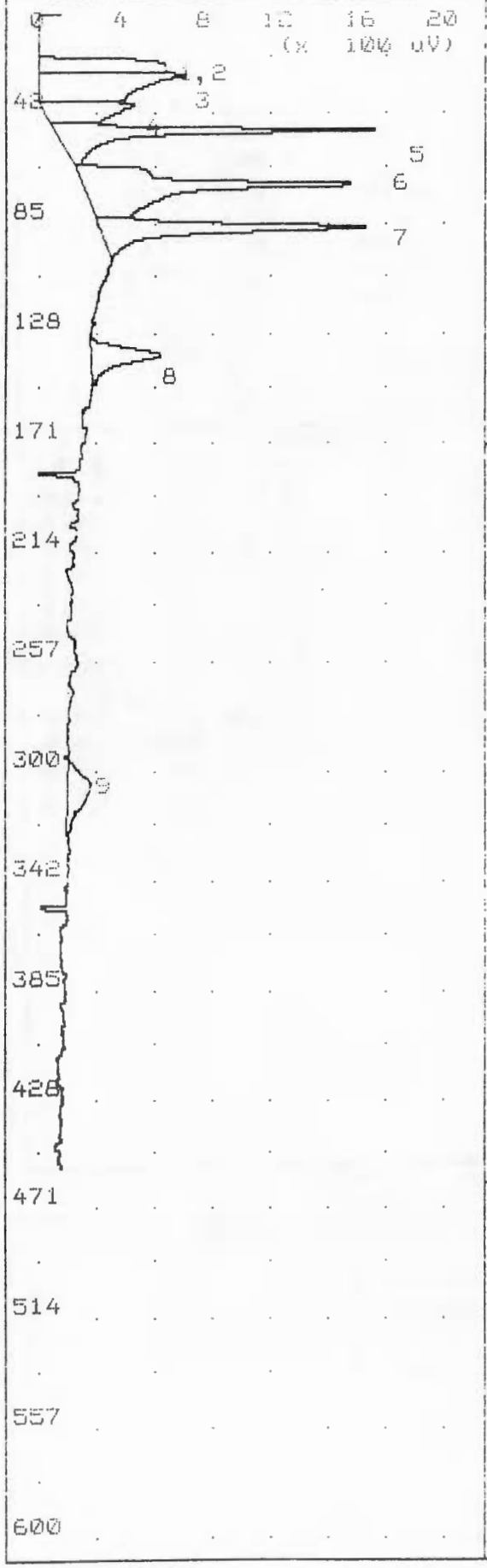
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 50 ppb
Inj. Volume : 0.25 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #10 1064 GC Function Analysis Report



Printed : Oct 6,97 15:35
Run at : Oct 6,97 15:28

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.	
1	Unknown	0.118 mVs	16.6	
2	Unknown	4.340 mVs	21.6	
3	Unknown	7.063 mVs	25.2	
4	Unknown	2.862 mVs	37.6	
5	Unknown	5.559 mVs	46.8	cis 1,2 DCE
6	Unknown	9.206 mVs	67.7	Benzene
7	Unknown	6.198 mVs	84.4	TCE
8	Unknown	2.517 mVs	133.7	Toluene
9	Unknown	1.632 mVs	302.1	p-xylene

Notes

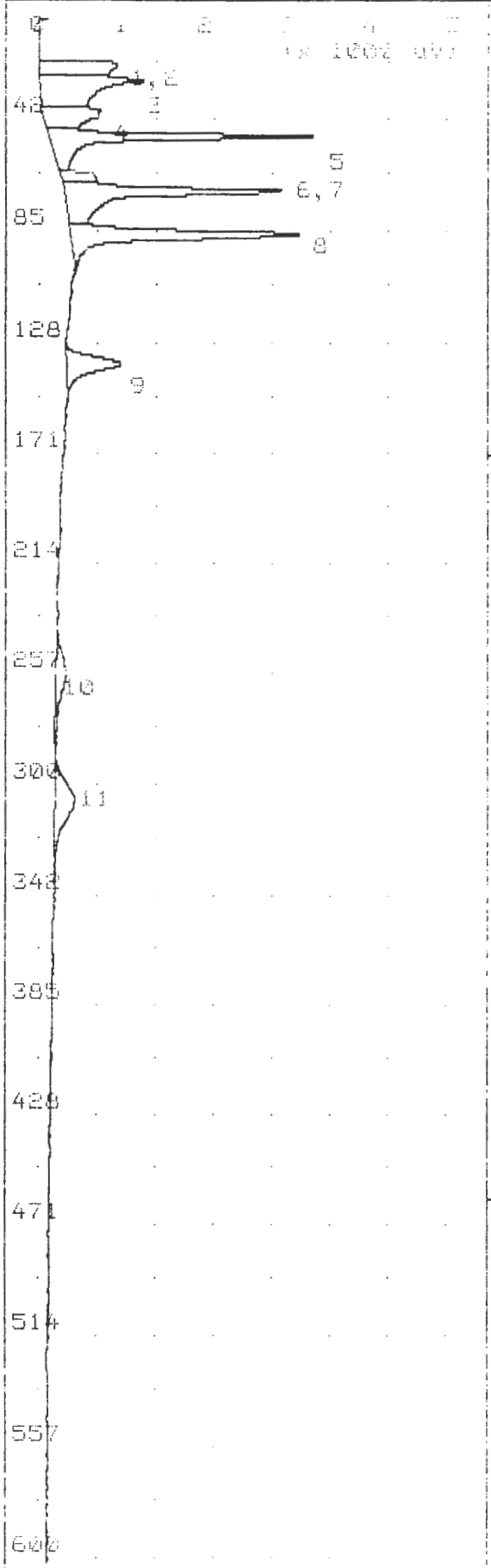
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 10 ppb
Inj. Volume : 0.05 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #11 [illegible] Analysis Report



Printed : Sat 6.27 15:00
Run at : Sat 6.27 15:55

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	23	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.109 mVs	16.1
2	Unknown	6.374 mVs	18.2
3	Unknown	9.925 mVs	25.1
4	Unknown	4.790 mVs	37.2
5	Unknown	10.96 mVs	46.6
6	Unknown	1.766 mVs	63.2
7	Unknown	12.43 mVs	67.4
8	Unknown	12.22 mVs	84.2
9	Unknown	4.779 mVs	134.2
10	Unknown	2.091 mVs	255.2
11	Unknown	4.164 mVs	303.4

Notes

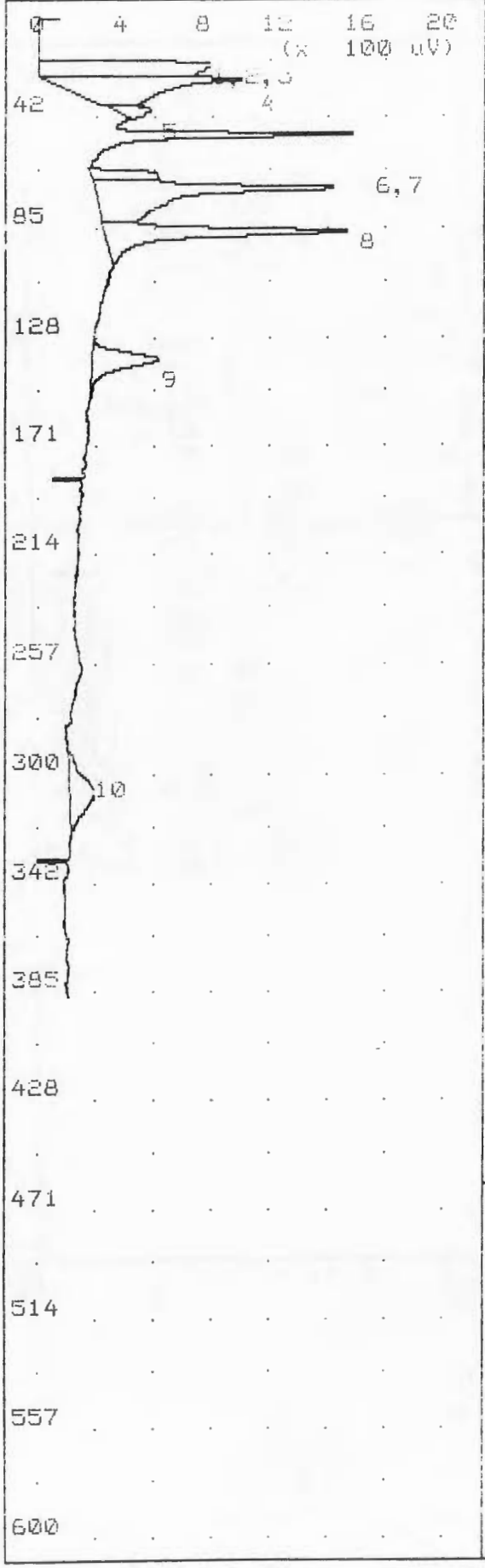
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : ~~12~~ 20 ppb
Inj. Volume : ~~0.25~~ 0.01 ml

Syringe # : 8

Syringe Blank :
Bulb Blank :

Analysis #12 109+ GC Function Analysis Report



Printed : Oct 6,97 16:20
Run at : Oct 6,97 16:13

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.	
1	Unknown	0.024 mVs	15.2	
2	Unknown	0.041 mVs	16.2	
3	Unknown	5.877 mVs	19.2	
4	Unknown	5.884 mVs	25.2	
5	Unknown	0.555 mVs	37.3	
6	Unknown	1.412 mVs	62.3	
7	Unknown	7.165 mVs	67.6	1.39
8	Unknown	5.490 mVs	84.4	1.82
9	Unknown	2.241 mVs	134.4	4.46
10	Unknown	2.141 mVs	303.7	4.67

Notes

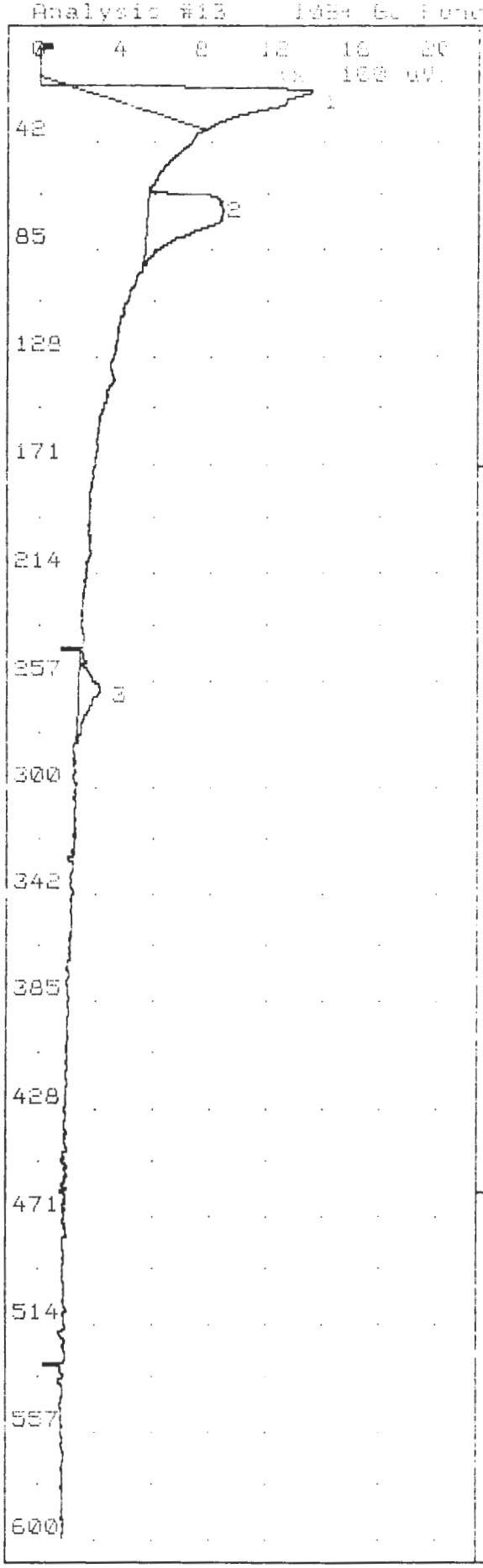
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 10 ppb
Inj. Volume : 0.05 ml

Syringe # : S

Syringe Blank :
Bulb Blank :

Analysis #13 1984 Gc Function Analysis Report



Printed : Oct 6,97 16:31
Run at : Oct 6,97 16:21

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	11.99 mVs	20.0
2	Unknown	6.479 mVs	63.2
3	Unknown	1.574 mVs	257.6

Notes

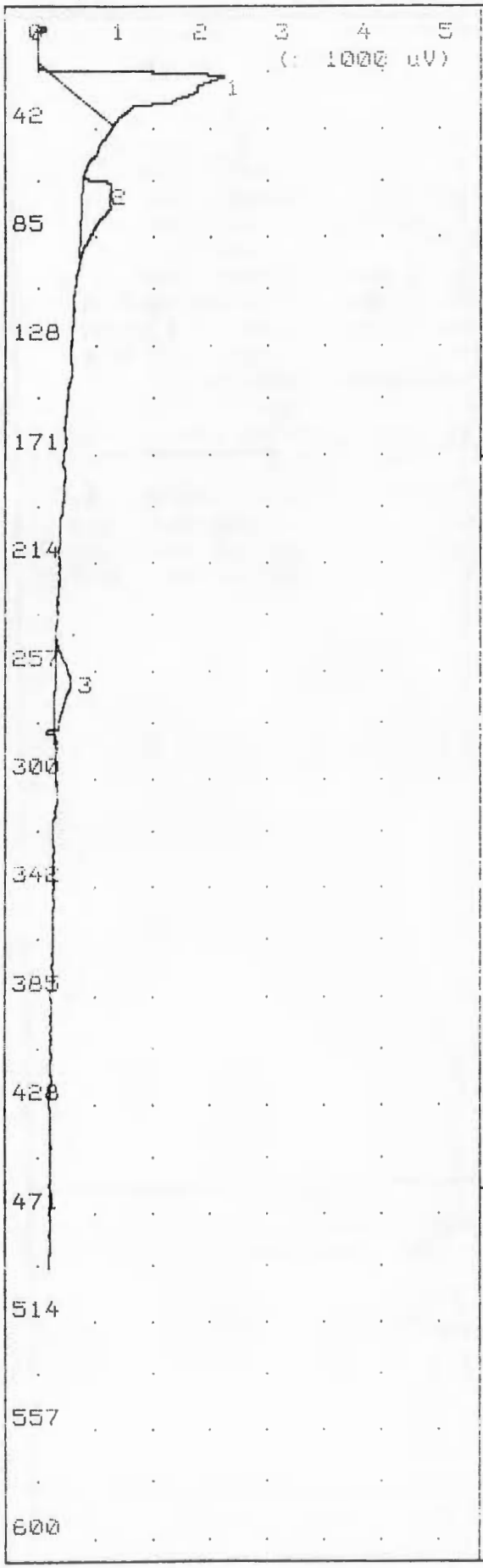
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 5

Syringe Blank : Yes
Bulb Blank :

Analysis #14 105: EC Function Analysis Report



Printed : Oct 6,97 16:41
Run at : Oct 6,97 16:33

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	24.42 mVs	19.6
2	Unknown	6.751 mVs	63.2
3	Unknown	3.502 mVs	257.6

Notes

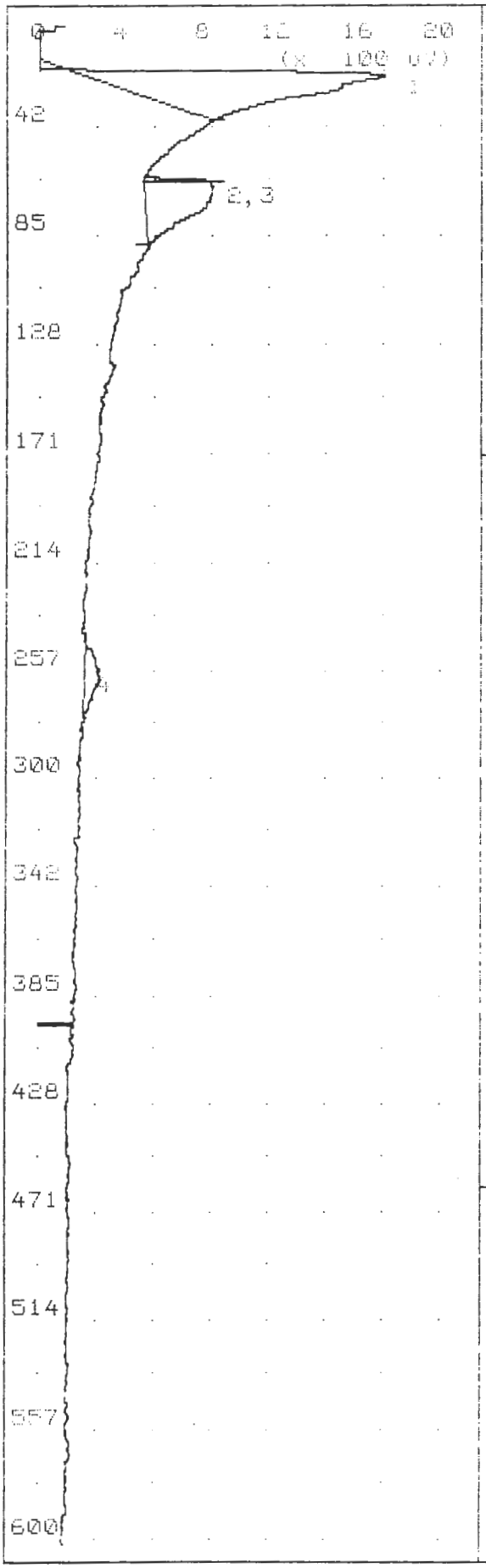
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 8

Syringe Blank : Yes
Bulb Blank :

Analysis #15 1054 62 Function Analysis Report



Printed : Oct 6,97 16:53
Run at : Oct 6,97 16:43

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	18.02 mVs	19.8
2	Unknown	0.427 mVs	61.8
3	Unknown	5.428 mVs	63.8
4	Unknown	1.199 mVs	257.3

Notes

Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 4

Syringe Blank : Yes
Bulb Blank :

SOIL GAS 2-POINT CALIBRATION

Parsons Engineering-Science	CLIENT: ACOE	DATE: 10/6/97
PROJECT: Seneca Army Depot Soil Gas Survey LOCATION: SEAD-12		GC Operator: Kerry Smith

Instrument Specs:

Type of GC:	Photovac 10 S Plus
Column Type:	CPS.1-5 Isothermal
Col. Temp. (°C):	35°C
Chart Speed:	Auto
Gain:	Auto
Sensitivity:	Auto
Gas Flow Rate:	14 cc/min
Tank Pressure:	40 psi

BTEX Calibration Gas Specifications

Manufacturer: Liquid Tech for Pine Environmental Services Lot#: LTH127GM

Concentration (ppmV): 100 ppm

Concentration (ppmV)		
	cis 1,2-DCE	104.0
	Benzene	99.6
	TCE	96.8
	Toluene	102.1
	P-Xylene	99.0

Analysis A
Inj. #: 8

100 ppb

A 0.5 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF			
cis 1,2-DCE	47	0.1	0.04481	2.23			
Benzene	67.6	↓	0.0397	2.52			
TCE	84.2		0.05176	1.93			
Toluene	133.6		0.02825	3.54			
P-Xylene	302.9		0.02044	4.89			

Comments:
Concentration is normalized to 0.5 ml.

Analysis B
Inj. #: 9

50 ppb

A 0.25 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF	Delta RF	RF avg.	
cis 1,2-DCE	46.9	0.05	0.02108	2.37			
Benzene	67.7	↓	0.02041	2.45			
TCE	84.4		0.0258	1.94			
Toluene	134.0		0.01201	4.16			
P-Xylene	303.4		0.007165	5.45			

Comments:
Concentration is normalized to 0.5 ml.
Delta RF = (A-B)/(A+B)/2

Analysis C (if RF relatative % difference is greater than 50%)
Inj. #:

10 ppb

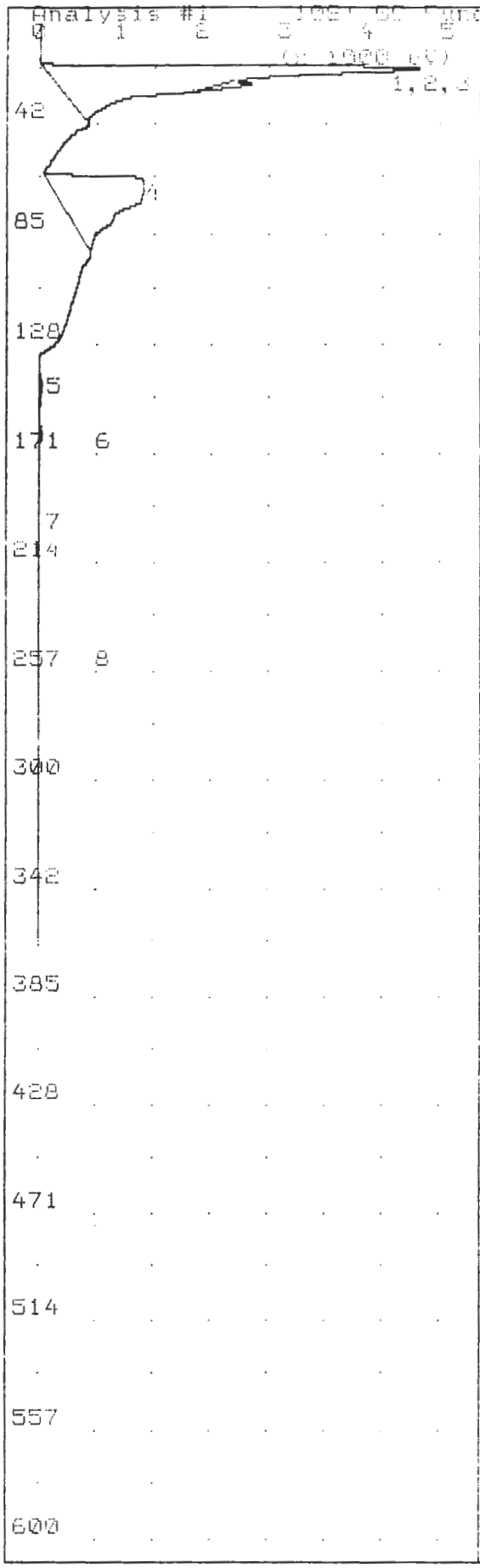
A 0.05 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF	Delta RF	RF avg.	
cis 1,2-DCE	46.8	0.01	0.005559	1.80			
Benzene	67.7	↓	0.009206	1.09			
TCE	84.4		0.006198	1.61			
Toluene	133.7		0.002517	3.97			
P-Xylene	302.1		0.001632	6.12			

Comments:
Concentration is normalized to 0.5 ml.

Oct 6, 97

Analysis #1 [illegible] Analysis Report



Printed : Sep 29,97 12:41
Run at : Sep 29,97 12:34

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	28	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.285	mVs	15.7
2	Unknown	49.58	mVs	18.3
3	Unknown	0.890	mVs	24.7
4	Unknown	18.91	mVs	63.7
5	Unknown	2.180	mVs	142.8
6	Unknown	1.120	mVs	162.8
7	Unknown	0.896	mVs	187.0
8	Unknown	1.435	mVs	250.1

Notes

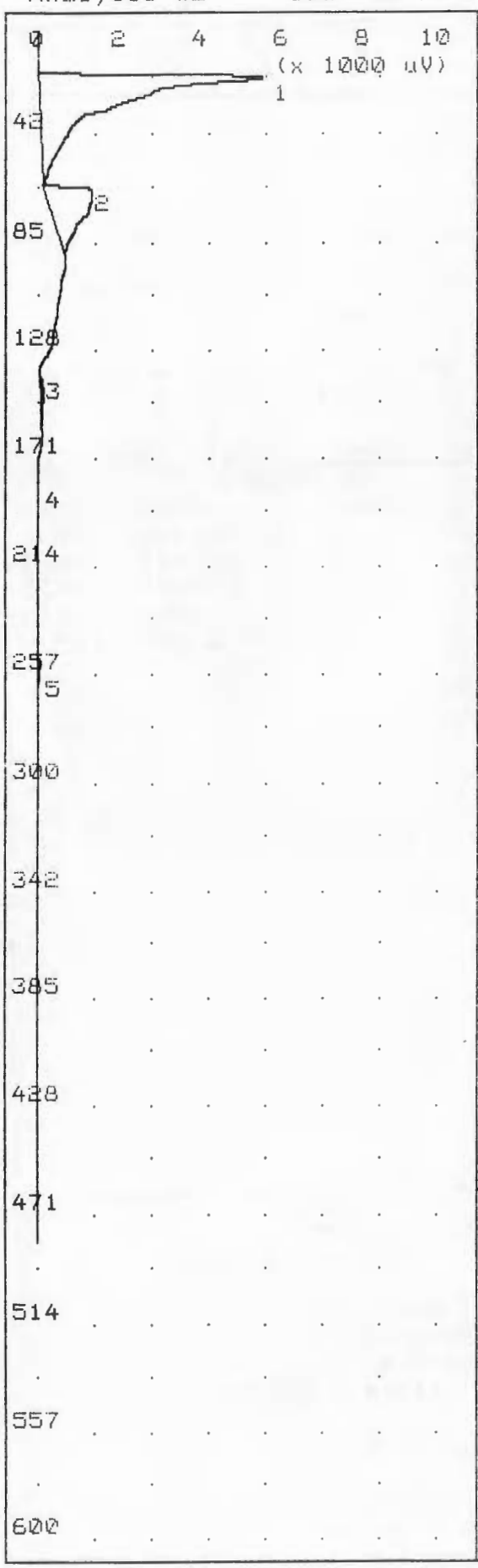
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 3

Syringe Blank : Yes
Bulb Blank :

Analysis #2 10S+ GC Function Analysis Report Oct 6, 97



Printed : Sep 29,97 12:50
Run at : Sep 29,97 12:42

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.055	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	28	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	85.60	mVs	18.1
2	Unknown	17.65	mVs	62.0
3	Unknown	0.928	mVs	141.2
4	Unknown	1.701	mVs	182.4
5	Unknown	1.596	mVs	252.5

Notes

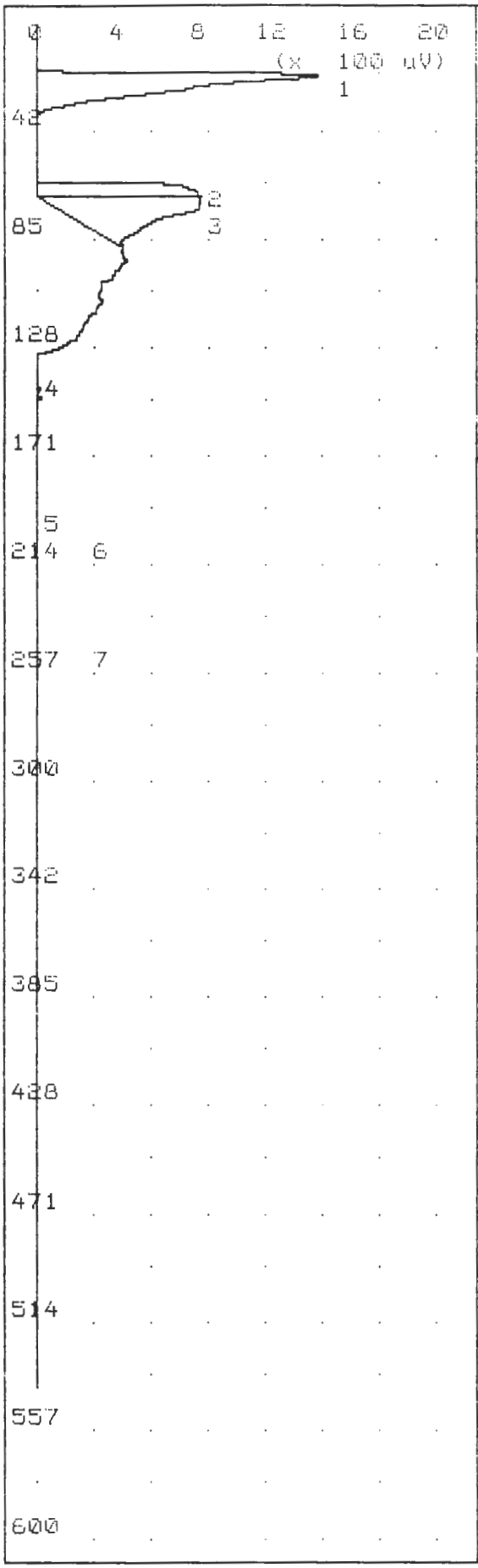
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 2

Syringe Blank : Yes
Bulb Blank :

Analysis #3 1054 GC Function Analysis Report Oct 6, 97



Printed : Sep 29,97 13:01
Run at : Sep 29,97 12:52

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	29	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	21.60 mVs	19.2
2	Unknown	6.282 mVs	66.2
3	Unknown	9.826 mVs	71.2
4	Unknown	1.163 mVs	142.2
5	Unknown	0.882 mVs	189.4
6	Unknown	2.588 mVs	200.4
7	Unknown	1.804 mVs	249.6

Notes

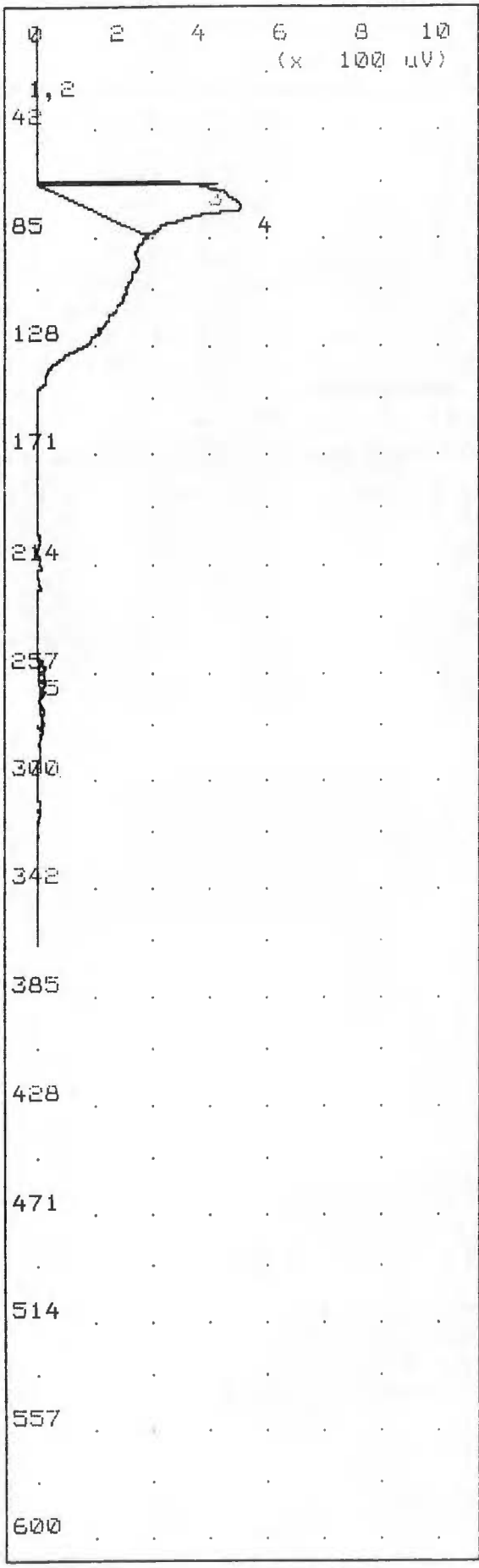
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : B

Syringe Blank : Yes
Bulb Blank : Yes

Analysis #4 10S+ GC Function Analysis Report Oct 6, 97



Printed : Sep 29,97 13:08
Run at : Sep 29,97 13:02

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	30 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	1.356 mVs	23.0
2	Unknown	1.268 mVs	24.0
3	Unknown	1.801 mVs	62.0
4	Unknown	12.05 mVs	71.2
5	Unknown	0.494 mVs	251.4

Notes

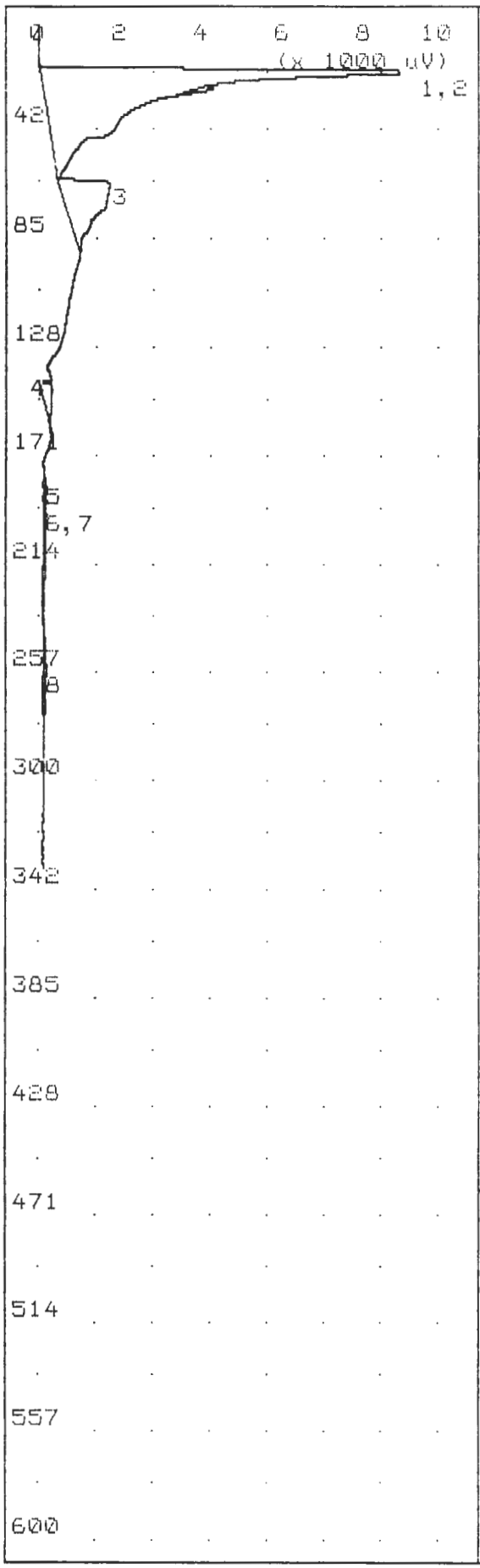
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : No Inject

Syringe # :

Syringe Blank :

Analysis #5 10S+ GC Function Analysis Report



Printed : Sep 29,97 13:16
Run at : Sep 29,97 13:10

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	30	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	127.3 mVs	17.5
2	Unknown	0.886 mVs	24.5
3	Unknown	19.70 mVs	62.5
4	Unknown	4.509 mVs	139.8
5	Unknown	0.174 mVs	181.8
6	Unknown	0.240 mVs	186.8
7	Unknown	1.384 mVs	195.8
8	Unknown	0.923 mVs	253.0

Notes

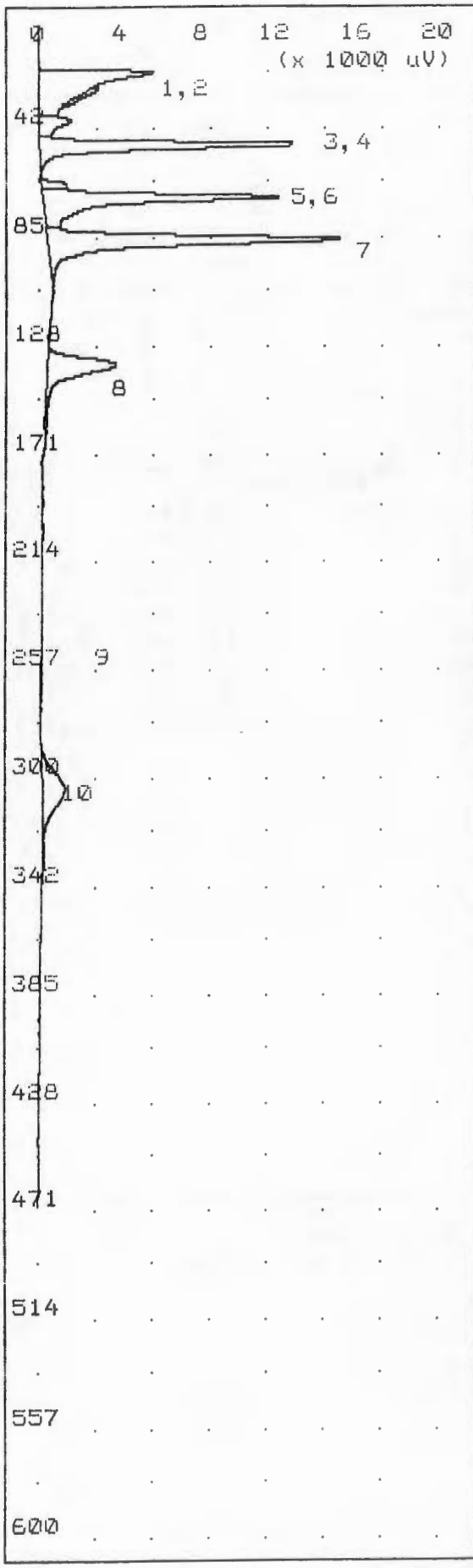
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : A

Syringe Blank : Yes
Bulb Blank : Yes

Analysis #6 10S+ GC Function Analysis Report



Printed : Sep 29,97 13:26
Run at : Sep 29,97 13:18

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.074	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.
1	Unknown		63.42	mVs	18.2
2	Unknown		1.941	mVs	24.8
3	Unknown		12.59	mVs	36.8
4	Unknown	cis 1,2 DCE	50.20	mVs	46.3
5	Unknown		3.602	mVs	62.1
6	Unknown	Benzene	53.22	mVs	67.0
7	Unknown	TCE	71.82	mVs	83.6
8	Unknown	Toluene	25.80	mVs	132.9
9	Unknown		0.775	mVs	245.0
10	Unknown	p-xylene	19.96	mVs	301.0

Notes

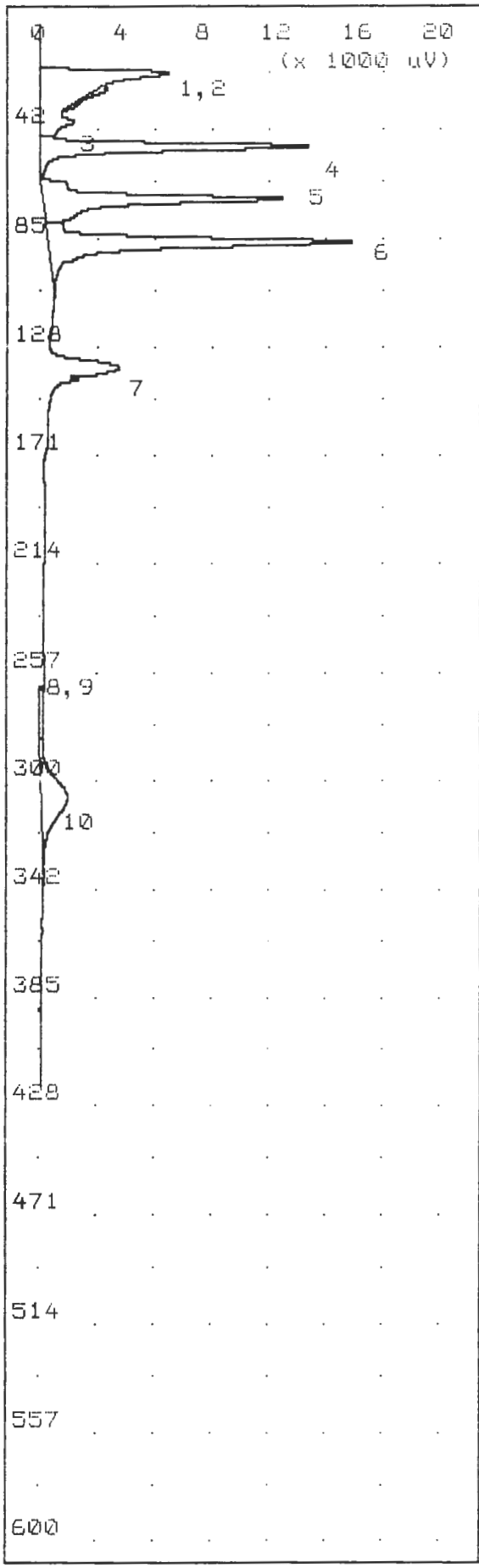
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Volume : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #7 105+ GC Function Analysis Report



Printed : Sep 29,97 13:34
Run at : Sep 29,97 13:27

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	84.10 mVs	18.1
2	Unknown	2.784 mVs	24.4
3	Unknown	2.502 mVs	37.0
4	Unknown cis 1,2 DCE	54.09 mVs	46.6
5	Unknown Benzene	59.10 mVs	67.4
6	Unknown TCE	78.70 mVs	84.1
7	Unknown Toluene	26.57 mVs	134.1
8	Unknown	3.501 mVs	255.4
9	Unknown	4.877 mVs	260.5
10	Unknown p xylene	27.27 mVs	304.0

Notes

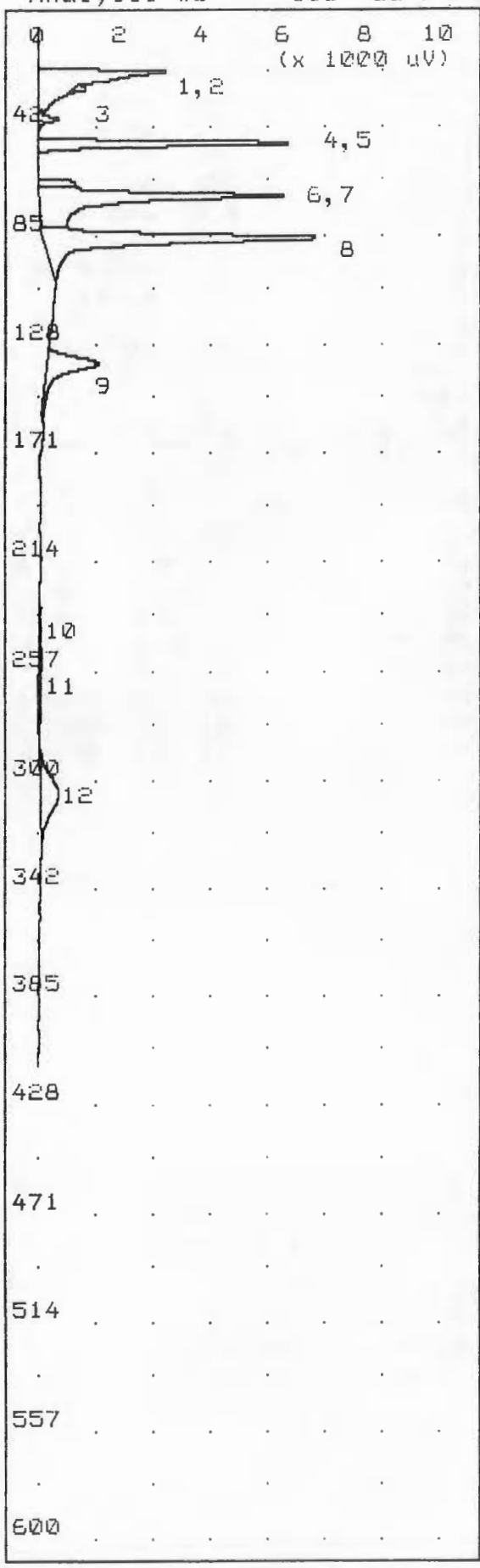
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Volume : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #8 10S+ GC Function Analysis Report



Printed : Sep 29,97 13:45
Run at : Sep 29,97 13:38

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		0.248 mVs	15.7
2	Unknown		38.08 mVs	18.2
3	Unknown		0.570 mVs	25.0
4	Unknown		8.383 mVs	37.2
5	Unknown	cis1,2 DCE	21.79 mVs	46.5
6	Unknown		4.110 mVs	61.9
7	Unknown	Benzene	31.34 mVs	67.2
8	Unknown	TCE	33.73 mVs	83.7
9	Unknown	Toluene	9.169 mVs	133.6
10	Unknown		0.005 mVs	229.6
11	Unknown		1.638 mVs	252.8
12	Unknown	p-xylene	8.254 mVs	301.6

Notes

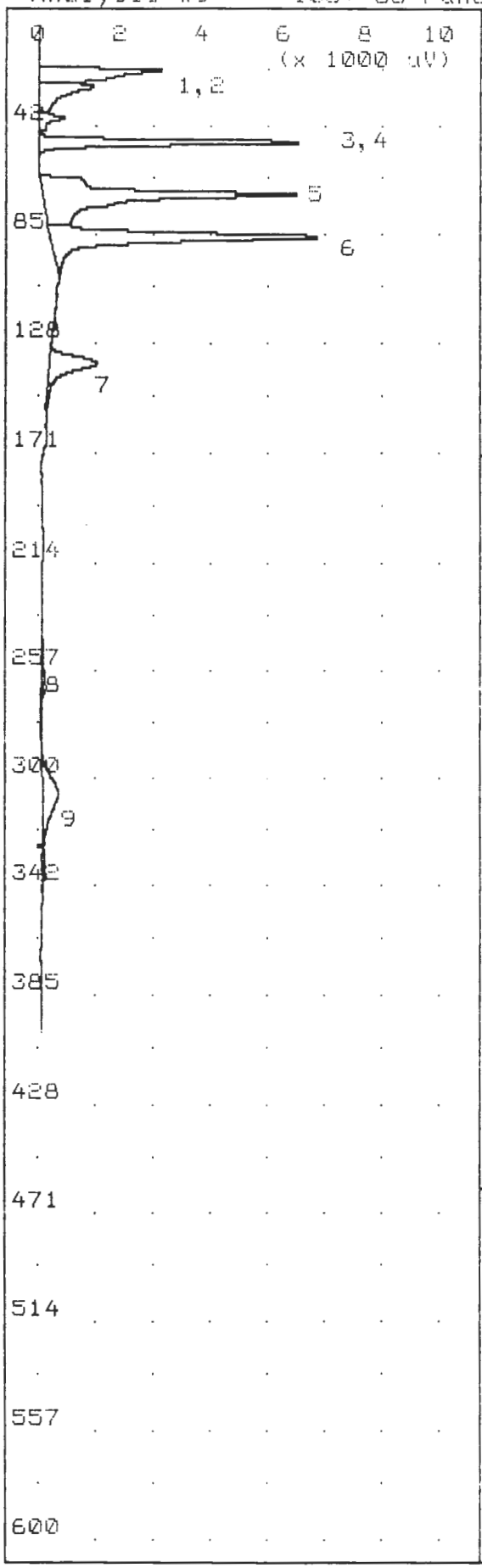
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : ~~50~~ 40 ppb
Inj. Volume : 0.25 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #9 10S+ GC Function Analysis Report



Printed : Sep 29,97 13:55
Run at : Sep 29,97 13:48

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.088	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		20.94 mVs	18.2
2	Unknown		17.57 mVs	24.8
3	Unknown		7.316 mVs	37.0
4	Unknown	cis,1,2 DCE	21.56 mVs	46.4
5	Unknown	Benzene	36.57 mVs	67.0
6	Unknown	TCE	31.58 mVs	83.8
7	Unknown	Toluene	8.158 mVs	133.6
8	Unknown		1.363 mVs	256.0
9	Unknown	p-xylene	6.847 mVs	304.0

Notes

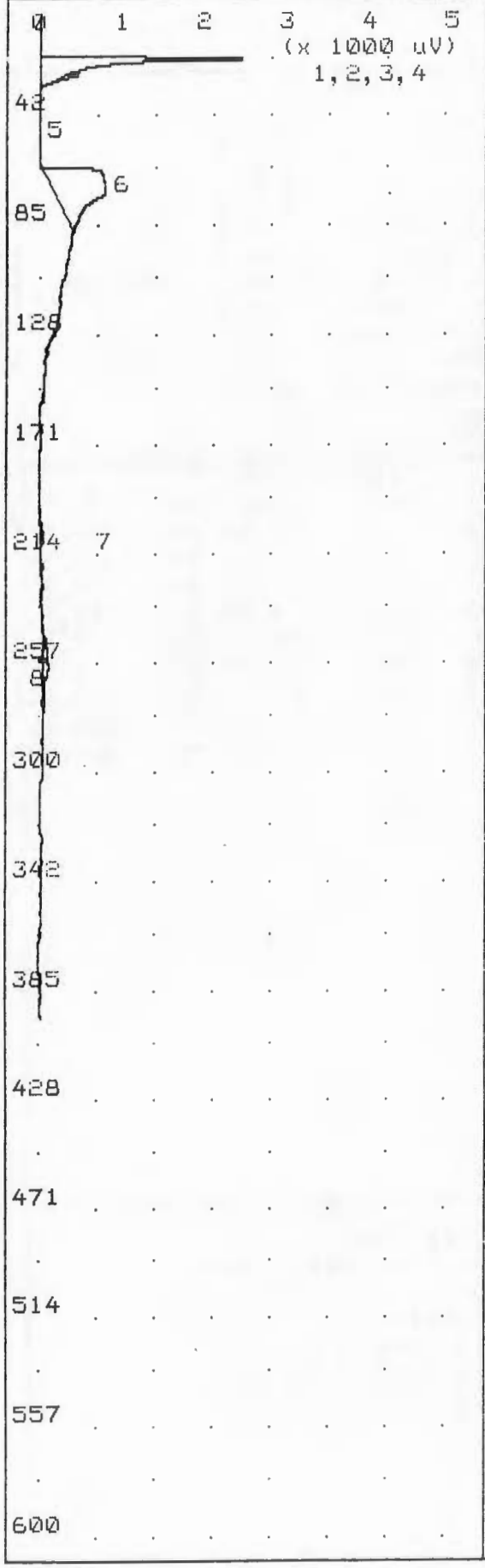
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading : 40
Cal. Gas Std. : ~~50~~ ppb
Inj. Volume : 0.25 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #10 10S+ GC Function Analysis Report



Printed : Sep 29,97 14:03
Run at : Sep 29,97 13:56

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.040 mVs	14.8
2	Unknown	0.039 mVs	15.7
3	Unknown	24.92 mVs	17.8
4	Unknown	0.111 mVs	24.4
5	Unknown	0.098 mVs	38.8
6	Unknown	17.64 mVs	66.8
7	Unknown	1.156 mVs	207.0
8	Unknown	0.872 mVs	253.0

Notes

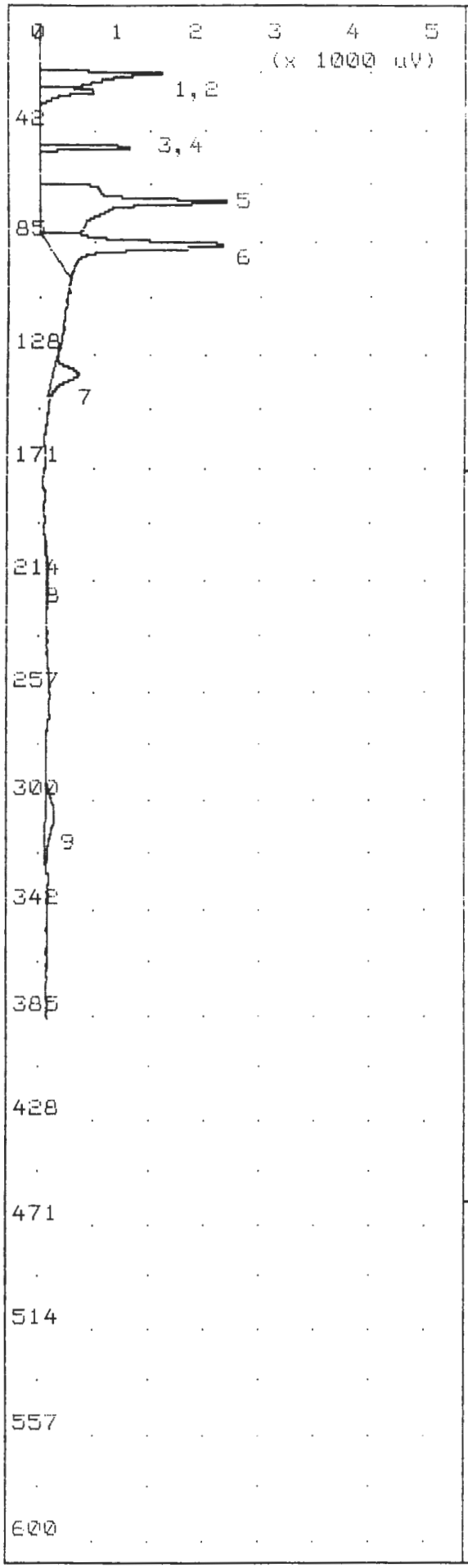
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.05 ml

Syringe # : S

Syringe Blank : Yes
Bulb Blank :

Analysis #11 10S4 GC Function Analysis Report



Printed : Sep 29,97 14:12
Run at : Sep 29,97 14:06

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		14.13 mVs	18.2
2	Unknown		13.12 mVs	24.8
3	Unknown		4.979 mVs	36.8
4	Unknown	cis,1,2 DCE	7.272 mVs	46.4
5	Unknown	Benzene	23.79 mVs	67.2
6	Unknown	TCE	11.40 mVs	83.8
7	Unknown	Toluene	2.192 mVs	132.9
8	Unknown		0.429 mVs	208.0
9	Unknown	p-xylene	1.768 mVs	305.3

Notes

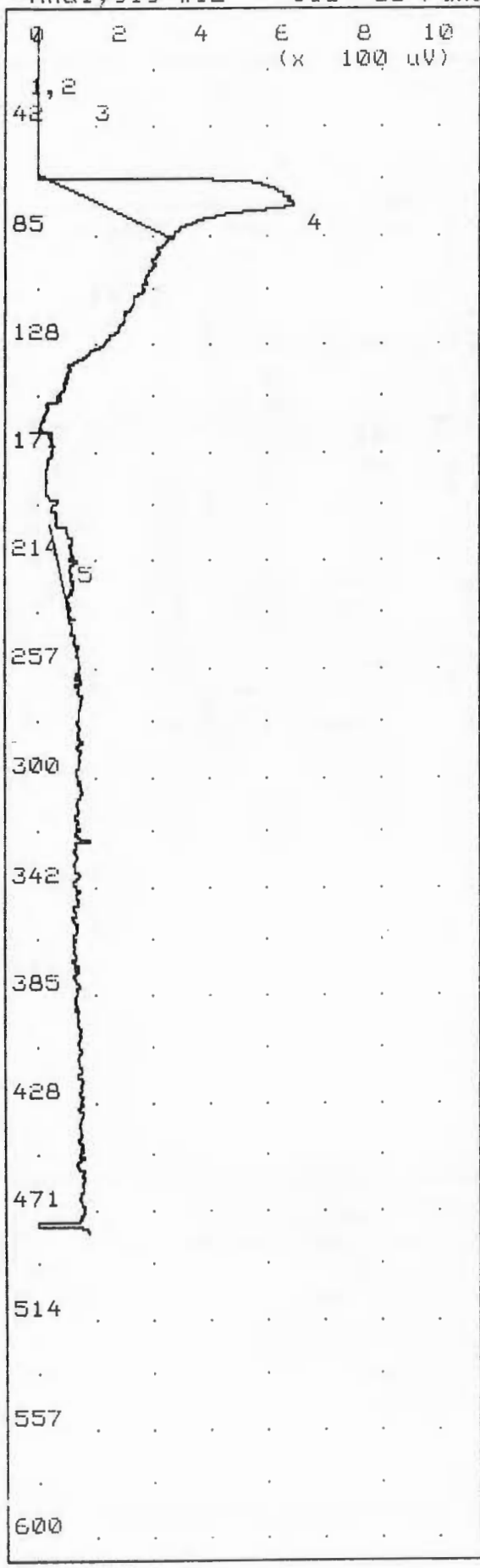
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 10 ppb
Inj. Volume : 0.05 ml

Syringe # : S

Syringe Blank : ~~Yes~~
Bulb Blank :

Analysis #12 10S+ GC Function Analysis Report



Printed : Sep 29,97 14:22
Run at : Sep 29,97 14:14

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.090 mVs	15.9
2	Unknown	2.462 mVs	22.0
3	Unknown	2.554 mVs	26.0
4	Unknown	16.19 mVs	71.0
5	Unknown	0.944 mVs	212.4

Notes

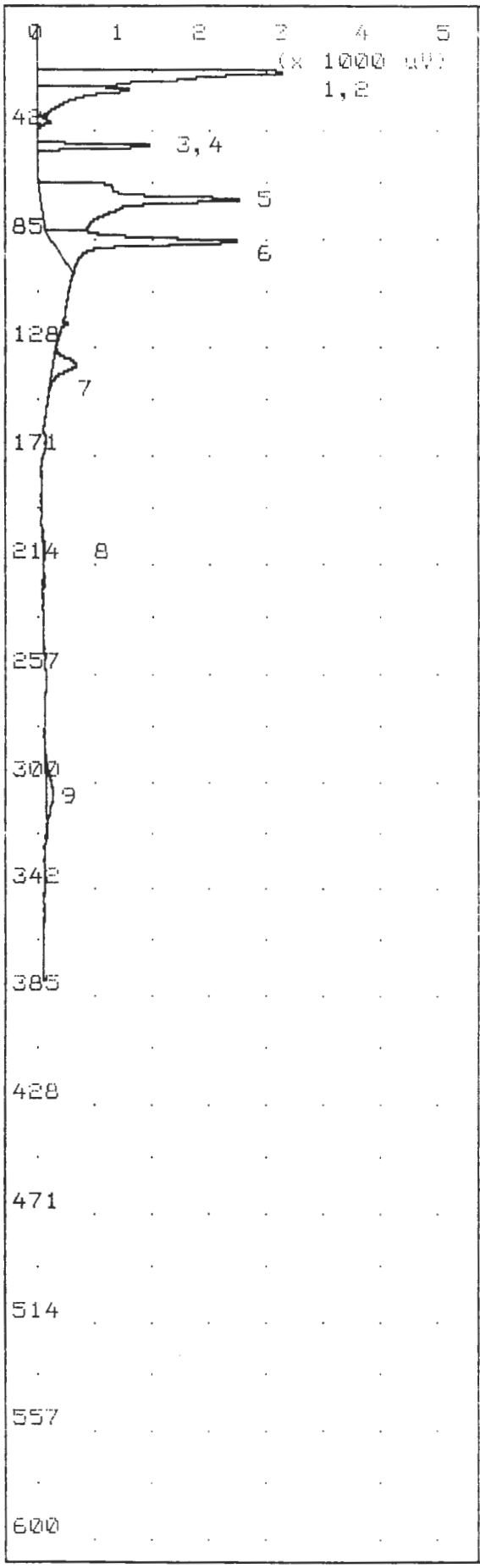
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 10 ppb
Inj. Volume : 0.05 ml

Syringe # : S

Syringe Blank :
Bulb Blank :

Analysis #13 10S+ GC Function Analysis Report



Printed : Sep 29,97 14:30
Run at : Sep 29,97 14:24

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	22.18 mVs	18.0
2	Unknown	16.77 mVs	24.7
3	Unknown	6.710 mVs	36.7
4	Unknown	8.352 mVs	46.2
5	Unknown	23.96 mVs	67.0
6	Unknown	11.03 mVs	83.6
7	Unknown	1.927 mVs	133.7
8	Unknown	0.306 mVs	203.0
9	Unknown	1.540 mVs	302.1

Notes

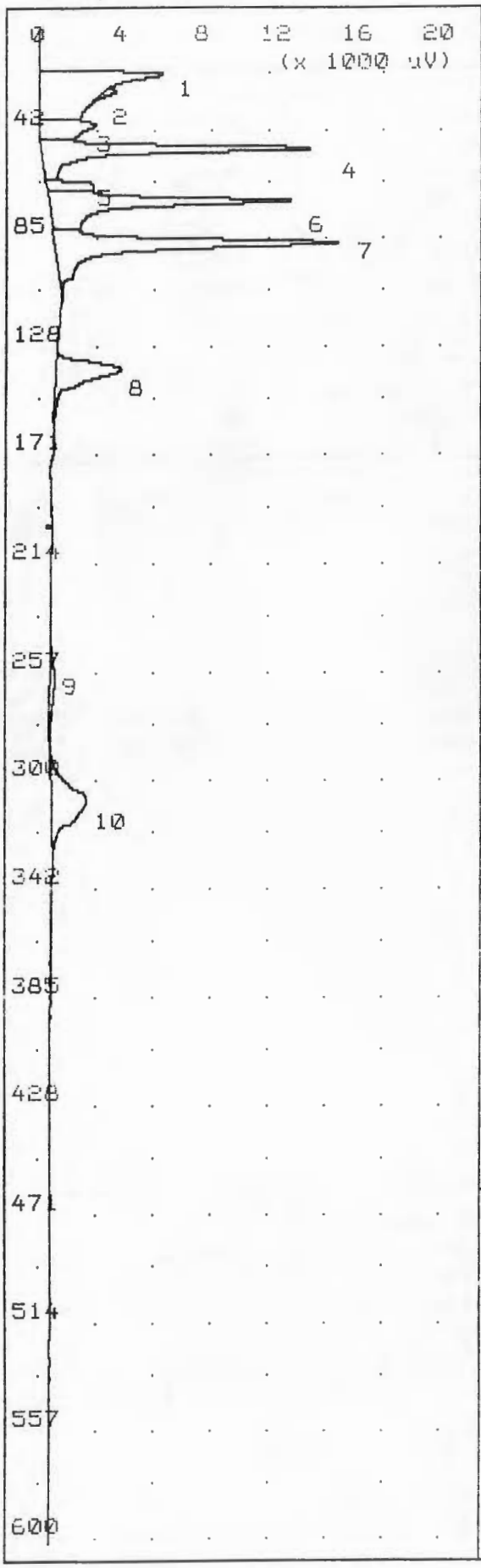
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 10 ppb
Inj. Volume : 0.05 ml

Syringe # : S

Syringe Blank :
Bulb Blank :

Analysis #14 10S+ GC Function Analysis Report



Printed : Sep 29,97 14:46
Run at : Sep 29,97 14:36

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	81.09 mVs	18.4
2	Unknown	1.334 mVs	25.2
3	Unknown	21.69 mVs	37.6
4	Unknown cis 1,2 DCE	58.00 mVs	47.4
5	Unknown	9.355 mVs	62.7
6	Unknown Benzene	61.08 mVs	68.2
7	Unknown TCE	76.70 mVs	85.0
8	Unknown Toluene	26.46 mVs	134.8
9	Unknown	3.908 mVs	255.2
10	Unknown p-xylene	29.01 mVs	304.5

Notes

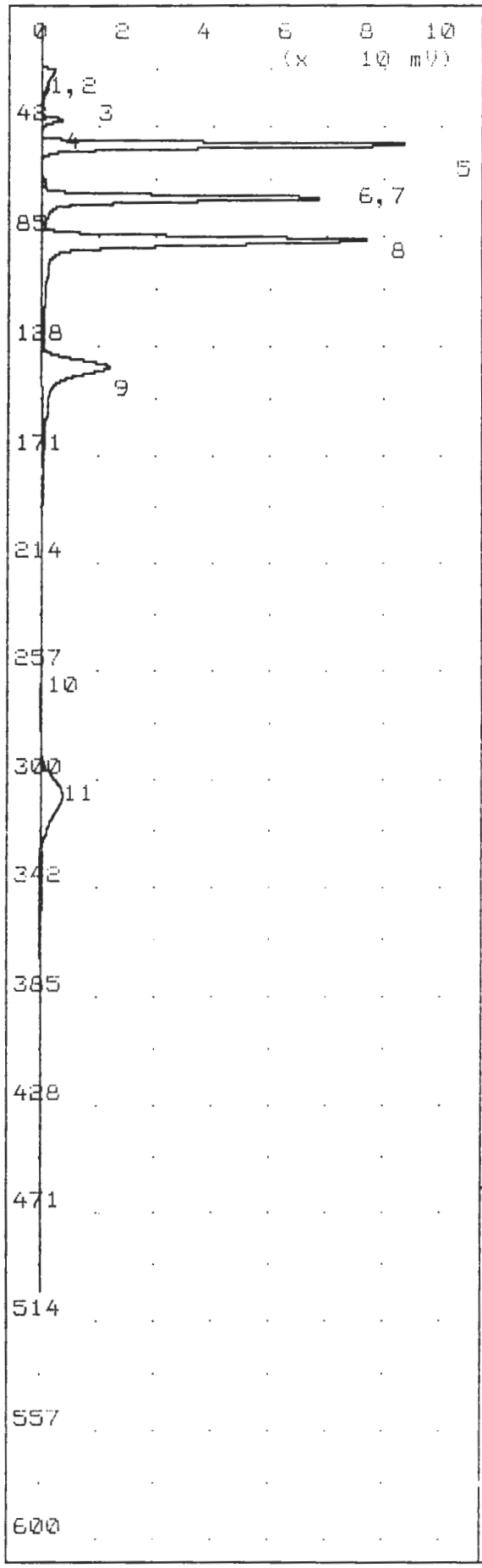
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Volume : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #16 1085+ GC Function Analysis Report



Printed : Sep 29,97 15:47
Run at : Sep 29,97 15:39

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.077	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.
1	Unknown		0.427	mVs	15.3
2	Unknown		45.11	mVs	18.4
3	Unknown		0.891	mVs	25.0
4	Unknown		19.91	mVs	37.6
5	Unknown	cis1,2 DCE	262.9	mVs	47.2
6	Unknown		2.206	mVs	62.6
7	Unknown	Benzene	232.8	mVs	67.8
8	Unknown	TCE	380.3	mVs	84.5
9	Unknown	Toluene	158.2	mVs	134.1
10	Unknown		1.686	mVs	257.0
11	Unknown	p-xylene	105.9	mVs	303.7

Notes

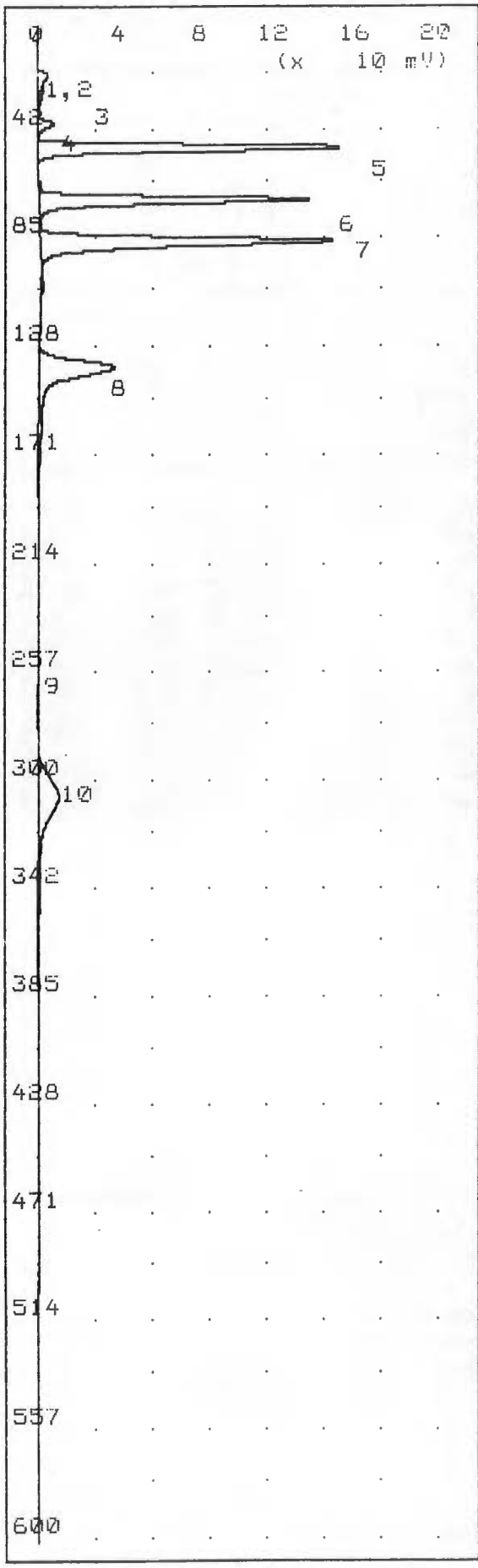
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 0.5 ppm
Inj. Volume : 0.25 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #15 10S+ GC Function Analysis Report



Printed : Sep 29,97 15:02
Run at : Sep 29,97 14:52

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		0.590 mVs	15.7
2	Unknown		62.02 mVs	18.6
3	Unknown		2.506 mVs	25.0
4	Unknown		35.23 mVs	37.7
5	Unknown	cis 1,2 DCE	521.6 mVs	47.3
6	Unknown	Benzene	457.3 mVs	68.0
7	Unknown	TCE	656.1 mVs	84.6
8	Unknown	Toluene	305.7 mVs	134.2
9	Unknown		1.956 mVs	252.2
10	Unknown	p-xylene	214.6 mVs	303.4

Notes

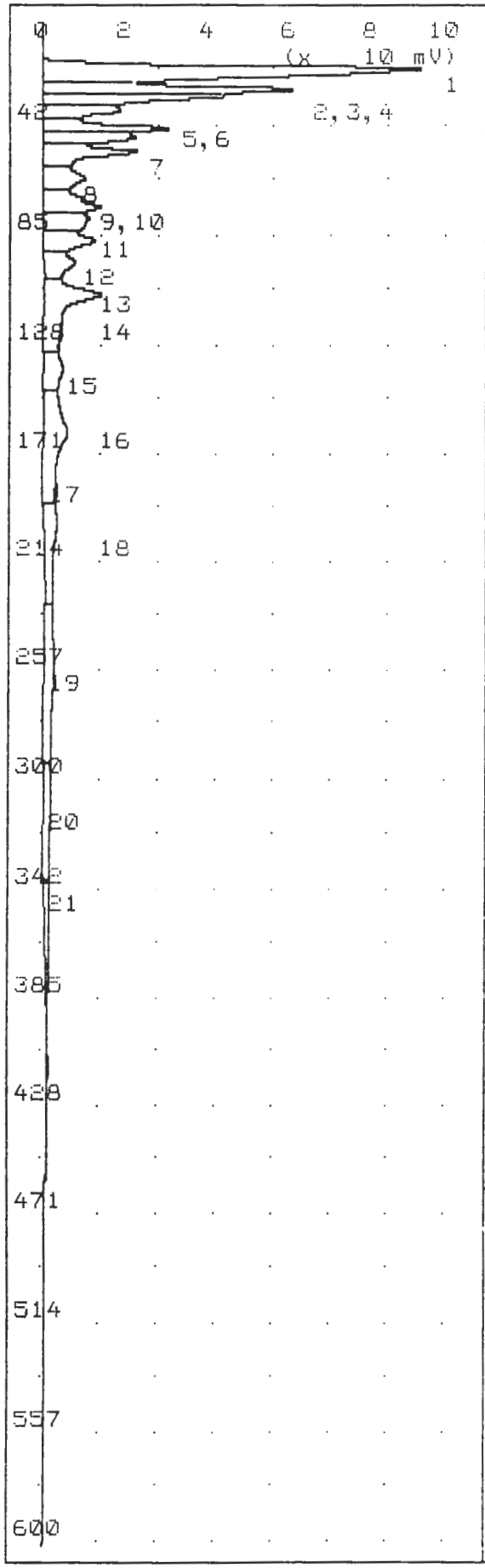
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 1.0 ppm
Inj. Volume : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #16 10S+ GC Function Analysis Report



Printed : Oct 6,97 17:20
Run at : Oct 6,97 17:09

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	ppb
1	Unknown		478.8 mVs	18.3	
2	Unknown		181.3 mVs	25.8	
3	Unknown		161.0 mVs	28.5	
4	Unknown		81.32 mVs	33.9	
5	Unknown		121.2 mVs	41.2	
6	Unknown		79.74 mVs	44.9	
7	Unknown		114.3 mVs	50.4	
8	Unknown		75.34 mVs	60.7	
9	Unknown		90.07 mVs	71.7	
10	Unknown		79.64 mVs	76.2	
11	Unknown	TCE	75.62 mVs	85.0	146
12	Unknown		61.36 mVs	93.6	
13	Unknown		178.0 mVs	106.2	
14	Unknown		1.359 mVs	116.8	
15	Unknown	Toluene	61.21 mVs	135.3	217
16	Unknown		175.3 mVs	160.0	
17	Unknown		0.938 mVs	182.4	
18	Unknown		102.3 mVs	196.6	
19	Unknown		132.8 mVs	255.2	
20	Unknown	p-xylene	71.83 mVs	304.2	351
21	Unknown		56.27 mVs	346.3	

2388 x 3.54 = 8454
8.5 ppm

Notes

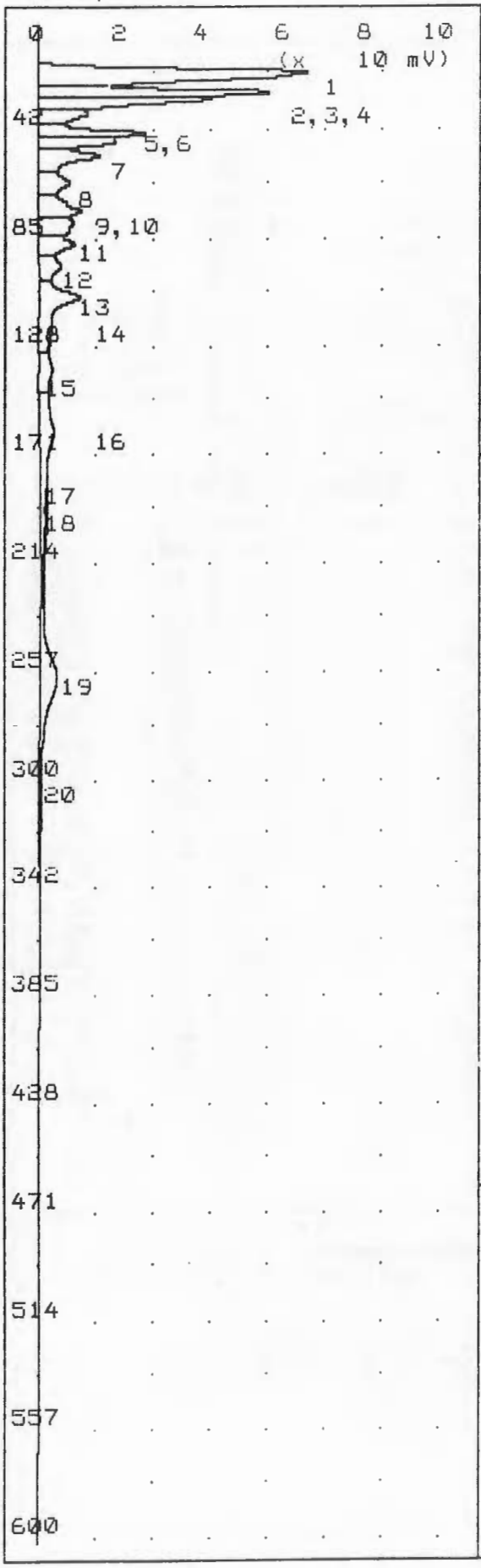
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-137
OVM Reading : 0.7 ppm
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 9

Syringe Blank :
Bulb Blank :

Analysis #17 10S+ GC Function Analysis Report 97oc06aq.gc



Printed : Oct 6,97 17:37
Run at : Oct 6,97 17:22

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	380.5 mVs	18.1
2	Unknown	175.6 mVs	25.8
3	Unknown	139.9 mVs	28.2
4	Unknown	53.87 mVs	34.0
5	Unknown	102.5 mVs	41.1
6	Unknown	64.40 mVs	44.7
7	Unknown	81.10 mVs	50.2
8	Unknown	54.71 mVs	60.7
9	Unknown	68.75 mVs	71.6
10	Unknown	60.40 mVs	76.0
11	Unknown	53.33 mVs	85.0
12	Unknown	43.70 mVs	93.4
13	Unknown	122.7 mVs	105.8
14	Unknown	0.825 mVs	117.0
15	Unknown	43.97 mVs	135.0
16	Unknown	159.3 mVs	159.2
17	Unknown	1.373 mVs	182.4
18	Unknown	3.858 mVs	195.8
19	Unknown	127.2 mVs	256.5
20	Unknown	0.952 mVs	303.4

Notes

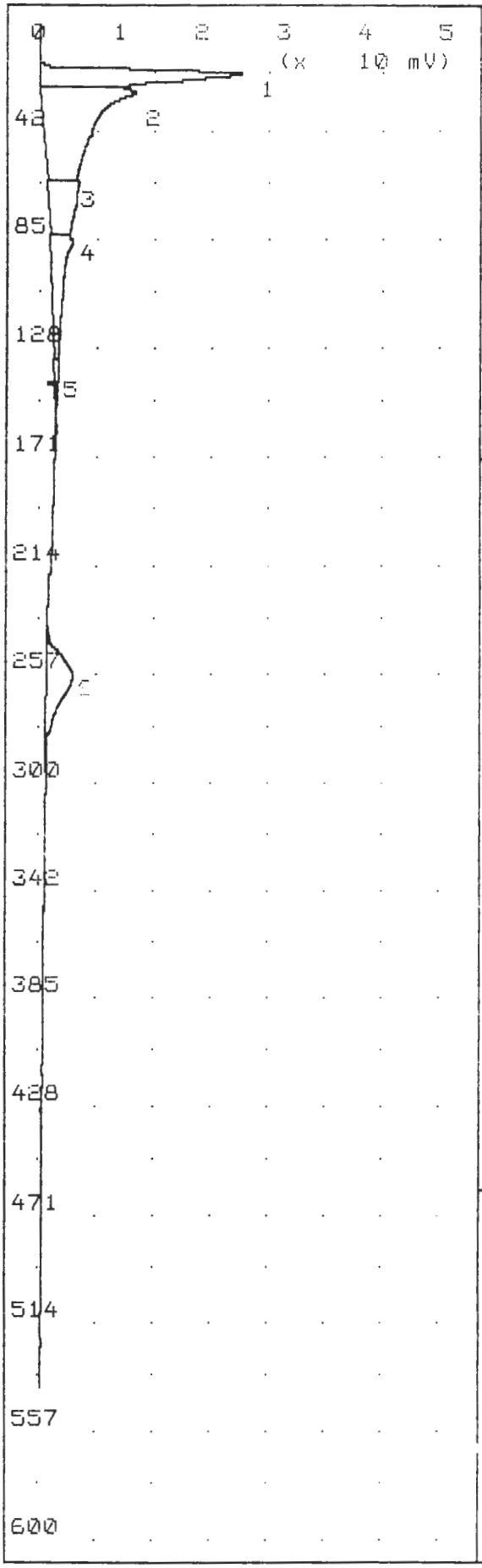
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-137DUP
OVM Reading : 0.7 ppm
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 6

Syringe Blank :
Bulb Blank :

Analysis #18 10S+ GC Function Analysis Report



Printed : Oct 6,97 17:51
Run at : Oct 6,97 17:42

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	136.5 mVs	18.2
2	Unknown	233.1 mVs	25.2
3	Unknown	73.10 mVs	61.3
4	Unknown TCE	71.64 mVs	84.4
5	Unknown Toluene	8.540 mVs	133.3
6	Unknown	67.73 mVs	254.9

138 ppb
36 ppb

599 x 3.54 = 2103
2 ppm

Notes

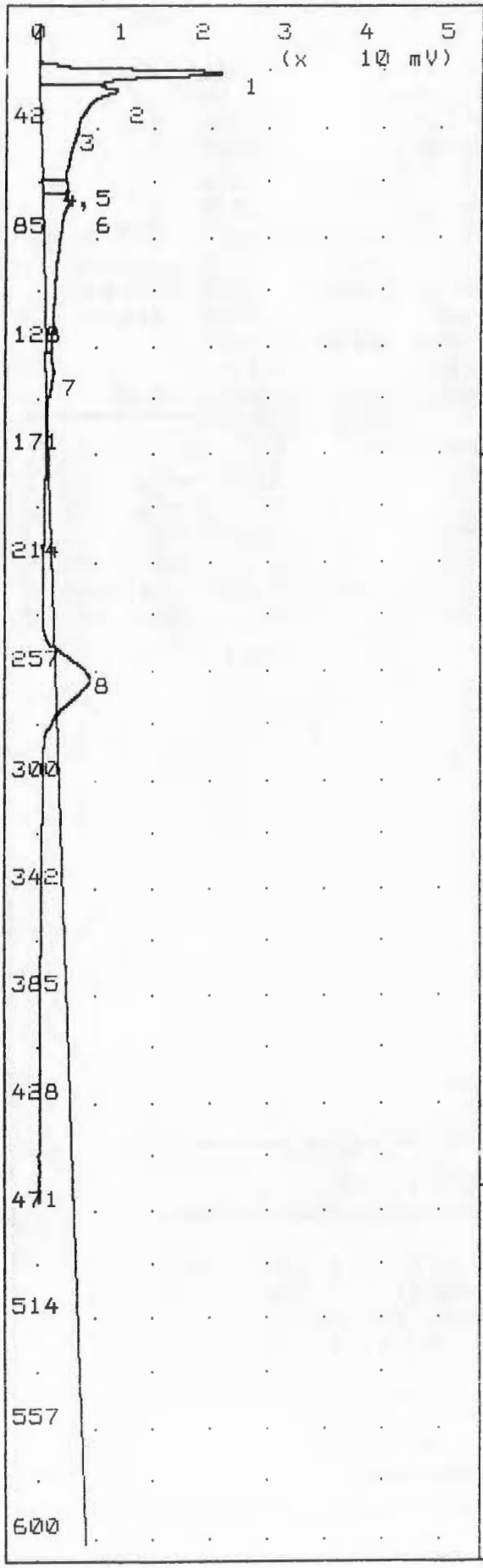
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-138
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 2

Syringe Blank :
Bulb Blank :

Analysis #19 10S+ GC Function Analysis Report



Printed : Oct 6,97 18:02
Run at : Oct 6,97 17:54

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.
1	Unknown		106.2	mVs	18.6
2	Unknown		180.2	mVs	25.6
3	Unknown		0.439	mVs	40.2
4	Unknown		0.019	mVs	59.5
5	Unknown		18.16	mVs	61.1
6	Unknown	Benzene	106.3	mVs	68.2
7	Unknown	Toluene	16.01	mVs	135.6
8	Unknown		118.3	mVs	257.0

268 ppb
400 ppb
66

Notes

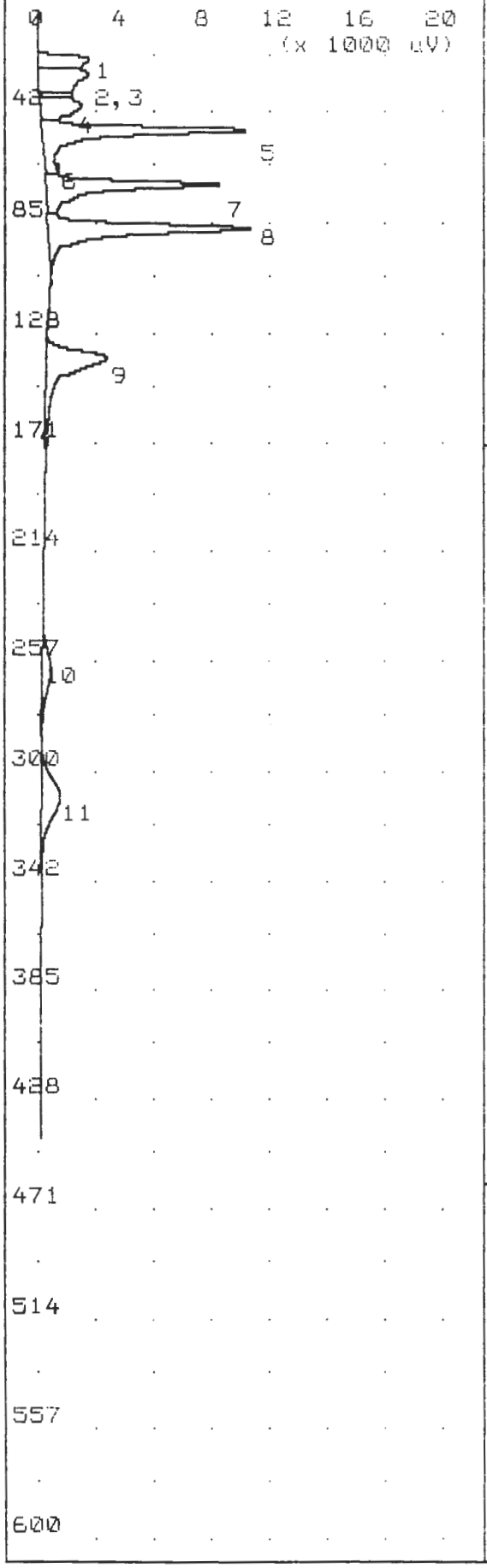
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : Rod Blank
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 1

Syringe Blank :
Bulb Blank :

Analysis #20 10S+ GC Function Analysis Report



Printed : Oct 6,97 18:11
Run at : Oct 6,97 18:04

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.	
1	Unknown	15.24 mVs	19.2	
2	Unknown	20.96 mVs	25.3	
3	Unknown	3.356 mVs	34.6	
4	Unknown	13.69 mVs	37.7	
5	Unknown	47.85 mVs	47.4	cis 1,2 DCE
6	Unknown	0.500 mVs	62.3	
7	Unknown	39.49 mVs	68.1	Benzene
8	Unknown	52.73 mVs	85.0	TCE
9	Unknown	28.94 mVs	135.4	Toluene
10	Unknown	7.891 mVs	257.8	
11	Unknown	16.56 mVs	307.7	p-xylene

Notes

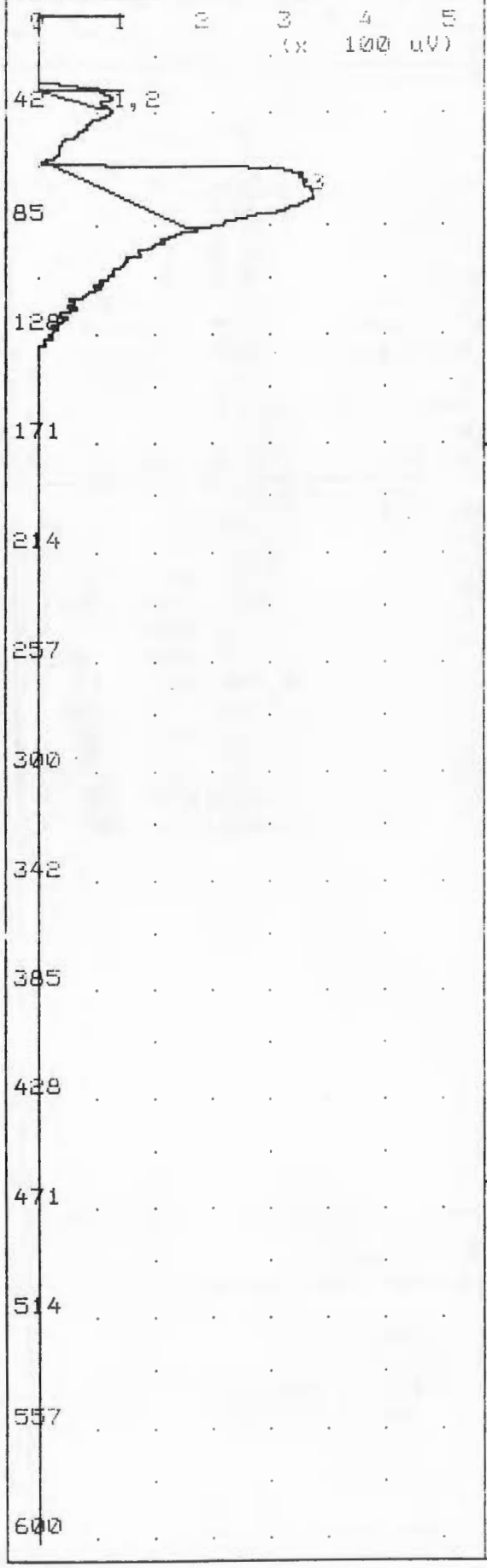
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Volume : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #1 1084 GC Function Analysis Report



Printed : Oct 7,97 09:17
Run at : Oct 7,97 08:07

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	20	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.627 mVs	31.4
2	Unknown	0.485 mVs	33.9
3	Unknown	4.755 mVs	63.4

Notes

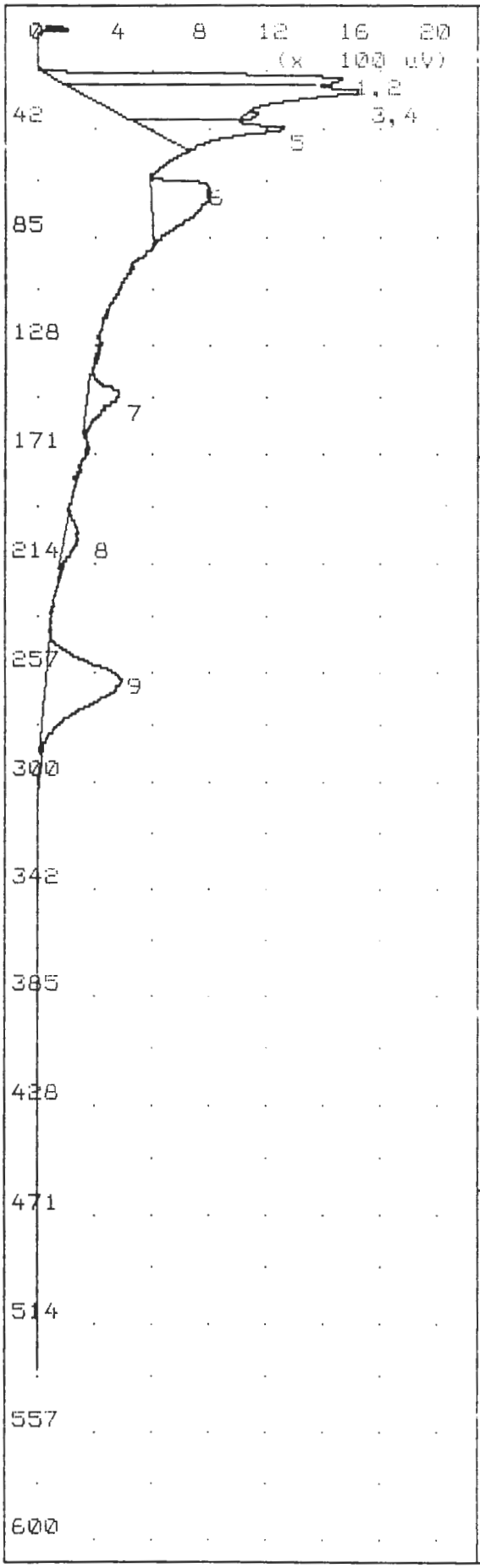
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : No Injection

Syringe # :

Syringe Blank :
Bulb Blank :

Analysis #2 1095 GC Function Analysis Report



Printed : Oct 7,97 08:43
Run at : Oct 7,97 08:34

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	23	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.072	mVs	16.0
2	Unknown	7.327	mVs	21.0
3	Unknown	12.43	mVs	25.8
4	Unknown	0.158	mVs	35.0
5	Unknown	4.277	mVs	39.8
6	Unknown	4.814	mVs	62.0
7	Unknown	1.722	mVs	144.2
8	Unknown	0.854	mVs	202.4
9	Unknown	7.516	mVs	257.3

Notes

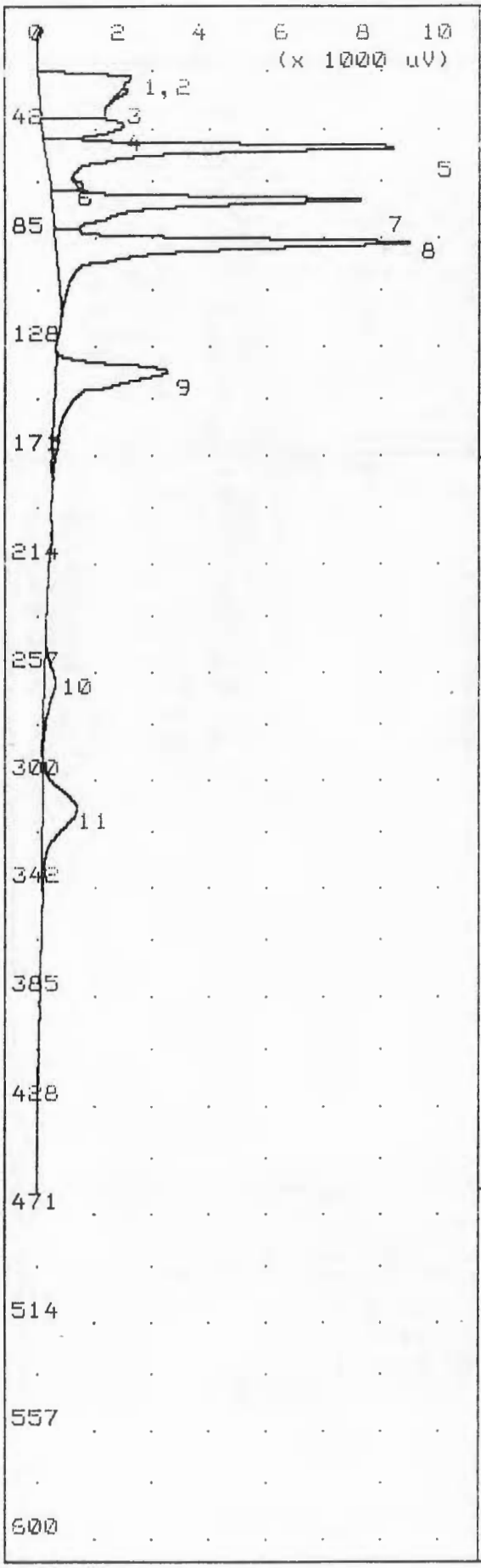
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : A

Syringe Blank : Yes
Bulb Blank : Yes

Analysis #3 10S+ GC Function Analysis Report



Printed : Oct 7,97 08:54
Run at : Oct 7,97 08:46

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	24	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.181	mVs	16.2
2	Unknown	34.49	mVs	20.2
3	Unknown	0.571	mVs	25.2
4	Unknown	13.69	mVs	38.2
5	Unknown	46.61	mVs	47.2
6	Unknown	0.495	mVs	62.2
7	Unknown	40.81	mVs	68.1
8	Unknown	53.67	mVs	85.0
9	Unknown	29.37	mVs	135.8
10	Unknown	4.825	mVs	257.6
11	Unknown	15.16	mVs	309.6

Notes

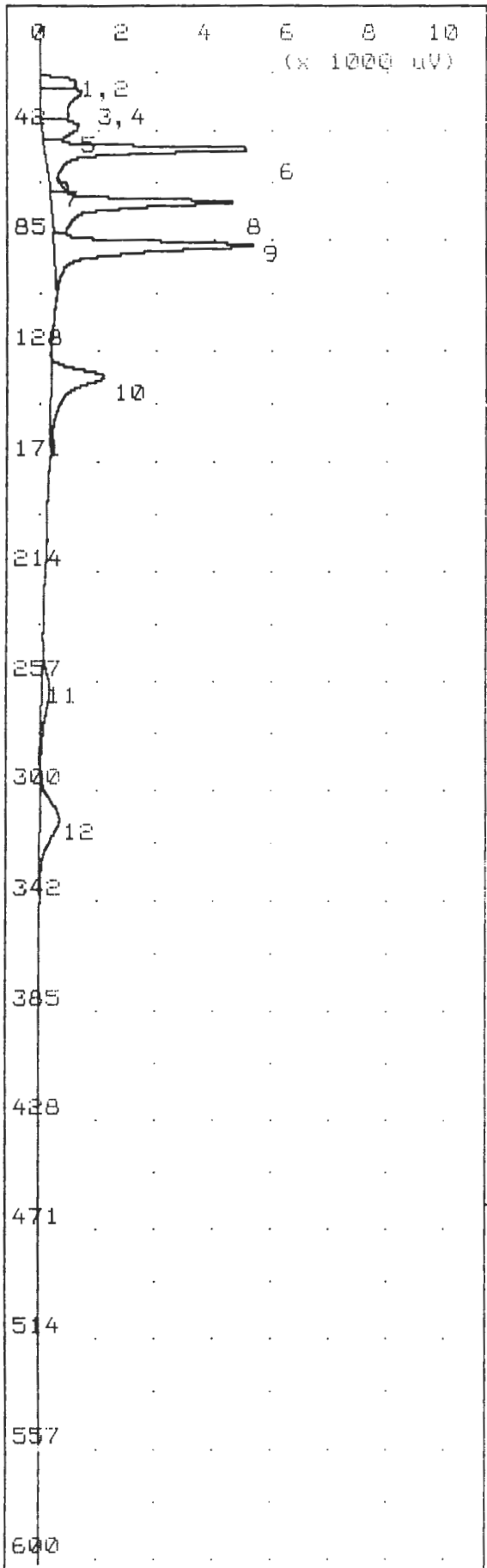
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Volume : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #4 105+ GC Function Analysis Report



Printed : Oct 7,97 09:09
Run at : Oct 7,97 08:59

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	25	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.096	mVs	16.1
2	Unknown	4.924	mVs	21.1
3	Unknown	9.714	mVs	26.1
4	Unknown	0.028	mVs	34.0
5	Unknown	5.967	mVs	38.1
6	Unknown	22.50	mVs	47.2
7	Unknown	0.527	mVs	62.1
8	Unknown	21.35	mVs	68.1
9	Unknown	26.14	mVs	85.2
10	Unknown	11.96	mVs	136.2
11	Unknown	3.615	mVs	258.6
12	Unknown	8.245	mVs	308.5

Notes

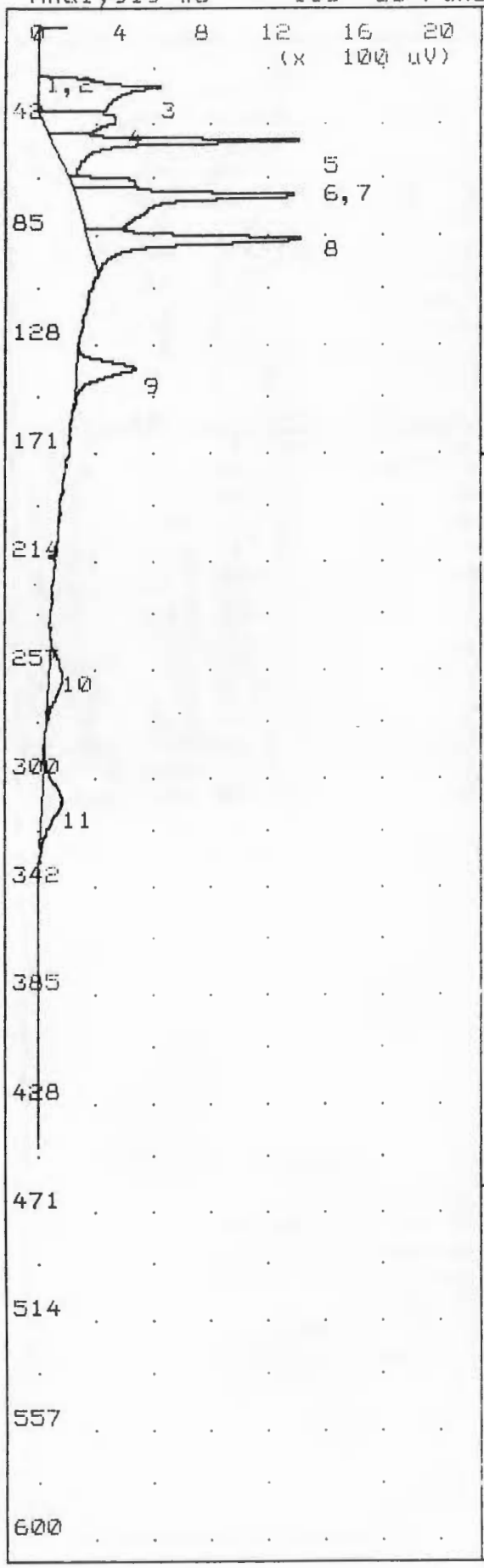
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 50 ppb
Inj. Volume : 0.25 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #5 10S+ GC Function Analysis Report



Printed : Oct 7,97 09:22
Run at : Oct 7,97 09:15

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	26	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.094 mVs	15.2
2	Unknown	0.088 mVs	18.4
3	Unknown	6.432 mVs	25.2
4	Unknown	2.791 mVs	37.2
5	Unknown	4.477 mVs	46.8
6	Unknown	1.398 mVs	62.2
7	Unknown	6.991 mVs	67.7
8	Unknown	5.182 mVs	84.5
9	Unknown	2.073 mVs	135.4
10	Unknown	1.204 mVs	256.8
11	Unknown	1.593 mVs	305.8

Notes

Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 10 ppb
Inj. Volume : 0.05 ml

Syringe # : S

Syringe Blank :
Bulb Blank :

SOIL GAS 2-POINT CALIBRATION

Parsons Engineering-Science	CLIENT: ACOE	DATE: 10/7/97
PROJECT: Seneca Army Depot Soil Gas Survey		GC Operator: Kenny Smith
LOCATION:		

Instrument Specs:

Type of GC: Photovac 10 S Plus
Column Type: CP Sil-5 Isothermal
Col. Temp. (°C):
Chart Speed:
Gain:
Sensitivity:
Gas Flow Rate:
Tank Pressure:

BTEX Calibration Gas Specifications

Manufacturer: Lot#:
Concentration (ppmV):
Concentration: (ppmV) cis 1,2-DCE
Benzene
TCE
Toluene
P-Xylene

Analysis A
Inj. #: 3

100 ppb Std

A 0.5 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF			
cis 1,2-DCE	47.2	0.1	0.04661	2.15			
Benzene	68.1	↓	0.04081	2.45			
TCE	85.0		0.05367	1.86			
Toluene	135.8		0.02937	3.40			
P-Xylene	309.6		0.01516	6.60			

Comments:
Concentration is normalized to 0.5 ml.

Analysis B
Inj. #: 4

50 ppb Std

A 0.25 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF	Delta RF	RF avg.	
cis 1,2-DCE	47.2	0.05	0.0225	2.22			
Benzene	68.1	↓	0.02135	2.34			
TCE	85.2		0.02614	1.91			
Toluene	136.2		0.01196	4.18			
P-Xylene	308.5		0.008245	6.06			

Comments:
Concentration is normalized to 0.5 ml.
Delta RF = (A-B)/(A+B)/2

Analysis C (if RF relatative % difference is greater than 50%)
Inj. #: 5

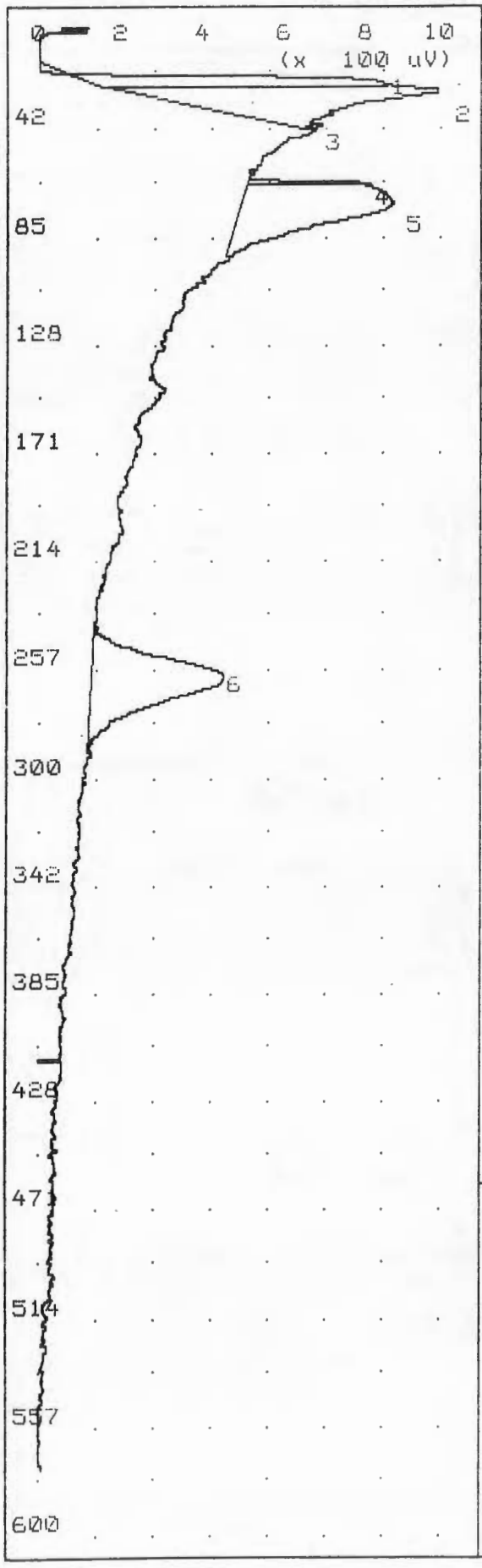
10 ppb Std

A 0.05 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF	Delta RF	RF avg.	
cis 1,2-DCE	46.8	0.01	0.0045	2.22			
Benzene	67.7	↓	0.0070	1.43			
TCE	84.5		0.0052	1.92			
Toluene	135.4		0.0021	4.76			
P-Xylene	305.8		0.0016	6.25			

Comments:
Concentration is normalized to 0.5 ml.

Analysis #6 10S+ GC Function Analysis Report



Printed : Oct 7,97 09:34
Run at : Oct 7,97 09:25

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	27 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	3.462 mVs	21.9
2	Unknown	5.922 mVs	25.9
3	Unknown	0.040 mVs	38.9
4	Unknown	0.411 mVs	61.9
5	Unknown	6.407 mVs	68.9
6	Unknown	6.471 mVs	257.3

Notes

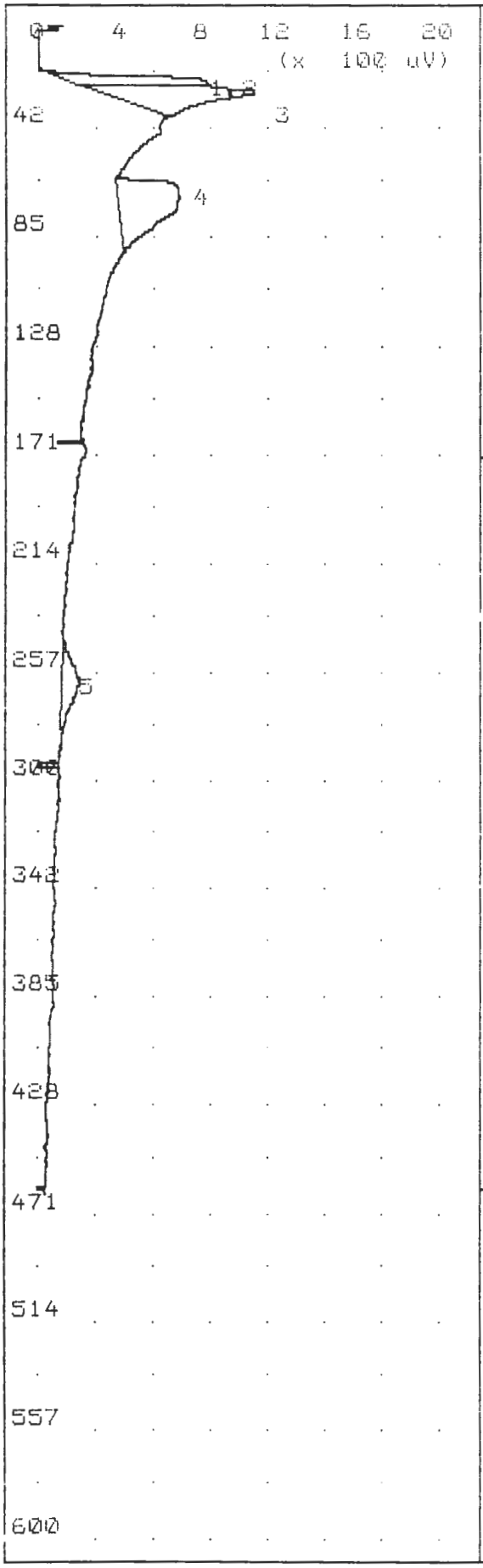
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 2

Syringe Blank : Yes
Bulb Blank :

Analysis #7 10S+ GC Function Analysis Report



Printed : Oct 7,97 09:44
Run at : Oct 7,97 09:37

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	28	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.095	mVs	16.4
2	Unknown	3.257	mVs	21.2
3	Unknown	4.723	mVs	25.6
4	Unknown	5.877	mVs	64.4
5	Unknown	1.448	mVs	256.8

Notes

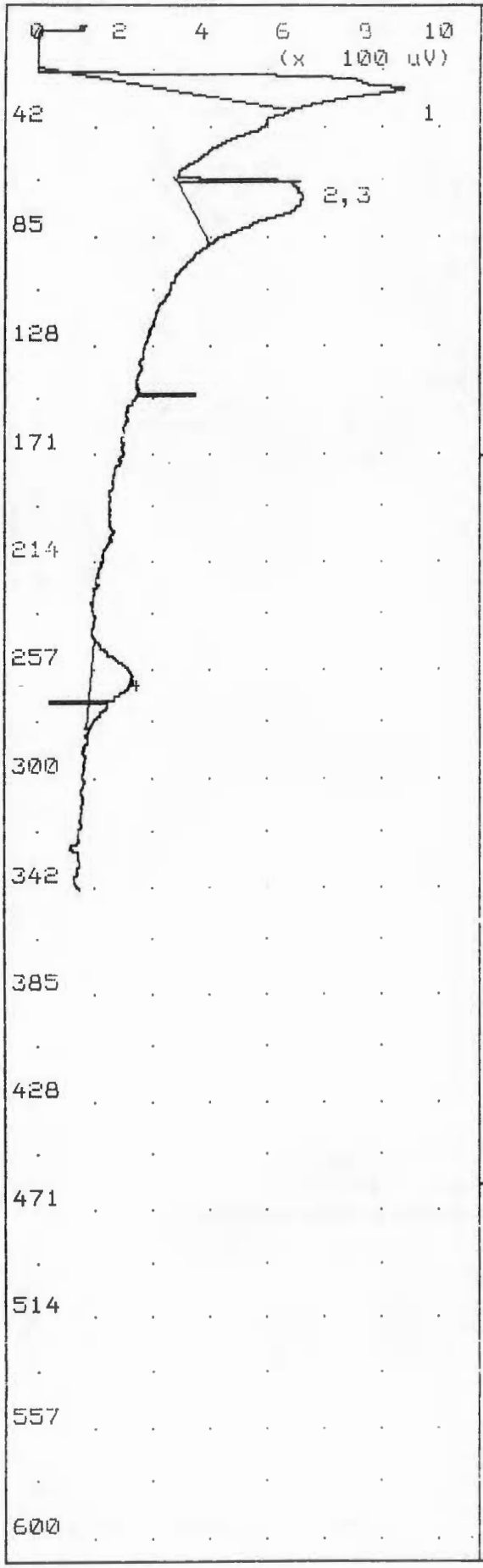
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 1

Syringe Blank : Yes
Bulb Blank :

Analysis #8 10S+ GC Function Analysis Report



Printed : Oct 7,97 09:52
Run at : Oct 7,97 09:46

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	29 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	6.362 mVs	25.2
2	Unknown	0.455 mVs	62.2
3	Unknown	4.582 mVs	67.2
4	Unknown	1.676 mVs	256.5

Notes

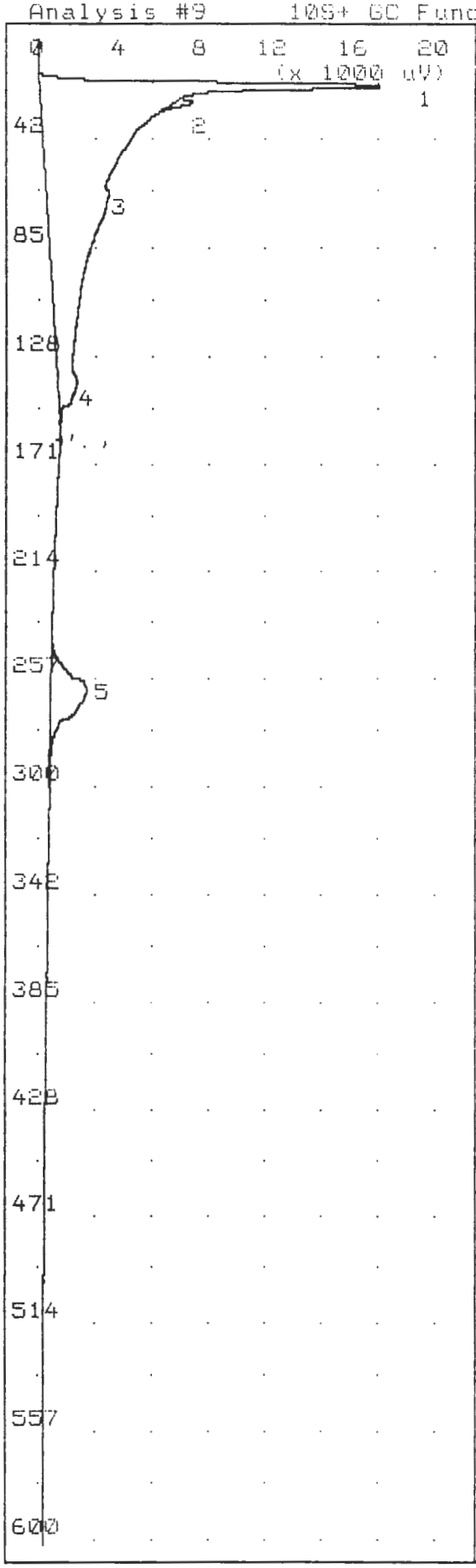
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Volume : 0.5 ml

Syringe # : 6

Syringe Blank : Yes
Bulb Blank :

Analysis #9 10S+ GC Function Analysis Report



Printed : Oct 7,97 10:05
Run at : Oct 7,97 09:55

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	29	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.
1	Unknown		391.5	mVs	18.7
2	Unknown		2.638	mVs	25.5
3	Unknown		4.818	mVs	61.1
4	Unknown	Toluene	7.436	mVs	135.8
5	Unknown		33.51	mVs	258.6

31ppb

Notes

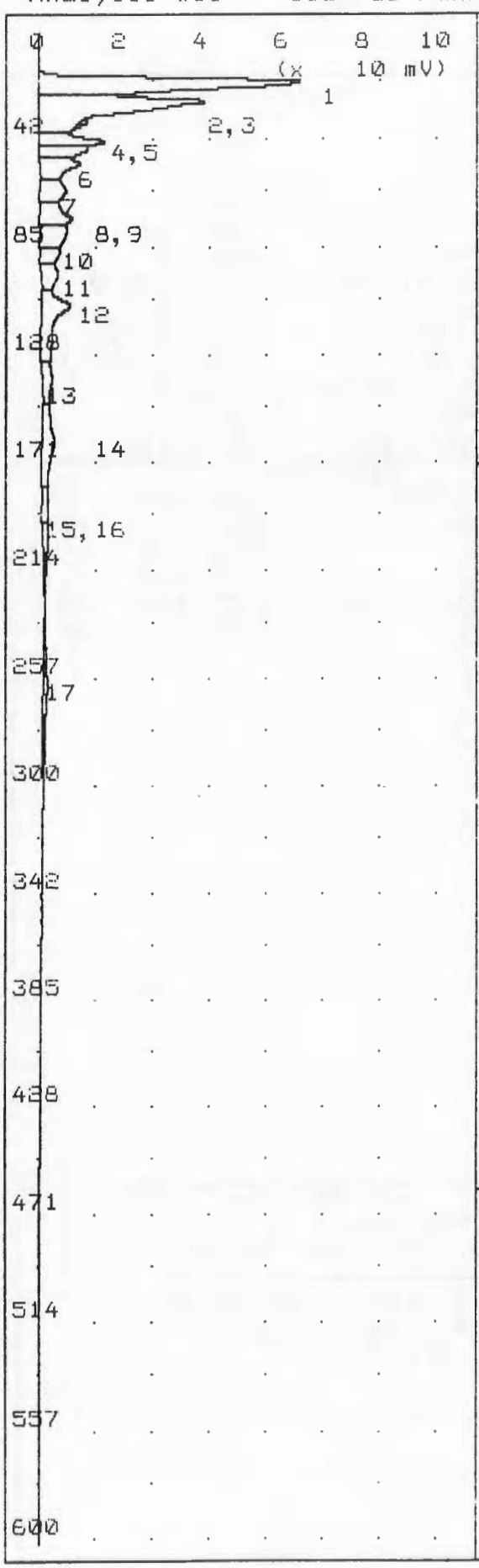
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : Rod Blank
OVM Reading : Bkgd
Cal Gas Std.

Syringe # : 5

Syringe Blank :
Bulb Blank :

Analysis #10 109+ GC Function Analysis Report



Printed : Oct 7,97 10:39
Run at : Oct 7,97 10:29

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		351.5 mVs	18.3	
2	Unknown		296.1 mVs	25.8	
3	Unknown		5.706 mVs	33.7	
4	Unknown		72.65 mVs	41.2	
5	Unknown		44.13 mVs	44.7	
6	Unknown		65.65 mVs	50.1	
7	Unknown		54.13 mVs	60.8	
8	Unknown		54.50 mVs	71.7	
9	Unknown		55.09 mVs	76.0	
10	Unknown	TCE	28.56 mVs	84.8	55 ppb
11	Unknown		37.54 mVs	93.8	
12	Unknown		103.4 mVs	106.2	
13	Unknown	Toluene	36.03 mVs	135.8	123 ppb
14	Unknown		70.10 mVs	161.0	
15	Unknown		21.15 mVs	185.8	
16	Unknown		30.58 mVs	196.0	
17	Unknown		27.91 mVs	256.2	

1363 × 3.4 = 4634
5 ppm

Notes

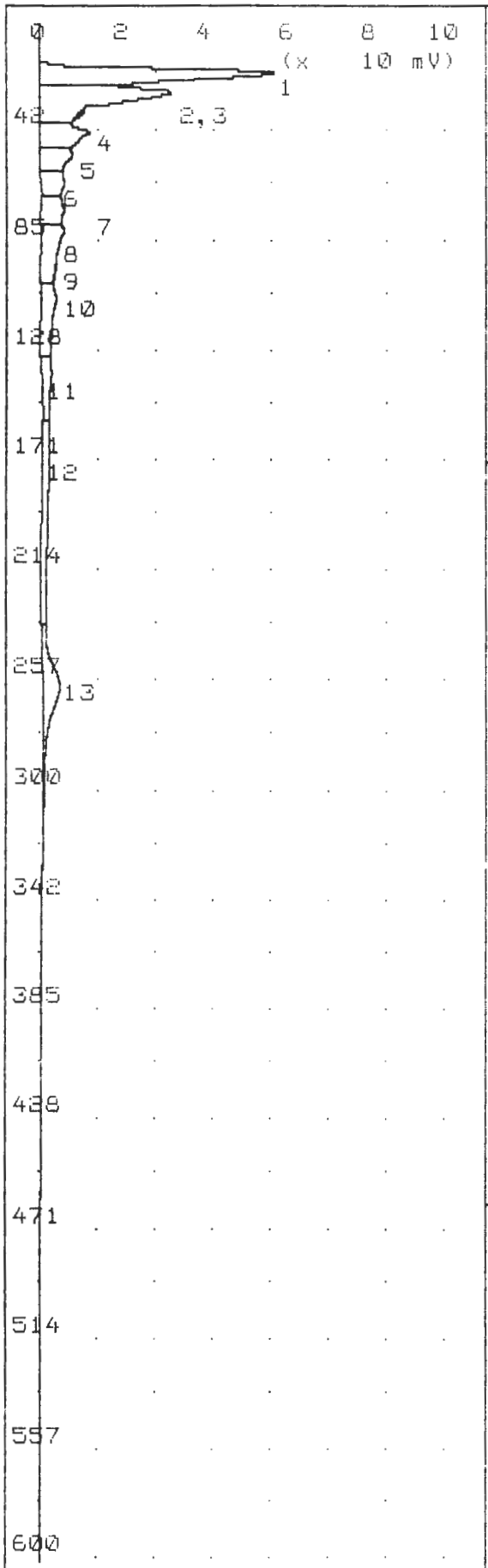
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-132
OVM Reading : 1.1 ~~ppm~~ IU's
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank :
Bulb Blank :

Analysis #11 10S+ GC Function Analysis Report



Printed : Oct 7,97 10:57
Run at : Oct 7,97 10:47

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		316.3 mVs	18.2	
2	Unknown		259.6 mVs	25.8	
3	Unknown		1.666 mVs	32.8	
4	Unknown		98.01 mVs	41.2	
5	Unknown		60.60 mVs	49.8	
6	Unknown		50.82 mVs	60.8	
7	Unknown		57.63 mVs	71.8	
8	Unknown		99.04 mVs	79.8	
9	Unknown		0.722 mVs	93.8	
10	Unknown		82.10 mVs	105.8	
11	Unknown	Toluene	51.03 mVs	134.9	174 ppb
12	Unknown		104.6 mVs	166.0	
13	Unknown		104.5 mVs	257.3	

1233 x 3.40 = 4396

4.5 ppm

Notes

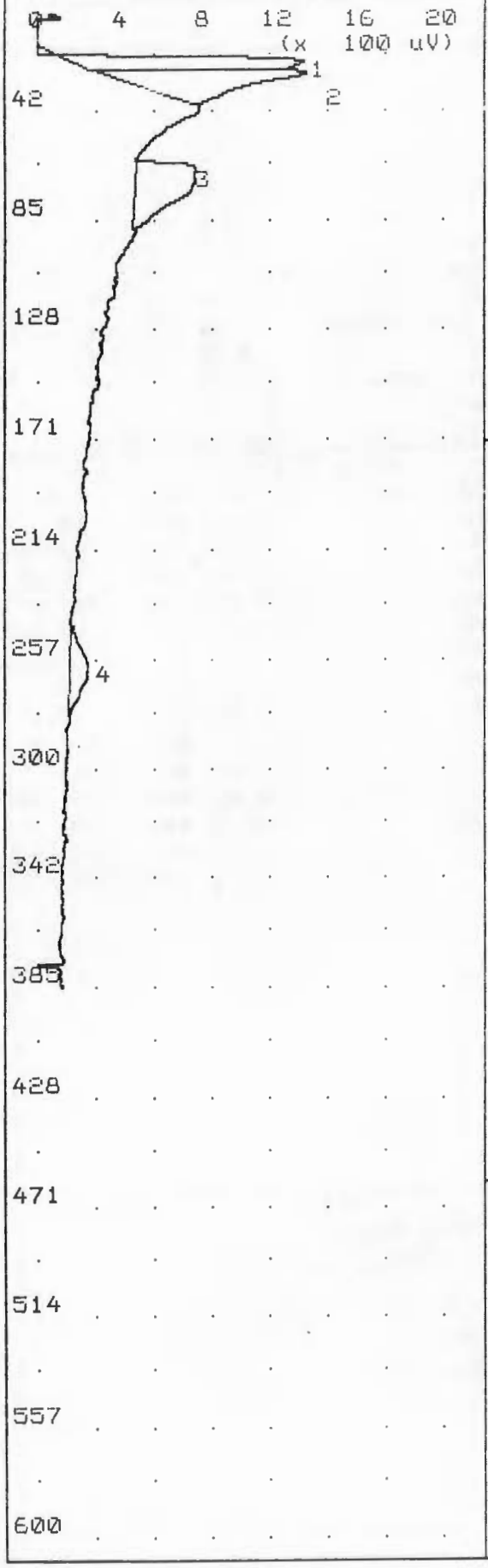
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-131
OVM Reading : 0.7 ~~ppm~~ IU's
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank :
Bulb Blank :

Analysis #12 10S+ GC Function Analysis Report



Printed : Oct 7,97 11:12
Run at : Oct 7,97 11:06

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	6.326 mVs	20.9
2	Unknown	6.813 mVs	25.6
3	Unknown	5.224 mVs	62.9
4	Unknown	1.635 mVs	254.4

Notes

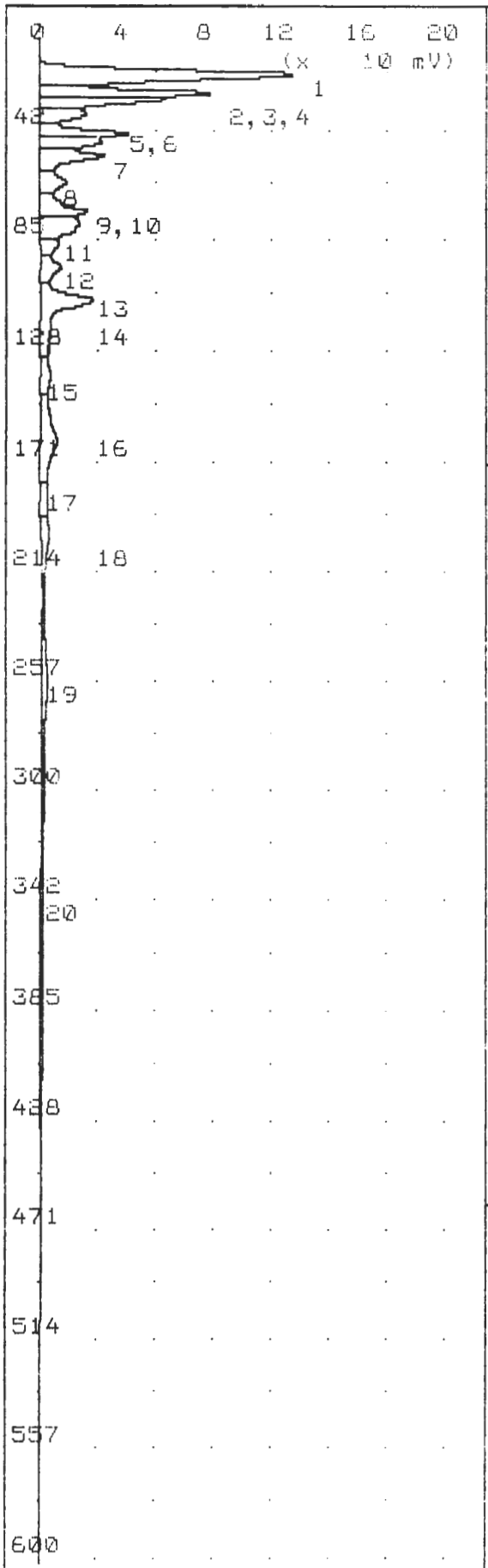
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank : Yes
Bulb Blank :

Analysis #13 10S+ GC Function Analysis Report



Printed : Oct 7,97 11:30
Run at : Oct 7,97 11:20

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown	?	602.6 mVs	18.6	2 ppm
2	Unknown		245.0 mVs	25.8	
3	Unknown		202.1 mVs	28.4	
4	Unknown		101.2 mVs	34.0	
5	Unknown		160.2 mVs	41.3	
6	Unknown		108.1 mVs	45.0	
7	Unknown		157.2 mVs	50.3	
8	Unknown		88.92 mVs	60.8	
9	Unknown		122.5 mVs	71.8	
10	Unknown		144.4 mVs	76.2	
11	Unknown	TCE	47.50 mVs	84.8	89 ppb
12	Unknown		75.27 mVs	93.8	
13	Unknown		245.4 mVs	106.4	
14	Unknown		1.565 mVs	117.4	
15	Unknown	Toluene	55.79 mVs	135.3	190 ppb
16	Unknown		169.1 mVs	160.6	
17	Unknown		43.46 mVs	184.6	
18	Unknown		92.72 mVs	197.6	
19	Unknown		217.1 mVs	255.7	
20	Unknown		2.708 mVs	341.0	

2838 x 3.4 = 9853

10 ppm

Notes

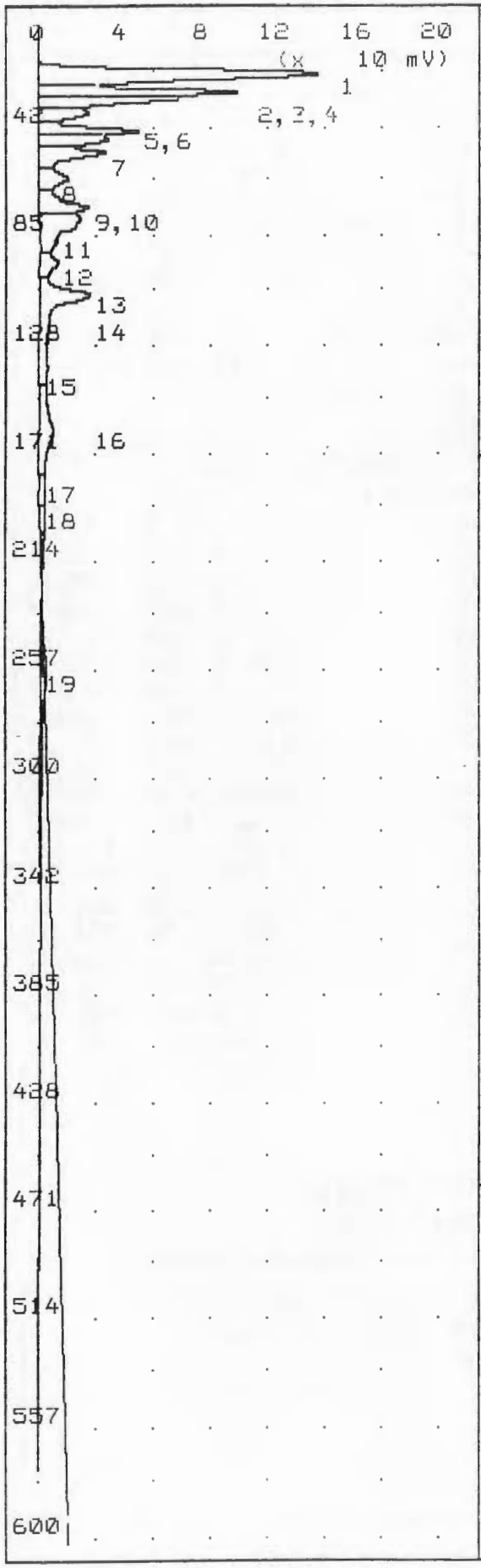
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-134
OVM Reading : 0.1 Iu
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank :
Bulb Blank :

Analysis #14 10S+ GC Function Analysis Report



Printed : Oct 7,97 11:41
Run at : Oct 7,97 11:31

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.072	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown	?	702.3 mVs	18.6	2.4 ppm
2	Unknown		276.3 mVs	26.0	
3	Unknown		231.6 mVs	28.6	
4	Unknown		108.4 mVs	34.3	
5	Unknown		186.4 mVs	41.4	
6	Unknown		120.1 mVs	45.0	
7	Unknown		163.2 mVs	50.3	
8	Unknown		94.55 mVs	60.8	
9	Unknown		127.6 mVs	71.7	
10	Unknown		198.5 mVs	76.0	
11	Unknown	TCE	3.199 mVs	84.1	6 ppb
12	Unknown		70.43 mVs	93.4	
13	Unknown		284.3 mVs	106.0	
14	Unknown		1.206 mVs	116.2	
15	Unknown	Toluene	2.464 mVs	134.2	12 ppb
16	Unknown		145.9 mVs	159.6	
17	Unknown		33.94 mVs	182.2	
18	Unknown		65.11 mVs	196.0	
19	Unknown		109.9 mVs	255.4	

2936 × 3.4 = 9982
10 ppm

Notes

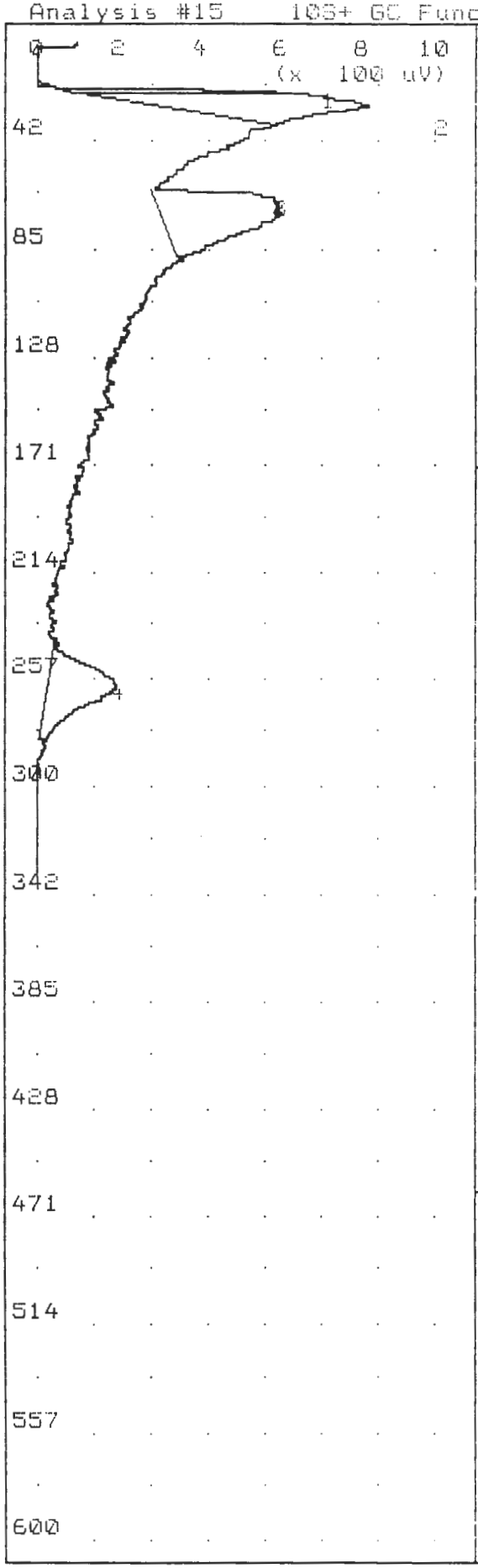
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-130
OVM Reading : 1.6 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank :
Bulb Blank :

Analysis #15 1065+ GC Function Analysis Report



Printed : Oct 7,97 11:51
Run at : Oct 7,97 11:46

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.068	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	1.514 mVs	21.8
2	Unknown	4.236 mVs	25.4
3	Unknown	5.367 mVs	62.5
4	Unknown	3.291 mVs	256.2

Notes

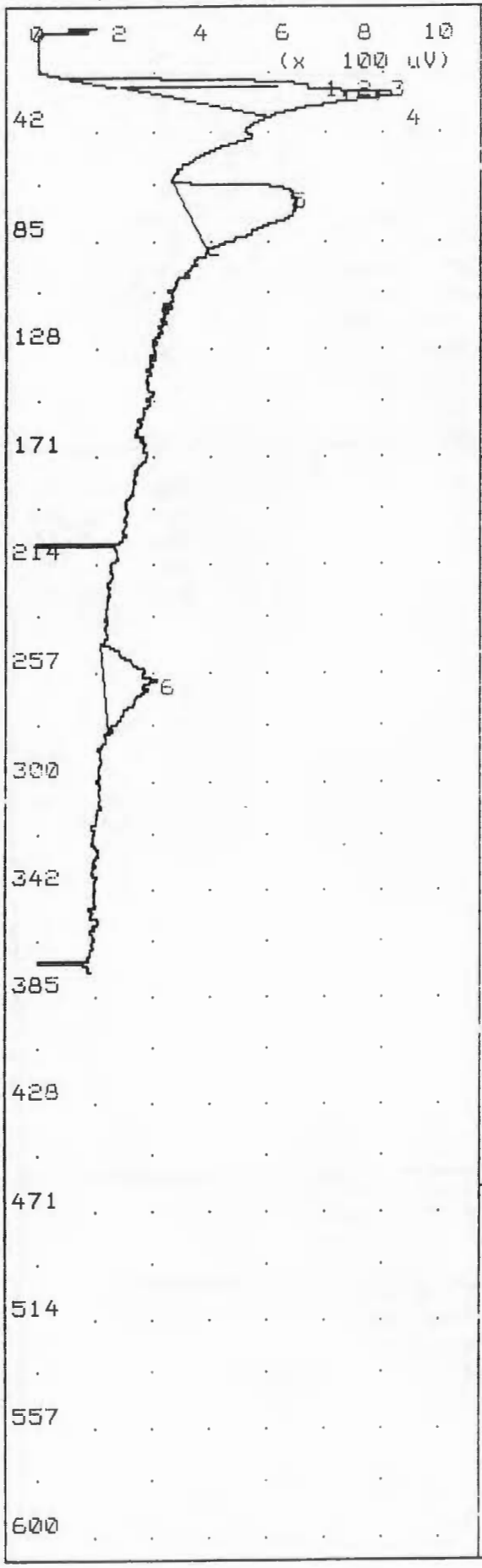
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank : Yes
Bulb Blank :

Analysis #16 10S+ GC Function Analysis Report



Printed : Oct 7,97 12:03
Run at : Oct 7,97 11:56

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.117 mVs	16.3
2	Unknown	0.024 mVs	18.6
3	Unknown	1.838 mVs	22.8
4	Unknown	3.499 mVs	25.9
5	Unknown	5.171 mVs	62.5
6	Unknown	2.325 mVs	257.0

Notes

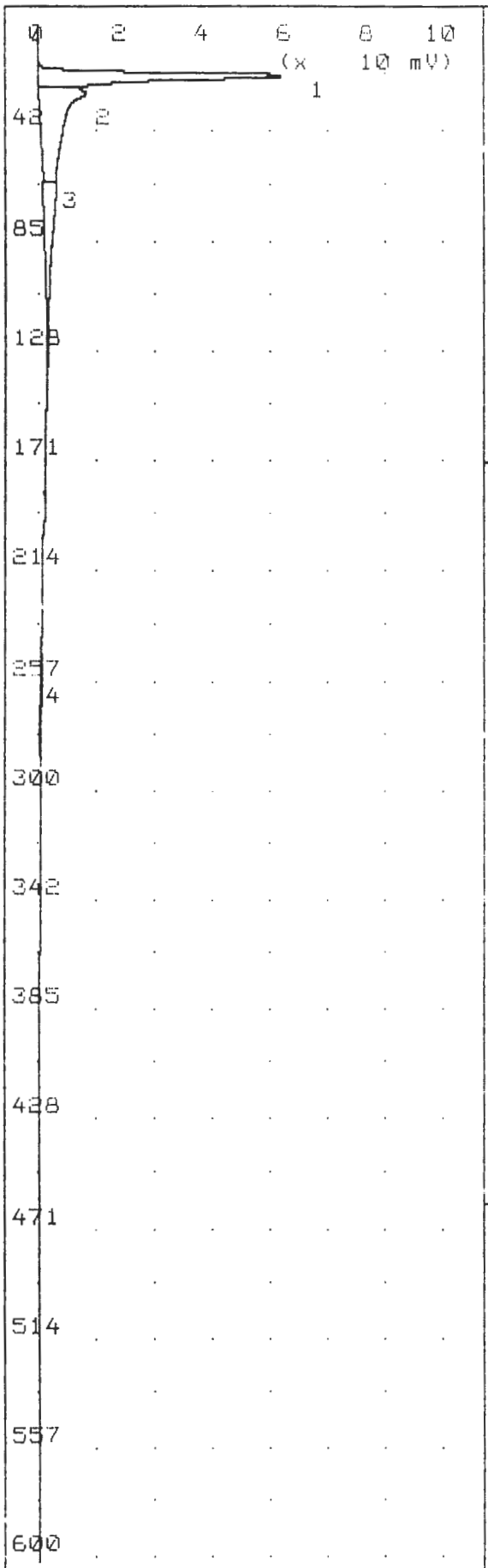
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank : Yes
Bulb Blank :

Analysis #17 10S+ GC Function Analysis Report



Printed : Oct 7,97 12:17
Run at : Oct 7,97 12:07

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	232.7 mVs	18.6
2	Unknown	217.2 mVs	25.3
3	Unknown	106.0 mVs	61.2
4	Unknown	2.106 mVs	254.6

Notes

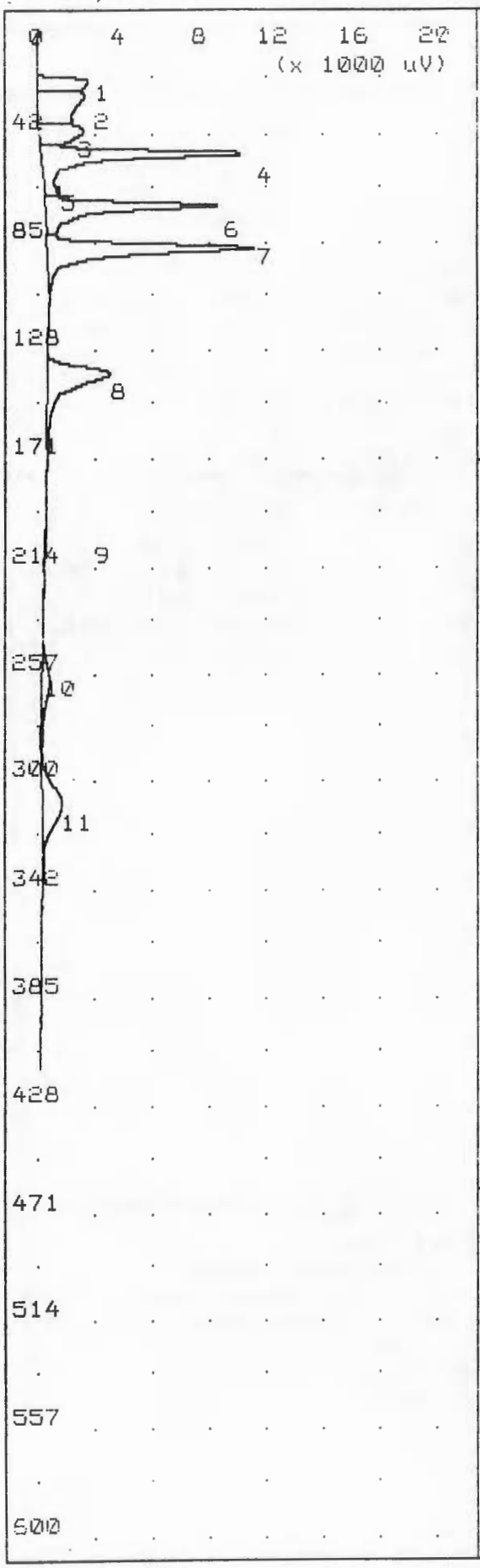
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : Amb. Air
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank :
Bulb Blank :

Analysis #18 10S+ GC Function Analysis Report



Printed : Oct 7,97 12:30
Run at : Oct 7,97 12:23

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	15.61	mVs	19.6
2	Unknown	24.18	mVs	25.4
3	Unknown	15.54	mVs	39.1
4	Unknown	49.68	mVs	47.2
5	Unknown	0.490	mVs	62.1
6	Unknown	40.26	mVs	68.1
7	Unknown	55.00	mVs	84.9
8	Unknown	29.48	mVs	135.2
9	Unknown	0.881	mVs	203.4
10	Unknown	5.796	mVs	256.5
11	Unknown	18.86	mVs	306.4

Notes

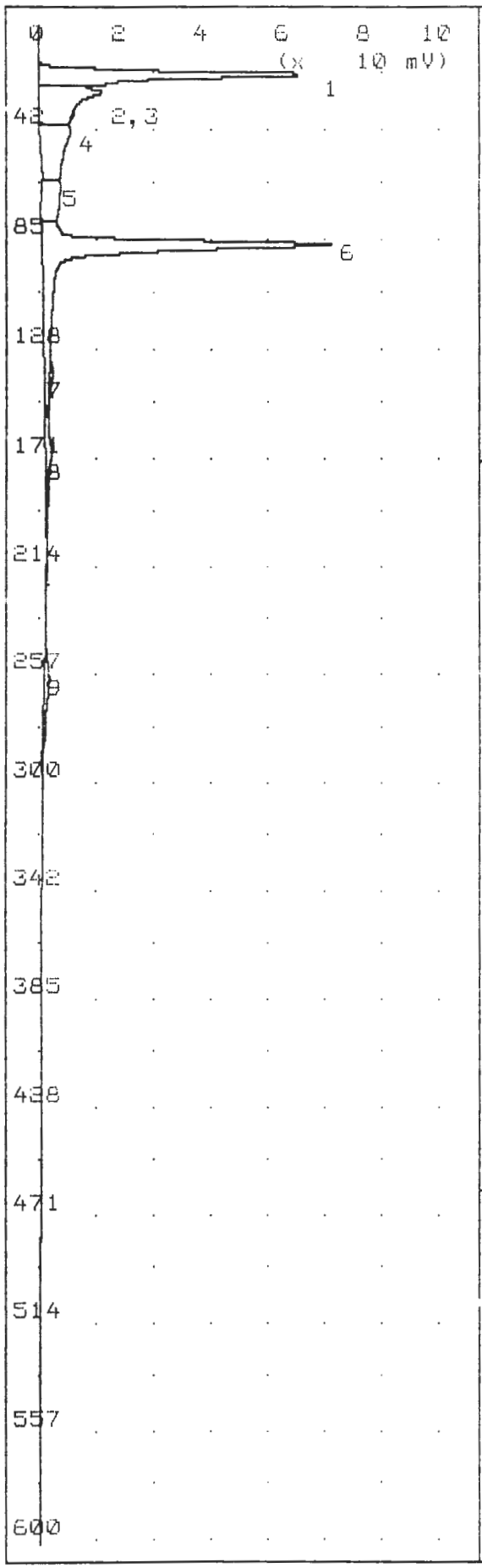
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #19 108+ GC Function Analysis Report



Printed : Oct 7,97 12:42
Run at : Oct 7,97 12:31

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		266.8 mVs	18.7	
2	Unknown		152.1 mVs	25.5	
3	Unknown		0.977 mVs	33.6	
4	Unknown		131.7 mVs	41.1	
5	Unknown		73.42 mVs	61.2	
6	Unknown	TCE	515.0 mVs	85.2	958 ppb
7	Unknown	Toluene	6.576 mVs	135.2	32 ppb
8	Unknown		11.55 mVs	166.4	
9	Unknown		24.82 mVs	257.0	

1187 x 3.4 = 4036

4 ppm

Notes

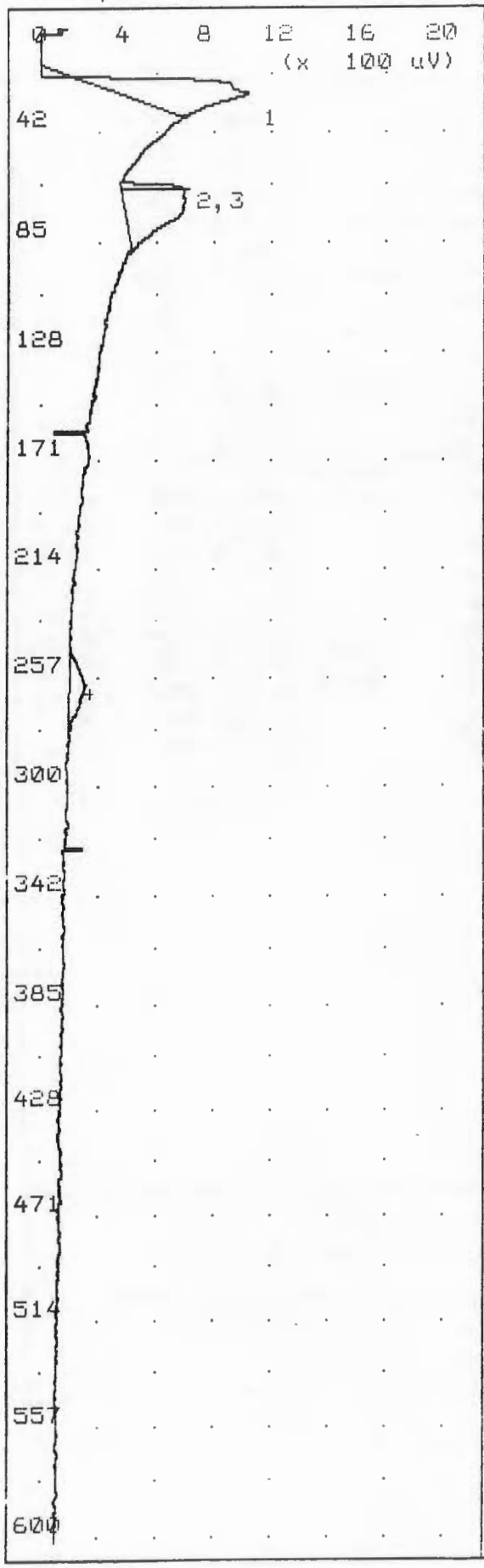
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-151
OVM Reading : 0.8 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank :
Bulb Blank :

Analysis #20 10S+ GC Function Analysis Report



Printed : Oct 7,97 13:09
Run at : Oct 7,97 12:59

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	7.750 mVs	25.5
2	Unknown	0.606 mVs	62.6
3	Unknown	4.814 mVs	67.6
4	Unknown	1.233 mVs	257.0

Notes

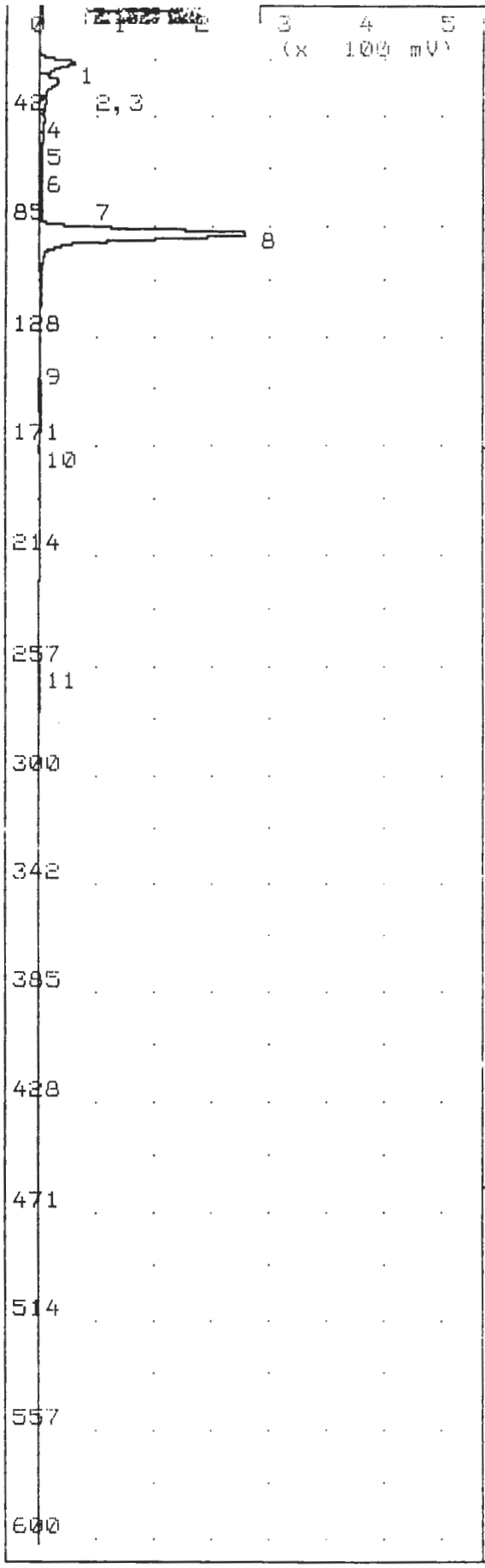
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank : Yes
Bulb Blank :

Analysis #21



Printed : Oct 7,97 13:31
Run at : Oct 7,97 13:12

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		202.6 mVs	18.8	
2	Unknown		133.8 mVs	25.9	
3	Unknown		53.99 mVs	34.2	
4	Unknown		43.11 mVs	41.2	
5	Unknown	cis 1,2 DCE	55.08 mVs	47.2	119 ppb
6	Unknown		23.18 mVs	61.2	
7	Unknown	Benzene	33.50 mVs	68.2	82 ppb
8	Unknown	TCE	1.294 Vs	85.6	2407 ppb
9	Unknown	Toluene	4.638 mVs	135.3	22 ppb
10	Unknown		0.208 mVs	166.4	
11	Unknown		20.12 mVs	258.6	

1869 x 3.4 = 6355

6.5 ppm

Notes

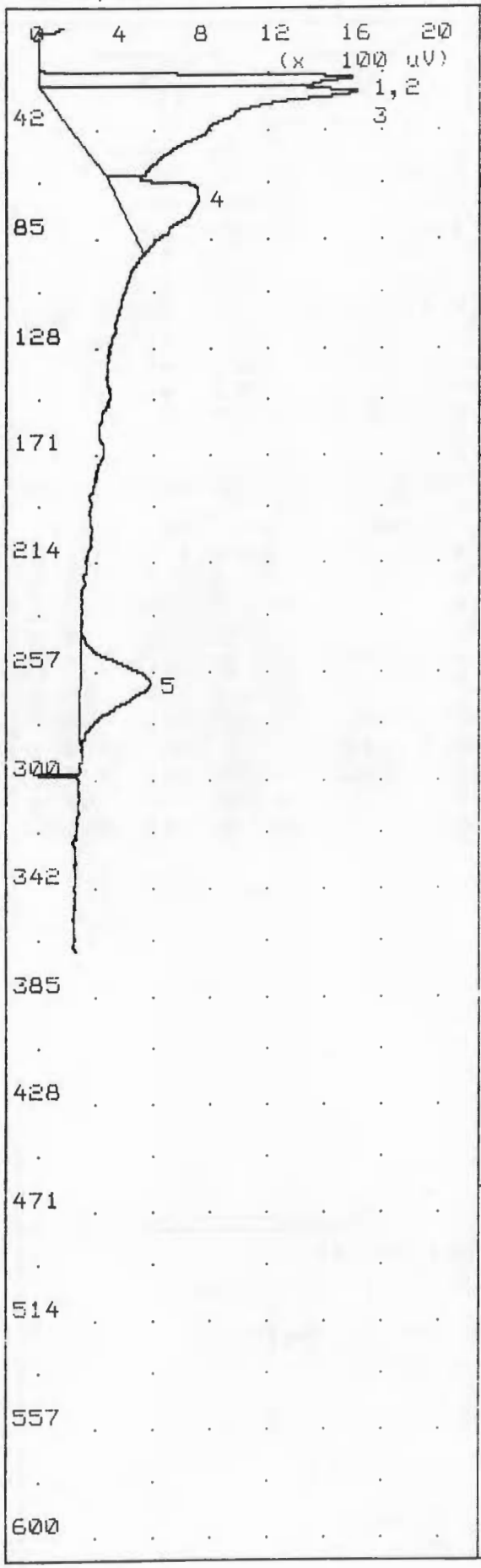
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-147
OVM Reading : 1.2 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 6

Syringe Blank :
Bulb Blank :

Analysis #22 1054 GC Function Analysis Report



Printed : Oct 7,97 13:39
Run at : Oct 7,97 13:33

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.163 mVs	16.2
2	Unknown	8.598 mVs	20.1
3	Unknown	25.17 mVs	25.1
4	Unknown	7.758 mVs	62.2
5	Unknown	6.733 mVs	258.6

Notes

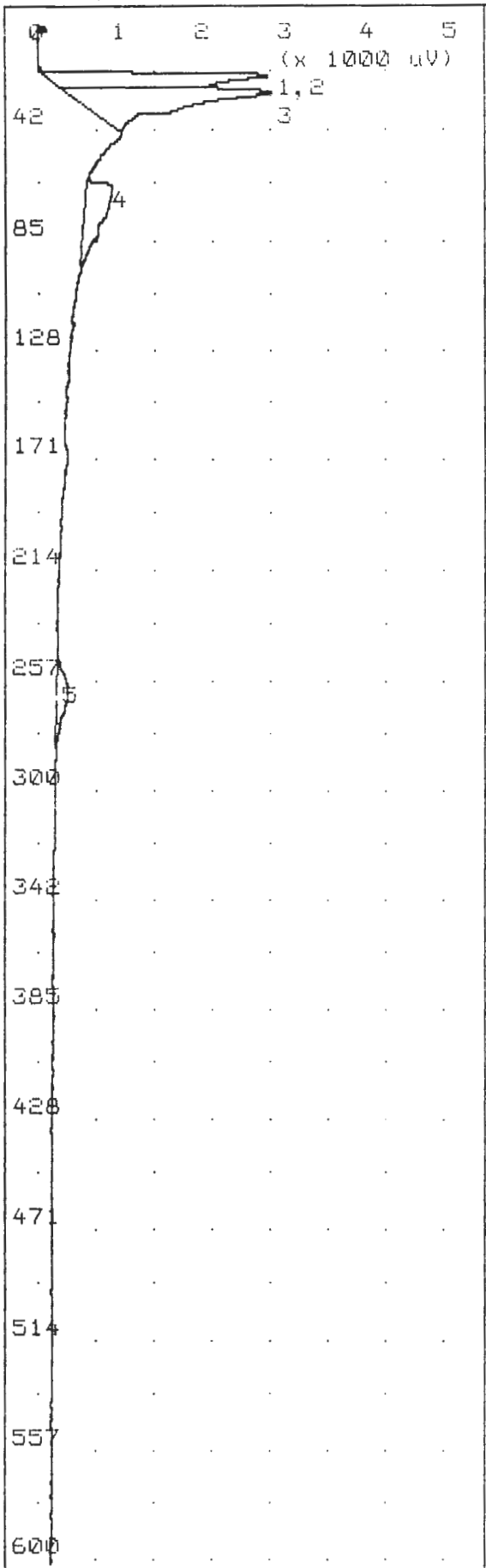
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank : Yes
Bulb Blank :

Analysis #22 10S+ GC Function Analysis Report



Printed : Oct 7,97 13:53
Run at : Oct 7,97 13:43

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.280 mVs	16.3
2	Unknown	13.95 mVs	19.7
3	Unknown	18.28 mVs	26.2
4	Unknown	6.115 mVs	64.2
5	Unknown	2.460 mVs	259.7

Notes

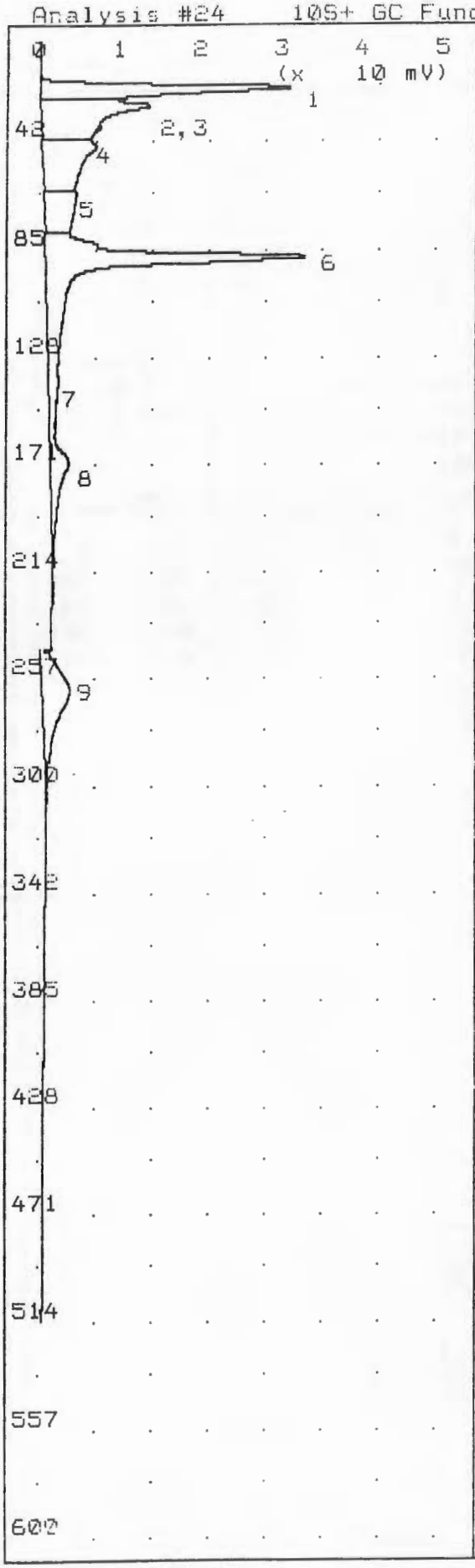
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank : Yes
Bulb Blank :

Analysis #24 105+ GC Function Analysis Report



Printed : Oct 7,97 14:10
Run at : Oct 7,97 14:01

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		147.7 mVs	18.7	
2	Unknown		136.9 mVs	25.7	
3	Unknown		0.819 mVs	34.4	
4	Unknown		105.9 mVs	42.2	
5	Unknown		59.87 mVs	61.1	
6	Unknown	TCE	340.4 mVs	85.7	633 ppb
7	Unknown	Toluene	0.191 mVs	136.2	
8	Unknown		27.44 mVs	168.0	1 ppb
9	Unknown		92.56 mVs	259.2	

914 x 3.4 = 3108

3 ppm

Notes

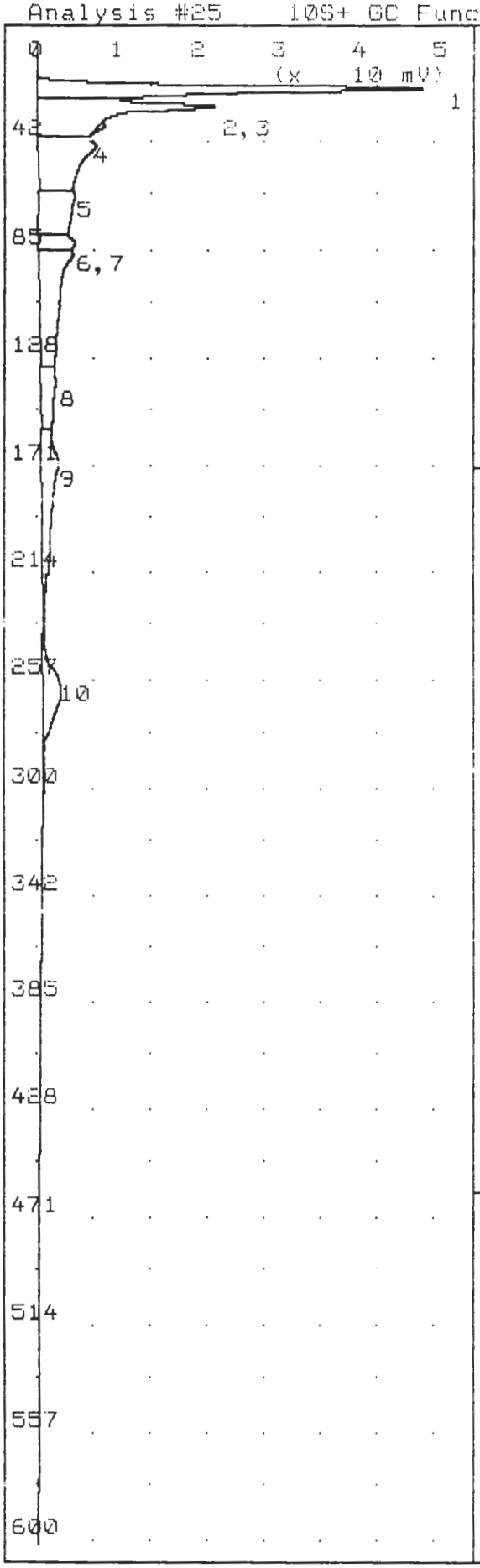
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-154
OVM Reading : 0.3 ppm
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank :
Bulb Blank :

Analysis #25 10S+ GC Function Analysis Report



Printed : Oct 7,97 14:22
Run at : Oct 7,97 14:12

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		196.8 mVs	18.8	
2	Unknown		165.3 mVs	25.8	
3	Unknown		2.166 mVs	34.2	
4	Unknown		120.2 mVs	42.2	
5	Unknown		71.26 mVs	61.2	
6	Unknown		27.70 mVs	80.2	
7	Unknown	TCE	120.1 mVs	85.3	224 ppb
8	Unknown	Toluene	42.37 mVs	135.3	144 ppb
9	Unknown		94.92 mVs	167.4	
10	Unknown		56.72 mVs	258.6	

904 × 3.4 = 3074
3 ppm

Notes

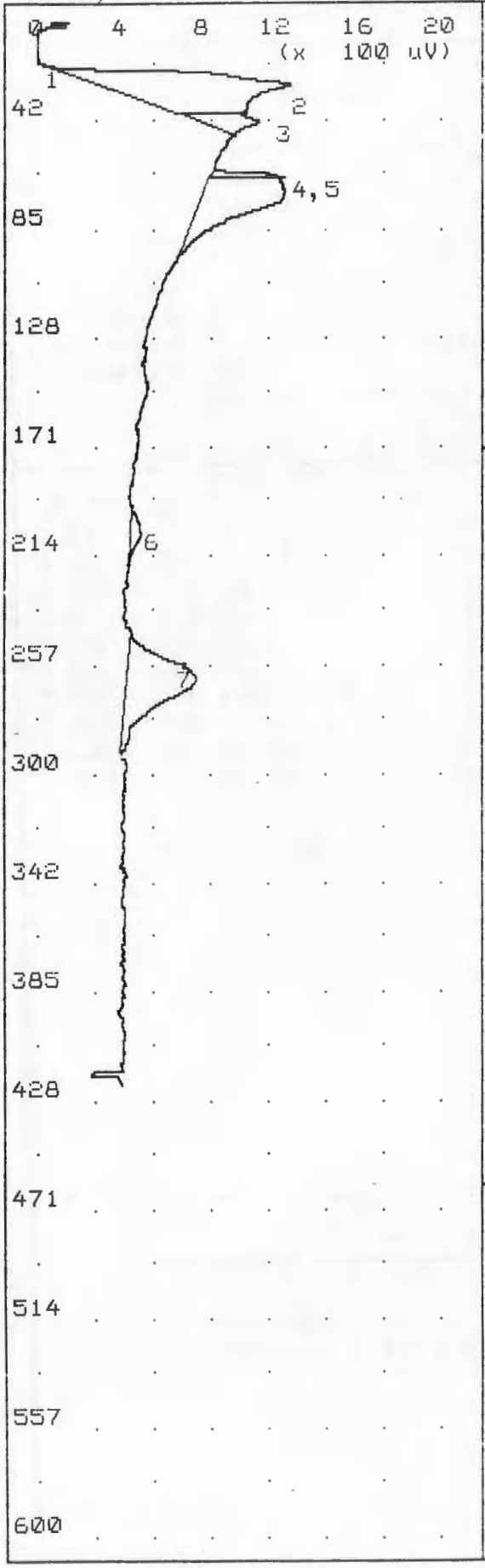
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-156
OVM Reading : 0.1 ppm
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank :
Bulb Blank :

Analysis #26 10S+ GC Function Analysis Report



Printed : Oct 7,97 14:36
Run at : Oct 7,97 14:29

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.000 mVs	14.8
2	Unknown	11.48 mVs	25.8
3	Unknown	1.526 mVs	40.8
4	Unknown	0.719 mVs	62.8
5	Unknown	6.392 mVs	63.9
6	Unknown	0.557 mVs	204.2
7	Unknown	6.839 mVs	253.8

Notes

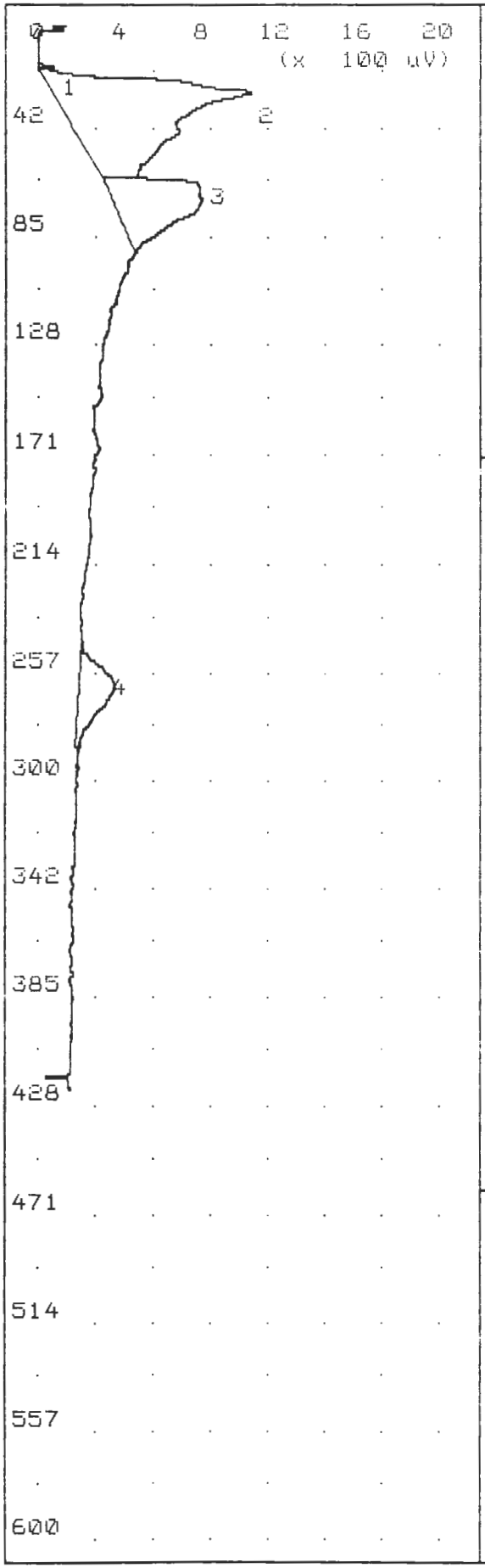
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank : Yes
Bulb Blank :

Analysis #27 10S+ GC Function Analysis Report



Printed : Oct 7,97 14:45
Run at : Oct 7,97 14:38

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.429 mVs	16.3
2	Unknown	22.86 mVs	25.9
3	Unknown	8.321 mVs	63.3
4	Unknown	3.596 mVs	258.6

Notes

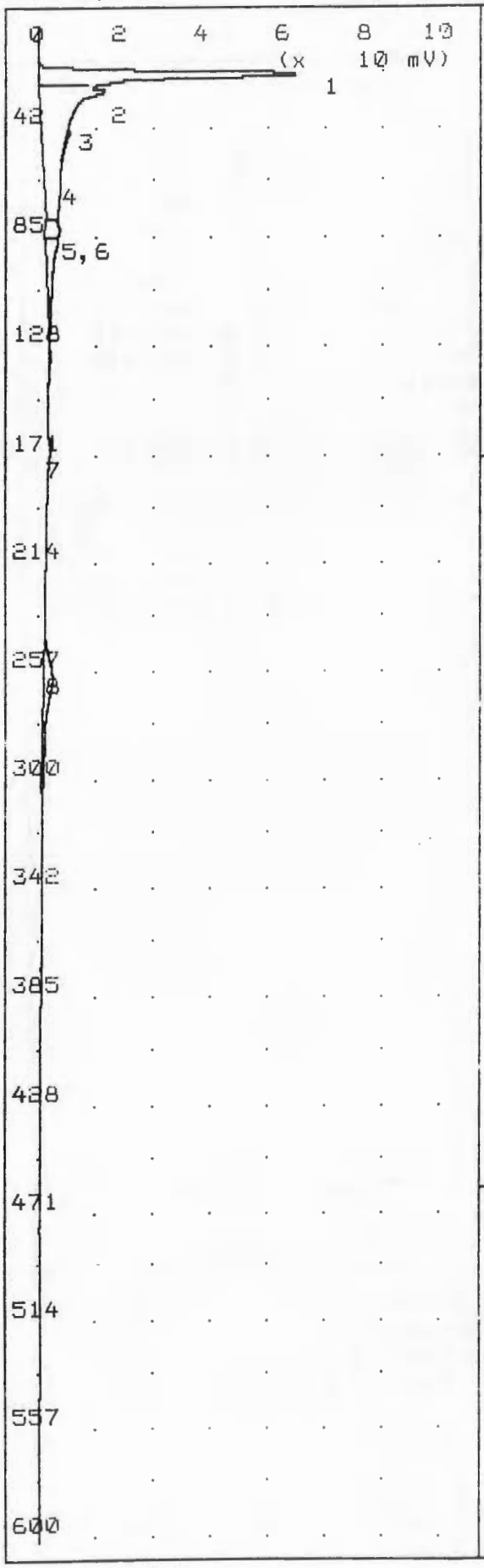
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank : Yes
Bulb Blank :

Analysis #28 10S+ GC Function Analysis Report



Printed : Oct 7,97 14:57
Run at : Oct 7,97 14:47

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		261.5 mVs	18.8	
2	Unknown		330.1 mVs	25.6	
3	Unknown		1.846 mVs	41.9	
4	Unknown		3.345 mVs	62.0	
5	Unknown		21.96 mVs	80.0	
6	Unknown	TCE	52.72 mVs	84.4	98 ppb
7	Unknown		17.19 mVs	166.2	
8	Unknown		56.16 mVs	256.5	

748 x 3.4 = 2543

2.5 ppm

Notes

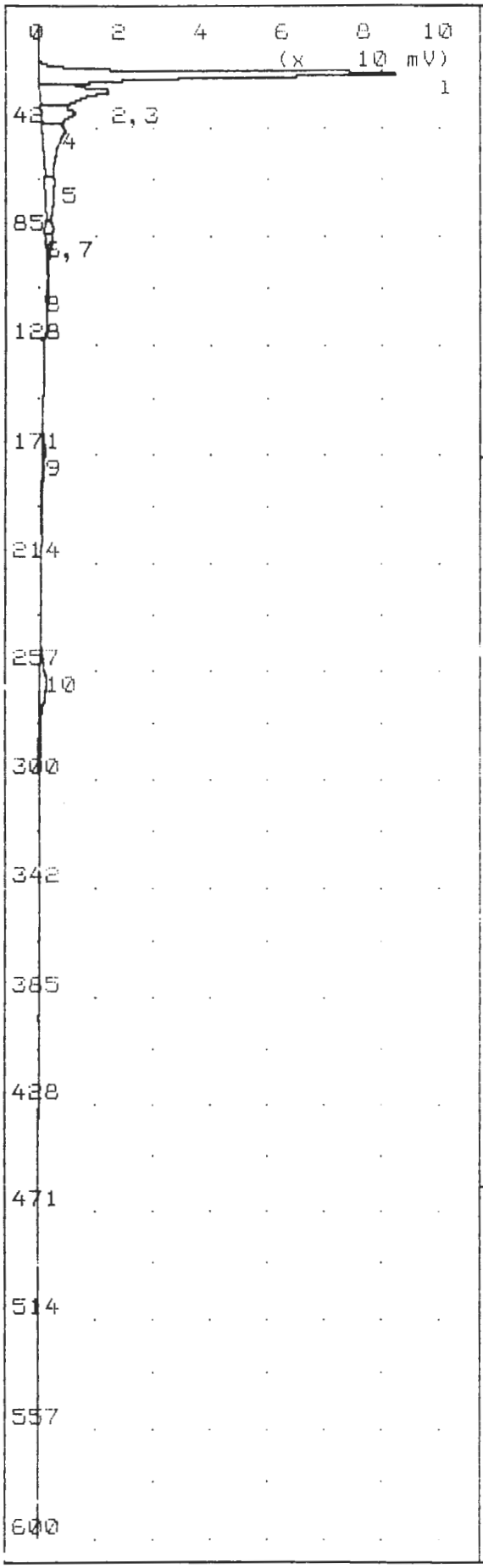
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-152
OVM Reading : 0.1 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank :
Bulb Blank :

Analysis #29 10ft GC Function Analysis Report



Printed : Oct 7,97 15:08
Run at : Oct 7,97 14:58

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	300.6 mVs	18.7
2	Unknown	93.90 mVs	25.7
3	Unknown	47.63 mVs	34.3
4	Unknown	83.63 mVs	41.0
5	Unknown	37.84 mVs	61.8
6	Unknown	10.70 mVs	79.8
7	Unknown	16.76 mVs	84.8
8	Unknown	0.836 mVs	105.8
9	Unknown	8.139 mVs	168.0
10	Unknown	25.30 mVs	257.3

31 ppb

629 x 3.4 = 2139

2 ppm

Notes

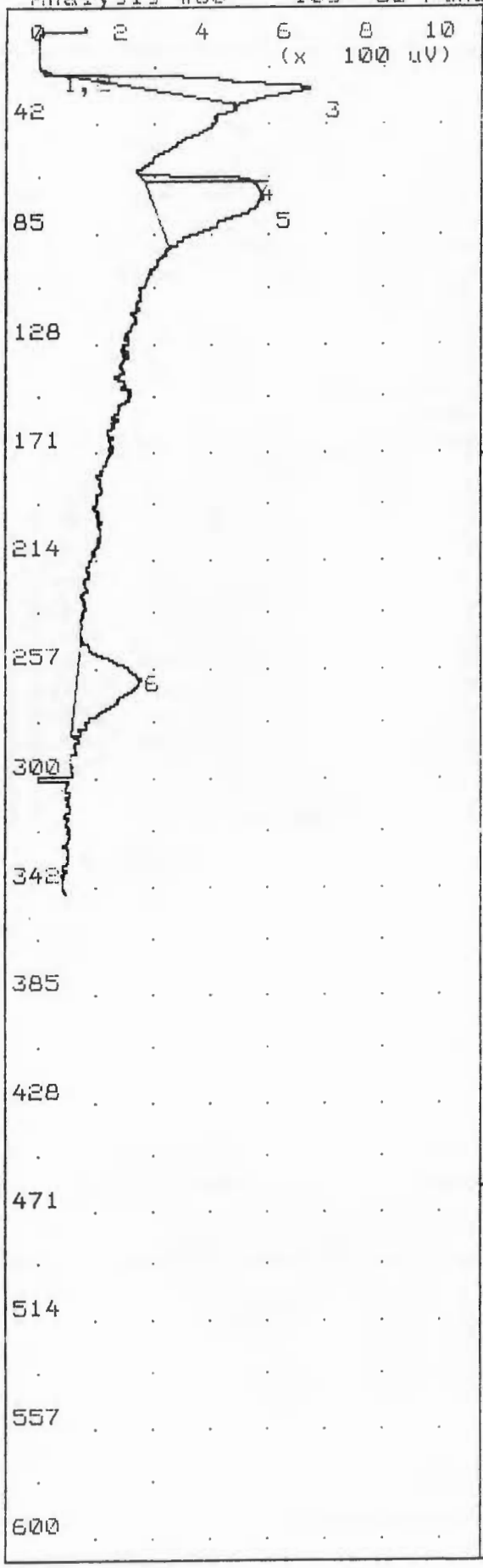
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-153
OVM Reading : 0.3 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank :
Bulb Blank :

Analysis #30 10S+ GC Function Analysis Report



Printed : Oct 7,97 15:16
Run at : Oct 7,97 15:10

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.033	mVs	16.9
2	Unknown	0.079	mVs	19.0
3	Unknown	3.178	mVs	25.9
4	Unknown	0.636	mVs	62.9
5	Unknown	4.541	mVs	69.0
6	Unknown	2.960	mVs	258.4

Notes

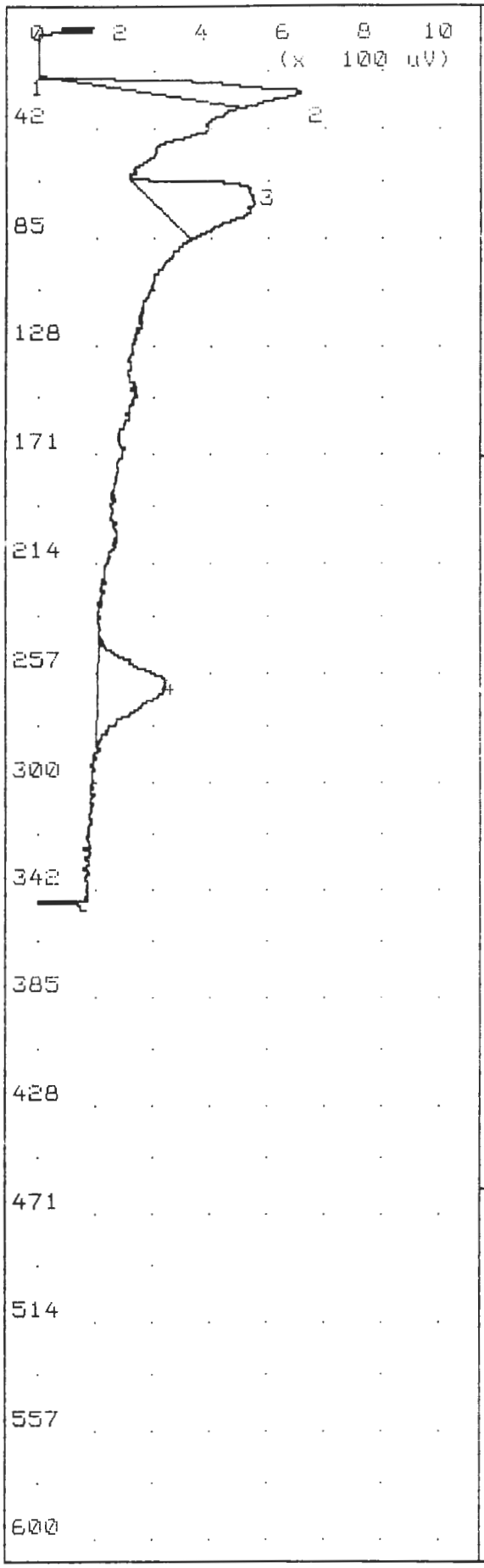
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 6

Syringe Blank : Yes
Bulb Blank :

Analysis #31 10S+ GC Function Analysis Report



Printed : Oct 7,97 15:24
Run at : Oct 7,97 15:18

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.018 mVs	19.6
2	Unknown	3.157 mVs	26.6
3	Unknown	4.249 mVs	63.7
4	Unknown	3.205 mVs	257.0

Notes

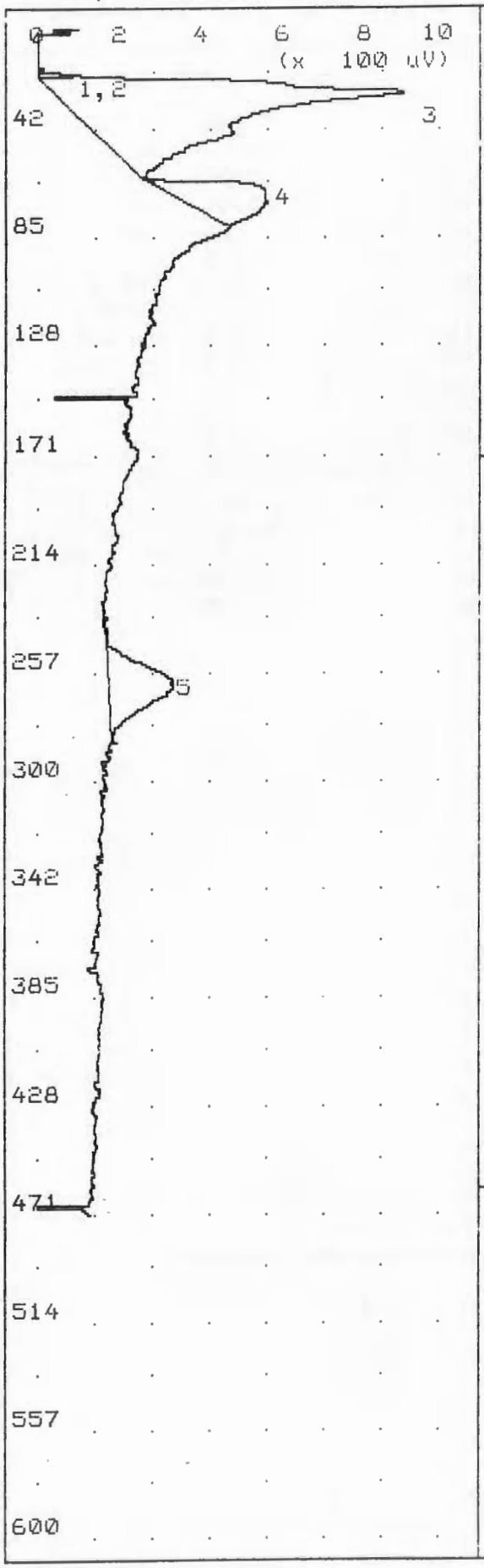
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank : Yes
Bulb Blank :

Analysis #32 10S+ GC Function Analysis Report



Printed : Oct 7,97 15:34
Run at : Oct 7,97 15:20

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.364 mVs	16.6
2	Unknown	0.443 mVs	18.6
3	Unknown	16.46 mVs	25.7
4	Unknown	3.128 mVs	63.7
5	Unknown	3.064 mVs	259.7

Notes

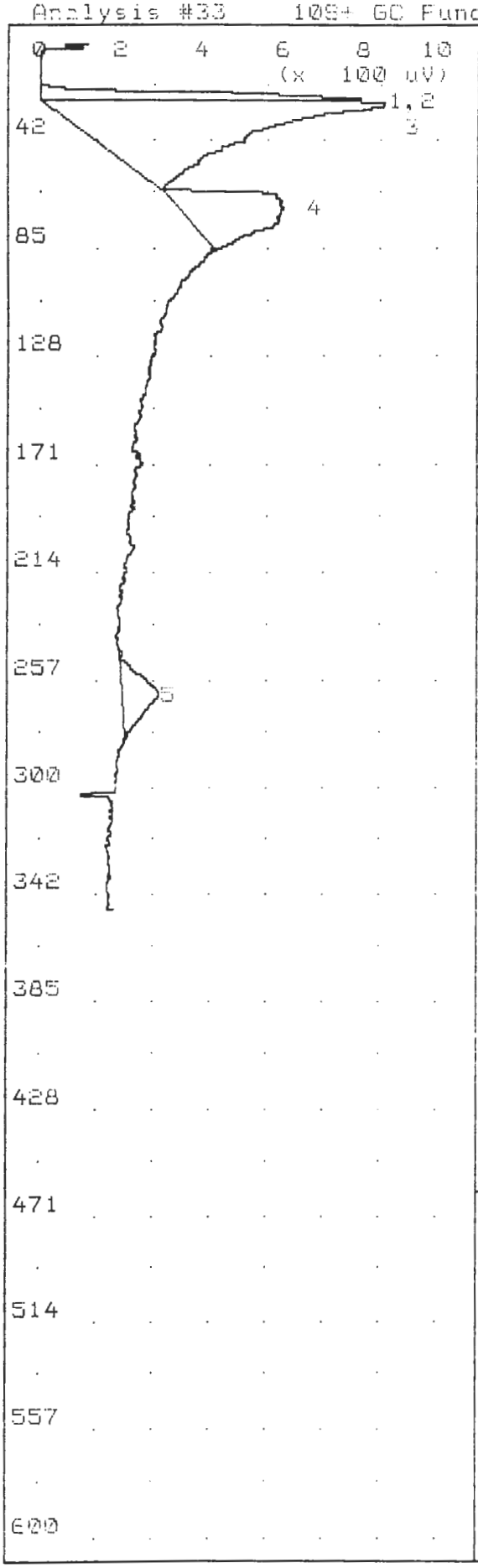
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank : Yes
Bulb Blank :

Analysis #33 1094 GC Function Analysis Report



Printed : Oct 7,97 15:42
Run at : Oct 7,97 15:36

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.255	mVs	14.9
2	Unknown	3.458	mVs	23.4
3	Unknown	13.26	mVs	26.3
4	Unknown	4.290	mVs	62.4
5	Unknown	1.622	mVs	259.7

Notes

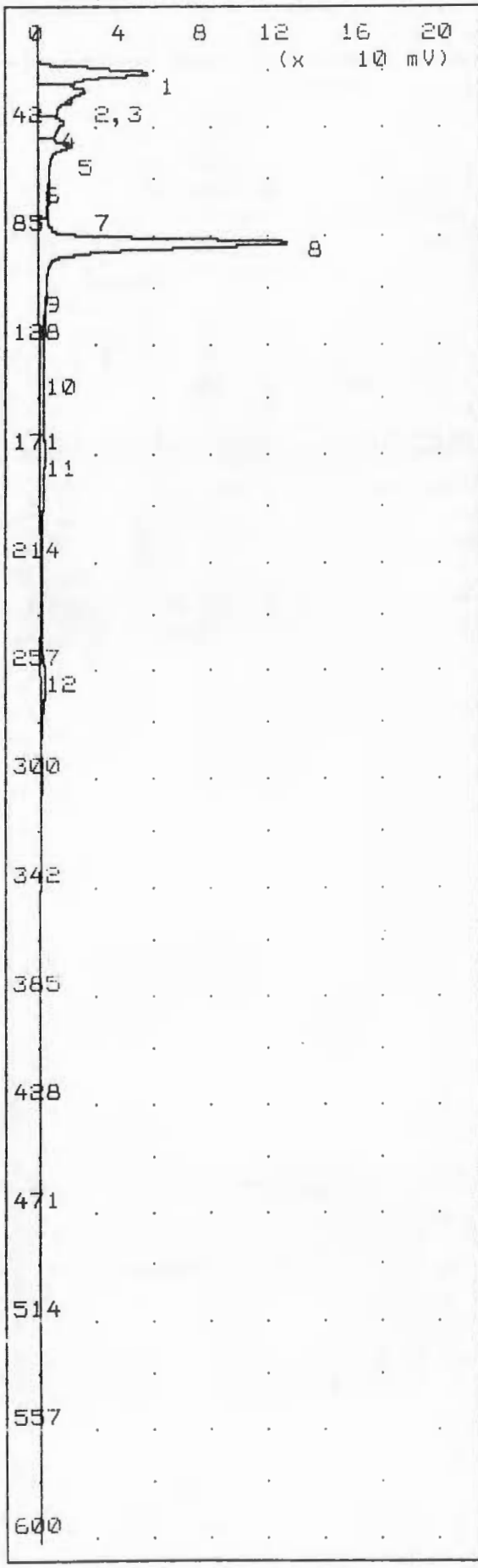
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank : Yes
Bulb Blank :

Analysis #34 10S+ GC Function Analysis Report



Printed : Oct 7,97 15:54
Run at : Oct 7,97 15:43

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		276.0 mVs	18.7	
2	Unknown		188.2 mVs	25.7	
3	Unknown		4.509 mVs	29.8	
4	Unknown		93.00 mVs	38.2	
5	Unknown	cis1,2 DCE	210.1 mVs	47.7	452 ppb
6	Unknown		1.997 mVs	61.2	
7	Unknown	Benzene	2.018 mVs	68.2	3 ppb
8	Unknown	TCE	918.2 mVs	85.7	1708 p
9	Unknown		1.071 mVs	106.2	
10	Unknown	Toluene	4.497 mVs	135.3	21
11	Unknown		91.33 mVs	167.4	
12	Unknown		83.21 mVs	258.6	

1881 × 3.4 = 6395

6.5 ppm

Notes

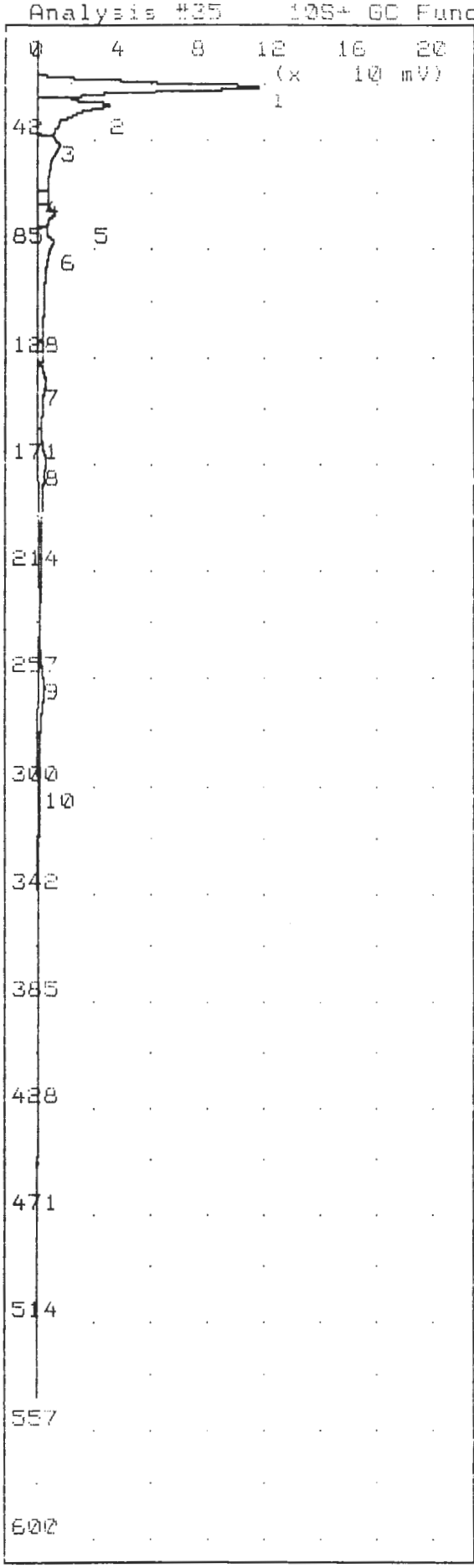
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-121
OVM Reading : 0.8 ppm
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank :
Bulb Blank :

Analysis #35 10S+ GC Function Analysis Report



Printed : Oct 7,97 16:04
Run at : Oct 7,97 15:55

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		507.1 mVs	18.8	1.7 ppm
2	Unknown		269.7 mVs	25.9	
3	Unknown		165.9 mVs	42.0	
4	Unknown		30.77 mVs	61.8	
5	Unknown	Benzene	59.41 mVs	68.6	146 ppb
6	Unknown		211.0 mVs	80.4	
7	Unknown	Toluene	73.52 mVs	136.0	250 ppb
8	Unknown		168.0 mVs	167.8	
9	Unknown		89.86 mVs	259.2	
10	Unknown	p-xylene	21.29 mVs	303.4	140.5 pp

1602 x 3.4 = 5447

5.5 ppm

Notes

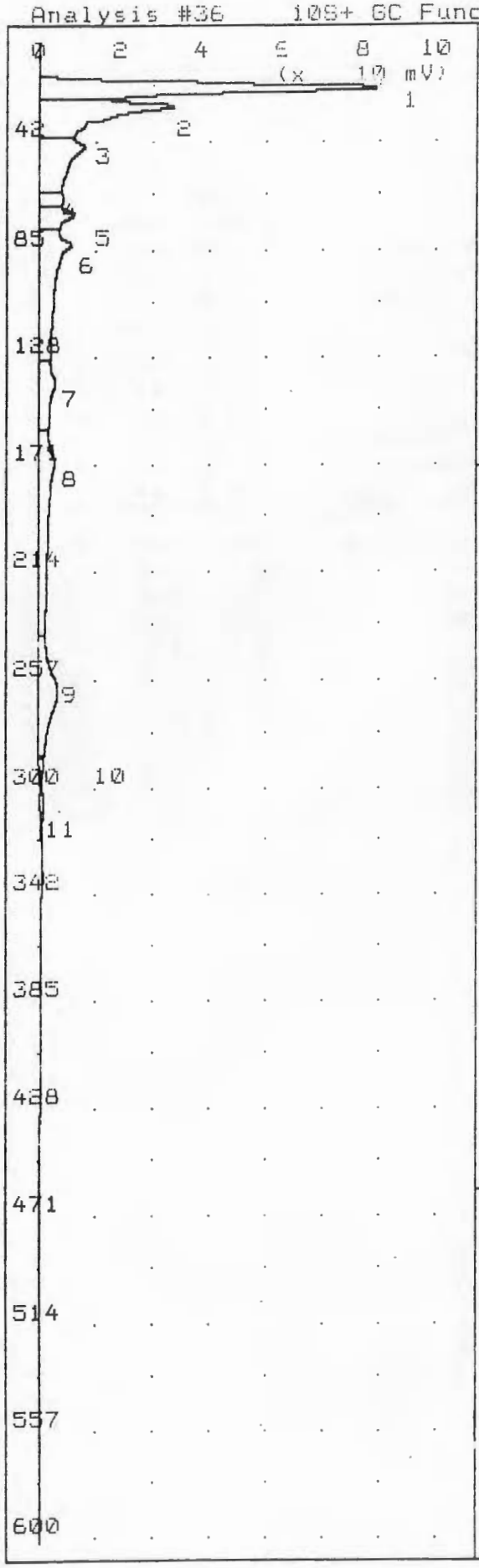
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-126
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank :
Bulb Blank :

Analysis #36 1084 GC Function Analysis Report



Printed : Oct 7,97 16:16
Run at : Oct 7,97 16:06

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	416.5 mVs	18.6
2	Unknown	271.5 mVs	25.8
3	Unknown	174.5 mVs	42.1
4	Unknown	35.54 mVs	62.1
5	Unknown	62.94 mVs	68.4
6	Unknown	234.1 mVs	80.4
7	Unknown	92.51 mVs	136.2
8	Unknown	214.5 mVs	167.4
9	Unknown	146.5 mVs	258.6
10	Unknown	16.59 mVs	284.8
11	Unknown	19.35 mVs	305.6

Notes

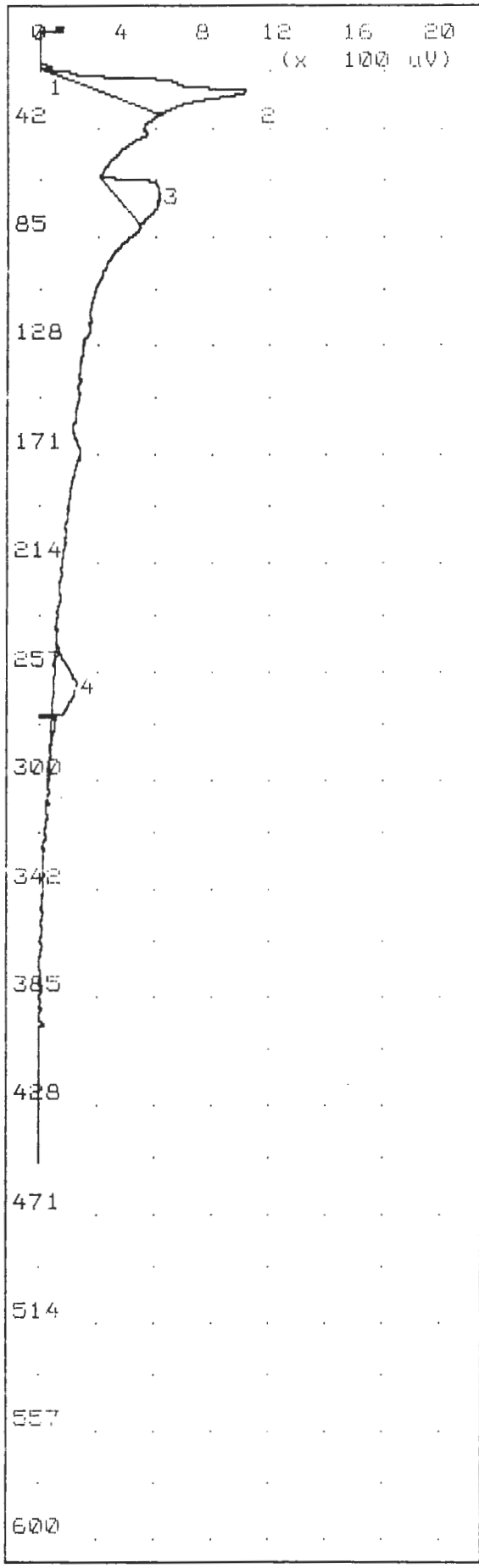
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-126Dup
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank :
Bulb Blank :

Analysis #37 10S+ GC Function Analysis Report



Printed : Oct 7,97 16:27
Run at : Oct 7,97 16:19

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.255 mVs	16.2
2	Unknown	6.360 mVs	25.2
3	Unknown	3.006 mVs	63.3
4	Unknown	2.025 mVs	257.6

Notes

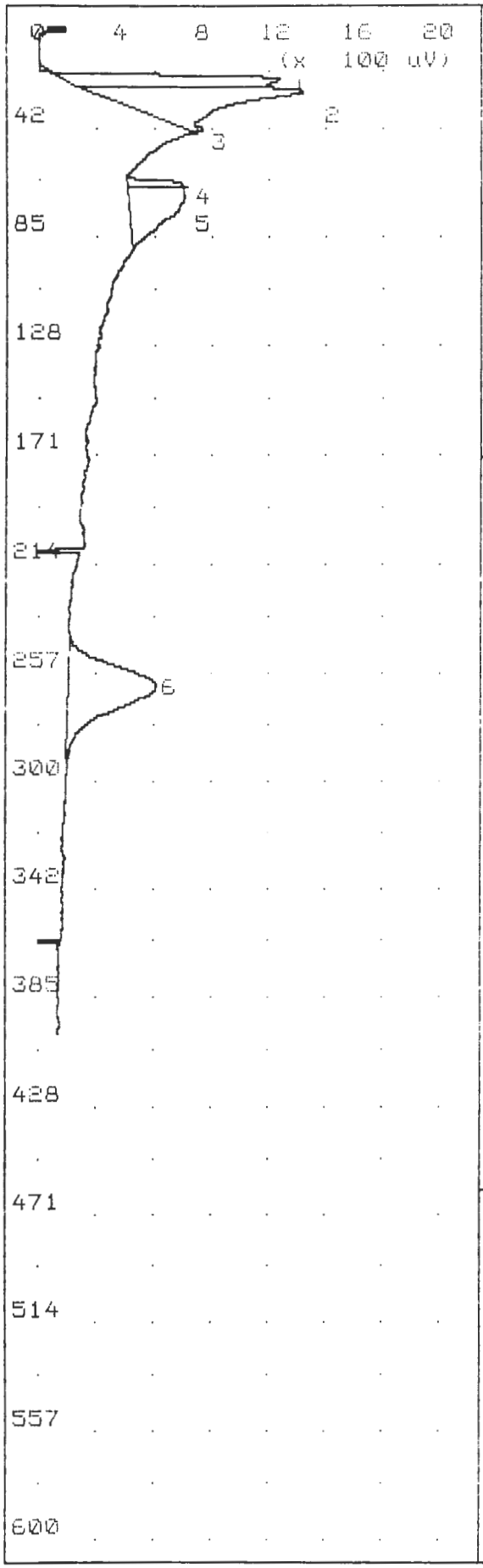
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank : Yes
Bulb Blank :

Analysis #28 105+ GC Function Analysis Report



Printed : Oct 7,97 16:36
Run at : Oct 7,97 16:29

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	5.658 mVs	21.0
2	Unknown	8.131 mVs	26.0
3	Unknown	0.052 mVs	40.0
4	Unknown	0.888 mVs	64.0
5	Unknown	4.125 mVs	69.0
6	Unknown	8.539 mVs	258.4

Notes

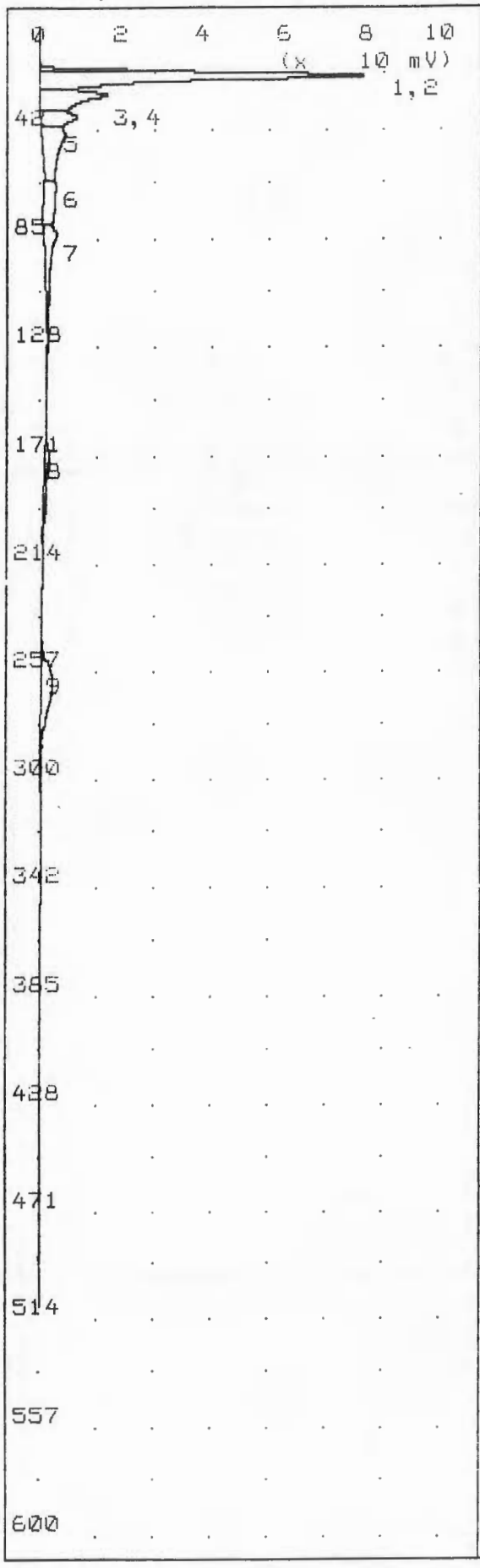
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank : Yes
Bulb Blank :

Analysis #39 10S+ GC Function Analysis Report



Printed : Oct 7,97 16:46
Run at : Oct 7,97 16:37

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	47.03 mVs	17.0
2	Unknown	278.7 mVs	18.8
3	Unknown	90.69 mVs	26.2
4	Unknown	49.42 mVs	34.8
5	Unknown	88.26 mVs	41.9
6	Unknown	45.44 mVs	61.4
7	Unknown	51.92 mVs	81.0
8	Unknown	18.74 mVs	168.2
9	Unknown	56.99 mVs	258.9

731 x 3.4 = 2485

2.5 ppm

No Target Compounds

Notes

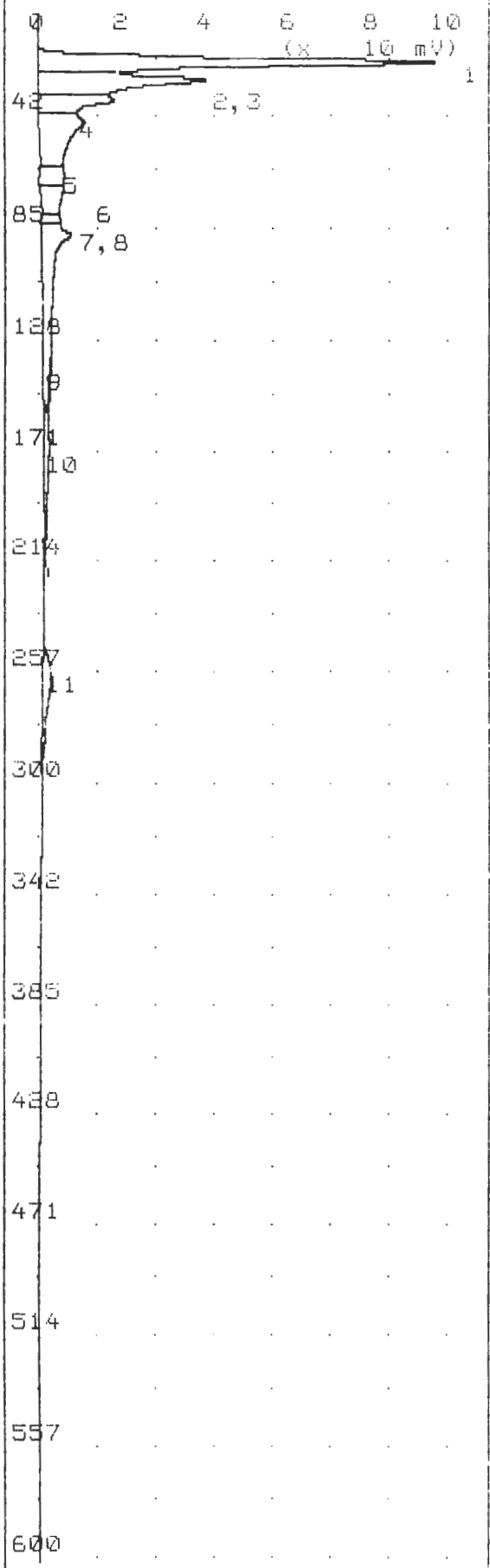
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-18
OVM Reading : 0.5 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank :
Bulb Blank :

Analysis #40 1089+ GC Function Analysis Report



Printed : Oct 7,97 17:00
Run at : Oct 7,97 16:50

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		424.0 mVs	19.0	
2	Unknown		226.6 mVs	26.0	
3	Unknown		102.6 mVs	34.0	
4	Unknown		162.5 mVs	42.4	
5	Unknown		41.21 mVs	63.3	
6	Unknown	Benzene	53.91 mVs	68.5	132 ppb
7	Unknown		20.41 mVs	80.5	
8	Unknown	TCE	247.6 mVs	85.6	461 ppb
9	Unknown	Toluene	2.210 mVs	134.5	11 ppb
10	Unknown		2.546 mVs	167.8	
11	Unknown		45.45 mVs	257.8	

1334 × 3.4 = 4536
4.5 ppm

Notes

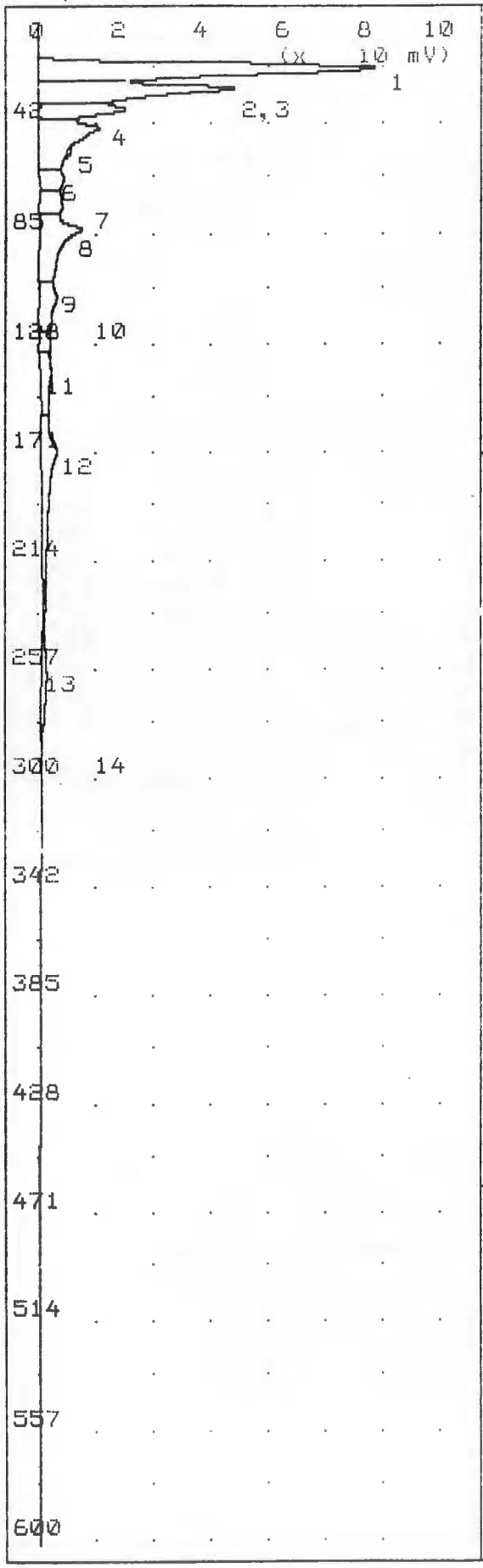
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-119
OVM Reading : 0.7 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank :
Bulb Blank :

Analysis #41 10S+ EC Function Analysis Report



Printed : Oct 7,97 17:13
Run at : Oct 7,97 17:03

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	34/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.	
1	Unknown		472.0	mVs	18.3	
2	Unknown		274.7	mVs	26.2	
3	Unknown		109.2	mVs	34.6	
4	Unknown		178.8	mVs	42.0	
5	Unknown		2.342	mVs	50.7	
6	Unknown		51.71	mVs	61.0	
7	Unknown		49.96	mVs	72.1	
8	Unknown		145.4	mVs	80.8	
9	Unknown		66.07	mVs	107.0	
10	Unknown		20.81	mVs	121.0	
11	Unknown	Toluene	57.85	mVs	136.1	197 ppb
12	Unknown		164.5	mVs	168.2	
13	Unknown		37.63	mVs	257.6	
14	Unknown		0.699	mVs	283.7	

1638 × 3.4 = 5569

5.5 ppm

Notes

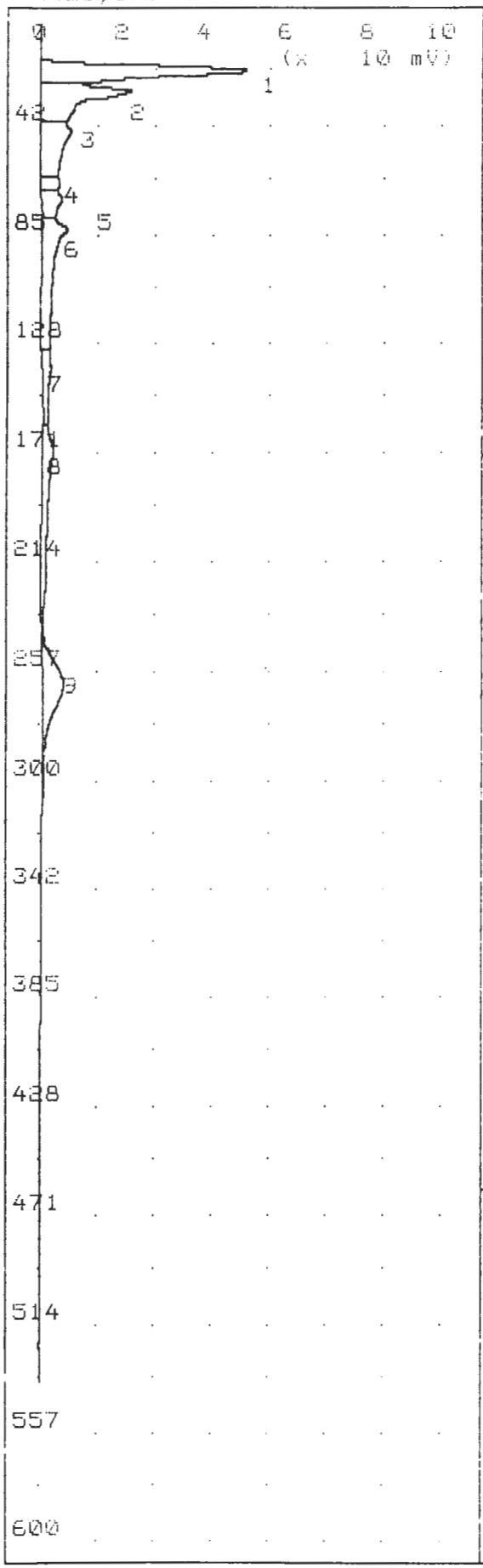
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-120
OVM Reading : 0.4 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 6

Syringe Blank :
Bulb Blank :

Analysis #42 10S+ GC Function Analysis Report



Printed : Oct 7,97 17:24
Run at : Oct 7,97 17:15

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.	
1	Unknown		273.2	mVs	18.6	
2	Unknown		180.6	mVs	26.0	
3	Unknown		122.8	mVs	42.1	
4	Unknown		25.96	mVs	62.5	
5	Unknown	Benzene	47.36	mVs	68.6	116 ppb
6	Unknown		159.7	mVs	80.5	
7	Unknown	Toluene	50.08	mVs	136.6	170 ppb
8	Unknown		110.6	mVs	167.8	
9	Unknown		124.6	mVs	260.0	

1099 × 3.4 = 3737

4 ppm

Notes

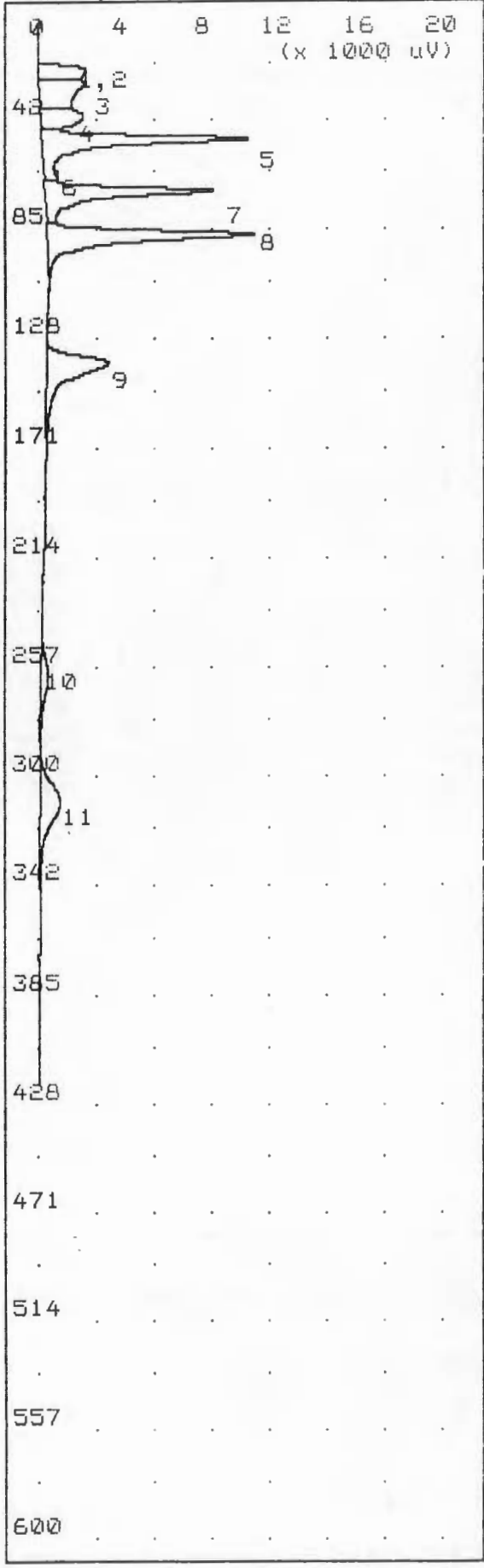
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-123
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank :
Bulb Blank :

Analysis #43 10S+ GC Function Analysis Report



Printed : Oct 7,97 17:33
Run at : Oct 7,97 17:26

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.173 mVs	16.3
2	Unknown	13.73 mVs	20.1
3	Unknown	22.07 mVs	25.6
4	Unknown	14.82 mVs	39.1
5	Unknown	49.34 mVs	47.5
6	Unknown	0.412 mVs	62.2
7	Unknown	39.98 mVs	68.2
8	Unknown	55.48 mVs	85.2
9	Unknown	29.29 mVs	135.2
10	Unknown	6.490 mVs	257.6
11	Unknown	17.87 mVs	307.7

Notes

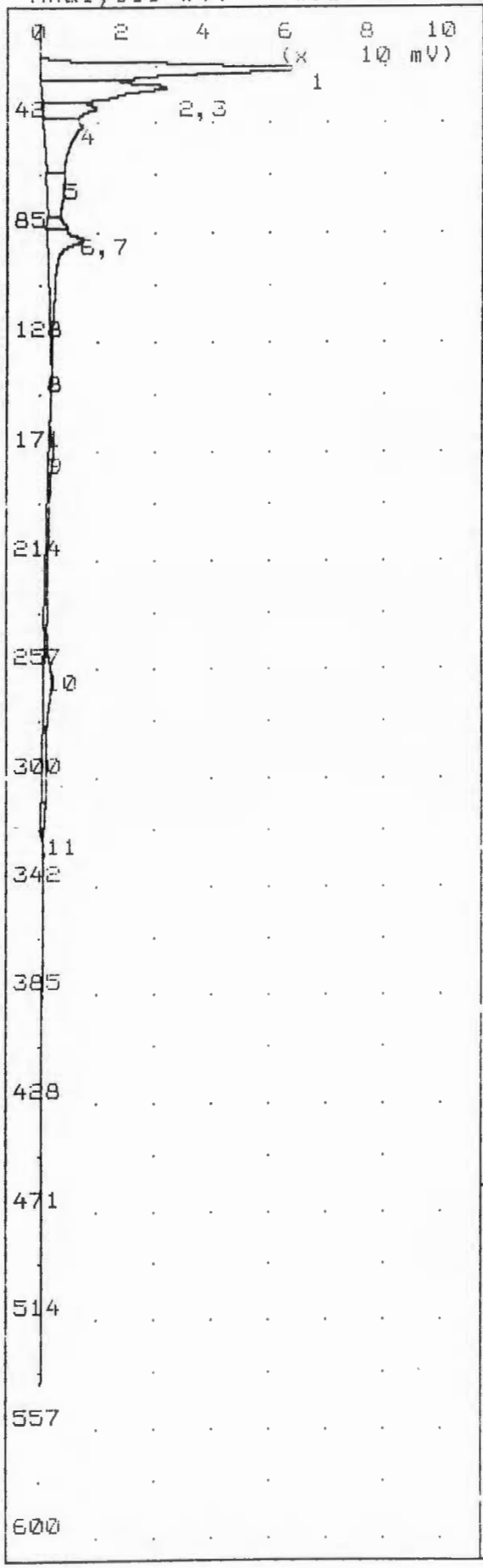
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #44 10S+ GC Function Analysis Report



Printed : Oct 7,97 17:45
Run at : Oct 7,97 17:35

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		334.3 mVs	18.7	
2	Unknown		186.8 mVs	25.9	
3	Unknown		78.34 mVs	34.4	
4	Unknown		141.5 mVs	41.4	
5	Unknown		69.00 mVs	61.4	
6	Unknown		23.00 mVs	80.5	
7	Unknown	TCE	102.5 mVs	85.6	191 ppb
8	Unknown	Toluene	0.292 mVs	135.4	1.4 ppb
9	Unknown		32.71 mVs	168.6	
10	Unknown		75.83 mVs	259.7	
11	Unknown		1.785 mVs	320.8	

1050 × 3.4 = 3570

3.5 ppm

Notes

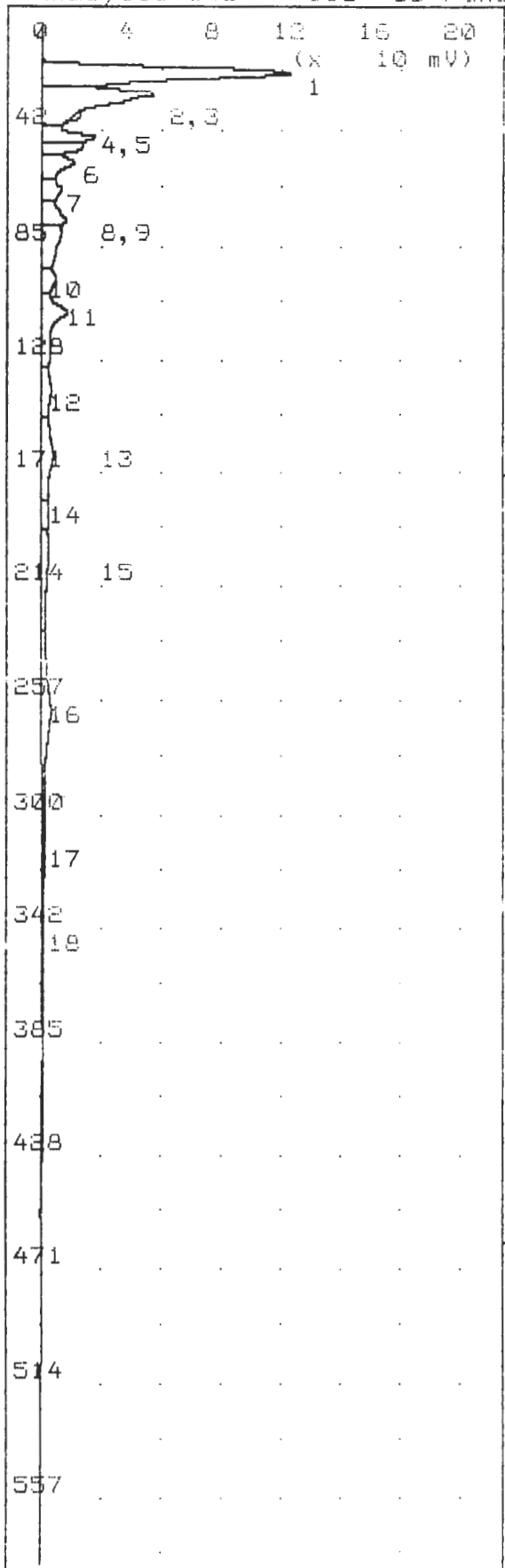
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-141
OVM Reading : 0.1 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank :
Bulb Blank :

Analysis #45 10S+ GC Function Analysis Report



Printed : Oct 7,97 17:56
Run at : Oct 7,97 17:46

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	15.0	ml/min
Backflush Flow	15.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown	?	655.7 mVs	18.9	2.2 ppm
2	Unknown		411.1 mVs	26.5	
3	Unknown		8.087 mVs	34.4	
4	Unknown		115.3 mVs	42.5	
5	Unknown		68.30 mVs	46.0	
6	Unknown		96.17 mVs	51.8	
7	Unknown		69.21 mVs	61.0	
8	Unknown		83.16 mVs	73.2	
9	Unknown		116.0 mVs	77.4	
10	Unknown		58.81 mVs	95.0	
11	Unknown		160.9 mVs	107.7	
12	Unknown	Toluene	73.56 mVs	136.6	250 ppb
13	Unknown		132.6 mVs	161.6	
14	Unknown		32.54 mVs	184.2	
15	Unknown		94.61 mVs	198.6	
16	Unknown		278.2 mVs	258.4	
17	Unknown	p-xylene	2.243 mVs	305.8	14 ppb
18	Unknown		3.514 mVs	344.0	

2471 × 3.4 = 8402

8.5 ppm

Sample taken under Asphalt

Notes

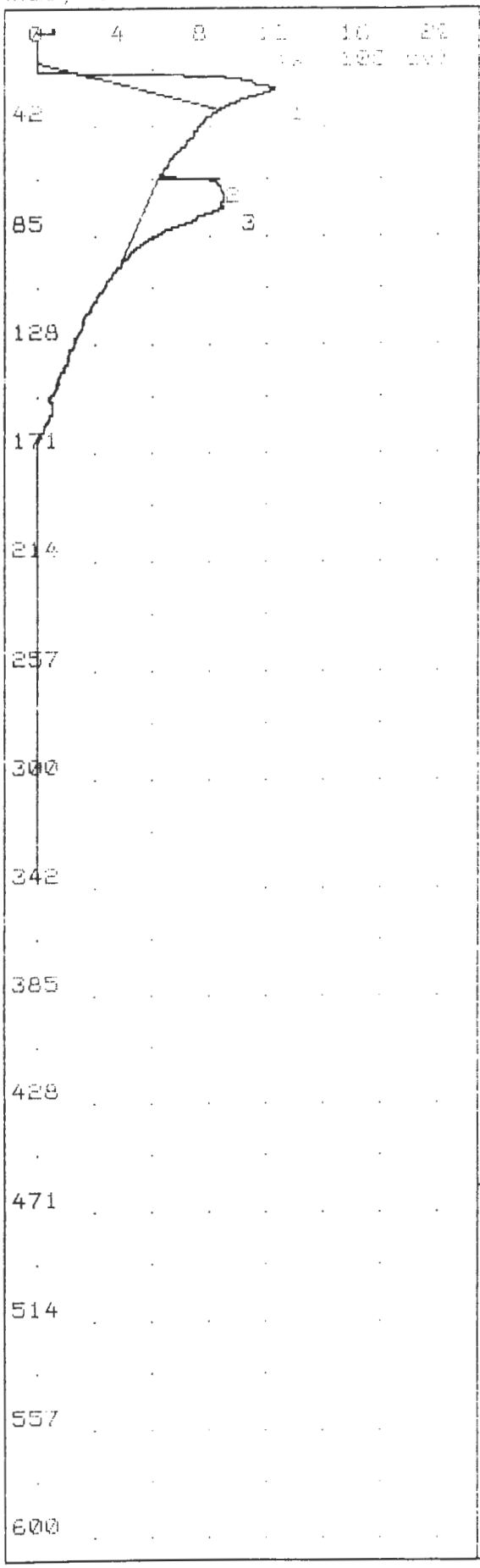
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-122
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank :
Bulb Blank :

Analysis #40 [illegible] Analysis Report



Printed : Oct 6,97 07:45
Run at : Oct 9,97 07:39

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	33/35	C
Amb Temp	22	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	7.683 mVs	25.3
2	Unknown	0.255 mVs	61.4
3	Unknown	6.721 mVs	69.2

Notes

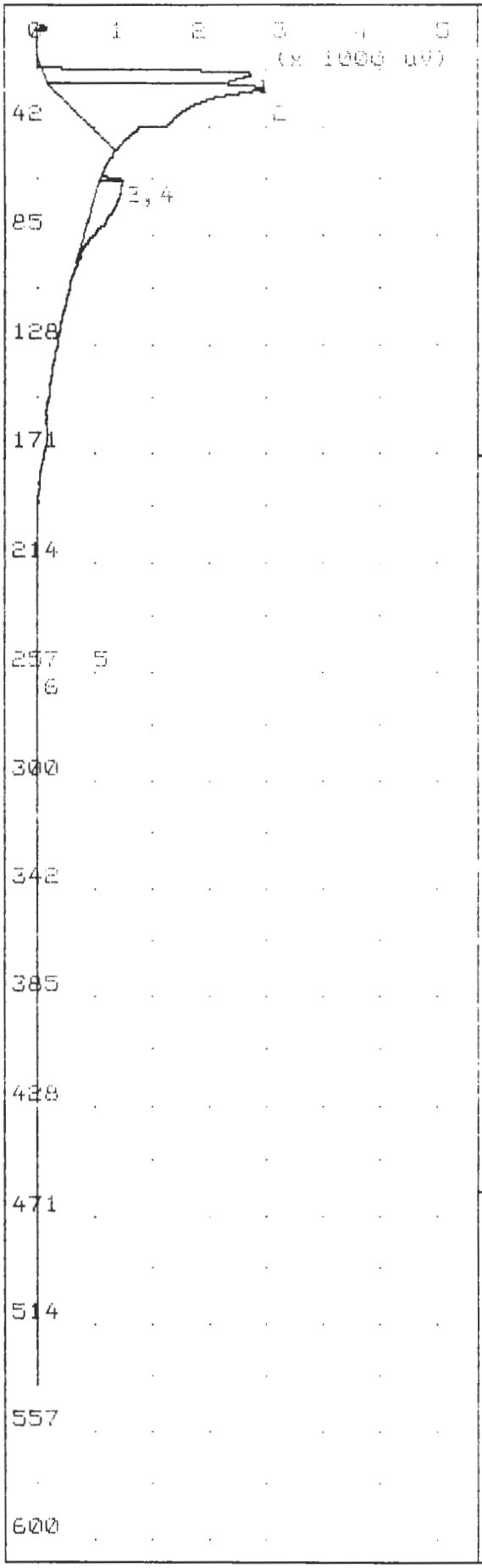
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank : Yes
Bulb Blank :

Analysis #47 Ion+ 02 Function Analysis Report



Printed : Oct 8,97 08:02
Run at : Oct 8,97 07:53

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	24	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	14.68	mVs	20.0
2	Unknown	30.78	mVs	25.0
3	Unknown	0.451	mVs	62.1
4	Unknown	5.668	mVs	63.0
5	Unknown	0.138	mVs	242.1
6	Unknown	2.214	mVs	252.5

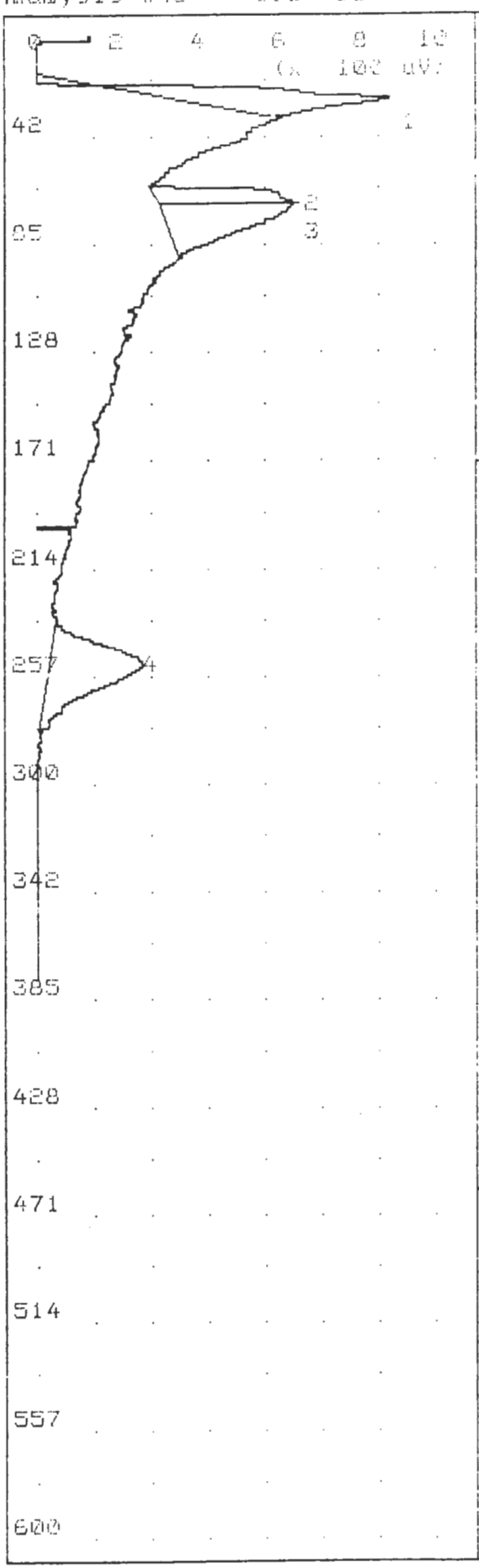
Notes

Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank : Yes
Bulb Blank :



Printed : Oct 8,97 08:39
Run at : Oct 8,97 08:28

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	26	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	5.068 mVs	25.5
2	Unknown	2.226 mVs	67.6
3	Unknown	3.574 mVs	60.6
4	Unknown	4.619 mVs	248.0

Notes

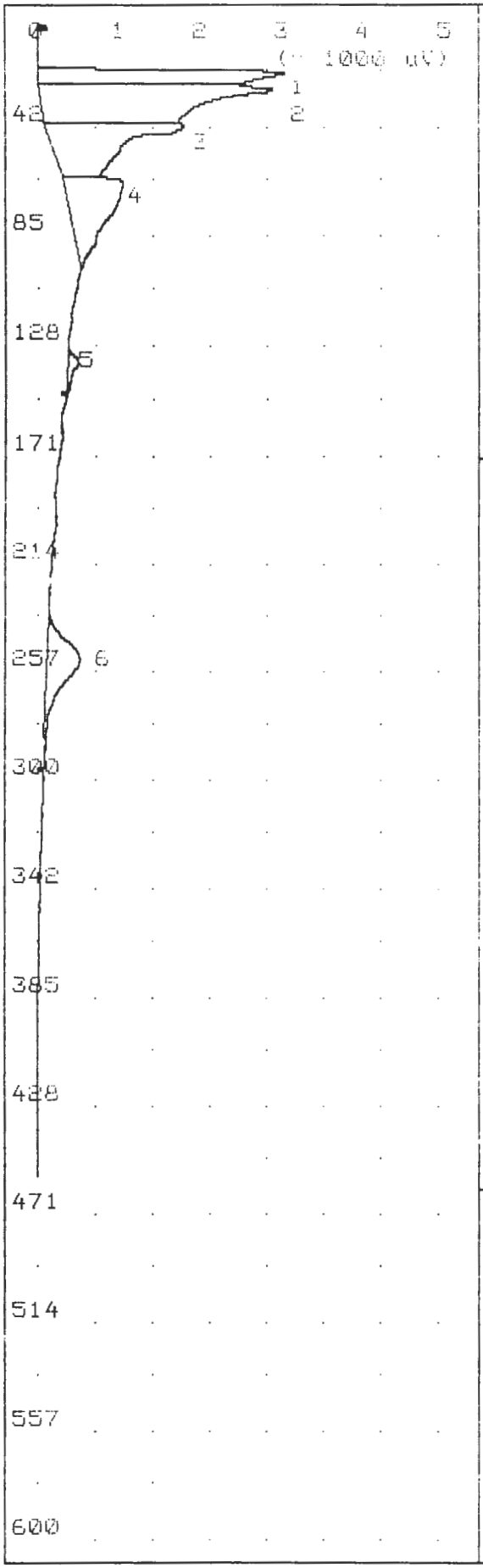
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 6

Syringe Blank : Yes
Bulb Blank :

Analysis #1 102+ GC Function Analysis Report



Printed : Oct 8,97 08:53
Run at : Oct 8,97 08:46

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	27 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	18.51 mVs	19.2
2	Unknown	31.93 mVs	25.6
3	Unknown	20.37 mVs	39.2
4	Unknown	14.83 mVs	63.2
5	Unknown	0.899 mVs	132.2
6	Unknown	7.966 mVs	249.6

Notes

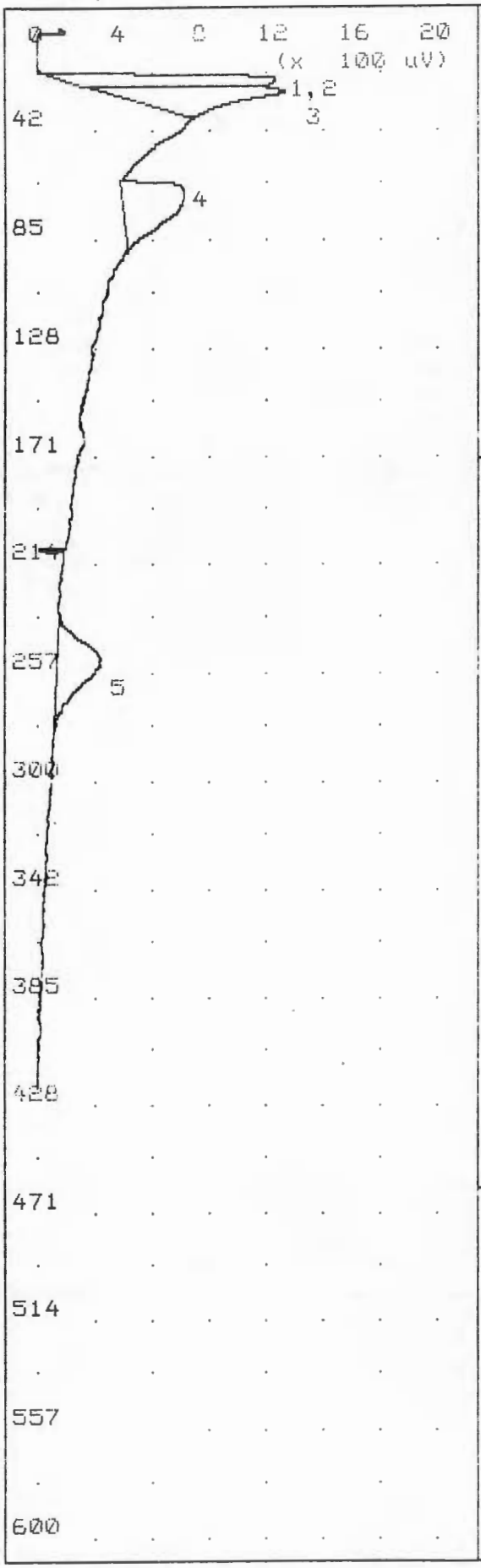
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank : Yes
Bulb Blank : Yes

Analysis #2 1754 GC Function Analysis Report



Printed : Oct 8,97 09:02
Run at : Oct 8,97 08:55

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	28 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.036	mVs	15.5
2	Unknown	6.039	mVs	20.6
3	Unknown	5.486	mVs	25.6
4	Unknown	5.606	mVs	62.6
5	Unknown	4.368	mVs	250.9

Notes

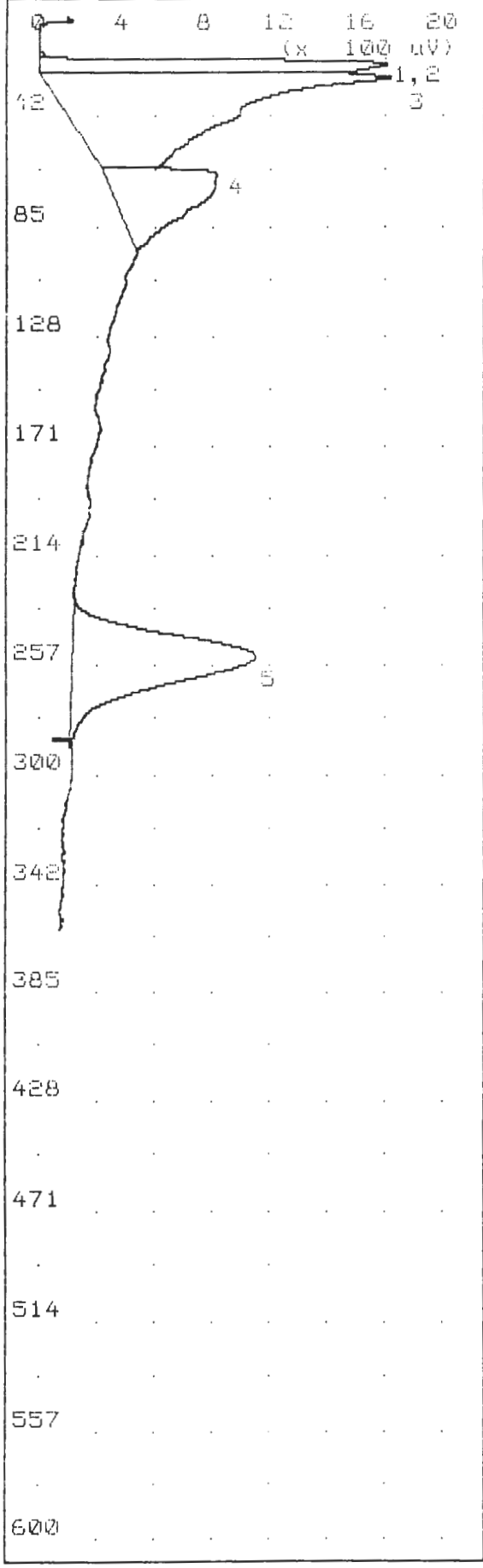
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank : Yes
Bulb Blank :

Analysis #3 1084 GC Function Analysis Report



Printed : Oct 8,97 09:10
Run at : Oct 8,97 09:04

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	29 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.326 mVs	16.1
2	Unknown	10.02 mVs	20.1
3	Unknown	30.34 mVs	25.2
4	Unknown	10.48 mVs	63.2
5	Unknown	19.59 mVs	250.6

Notes

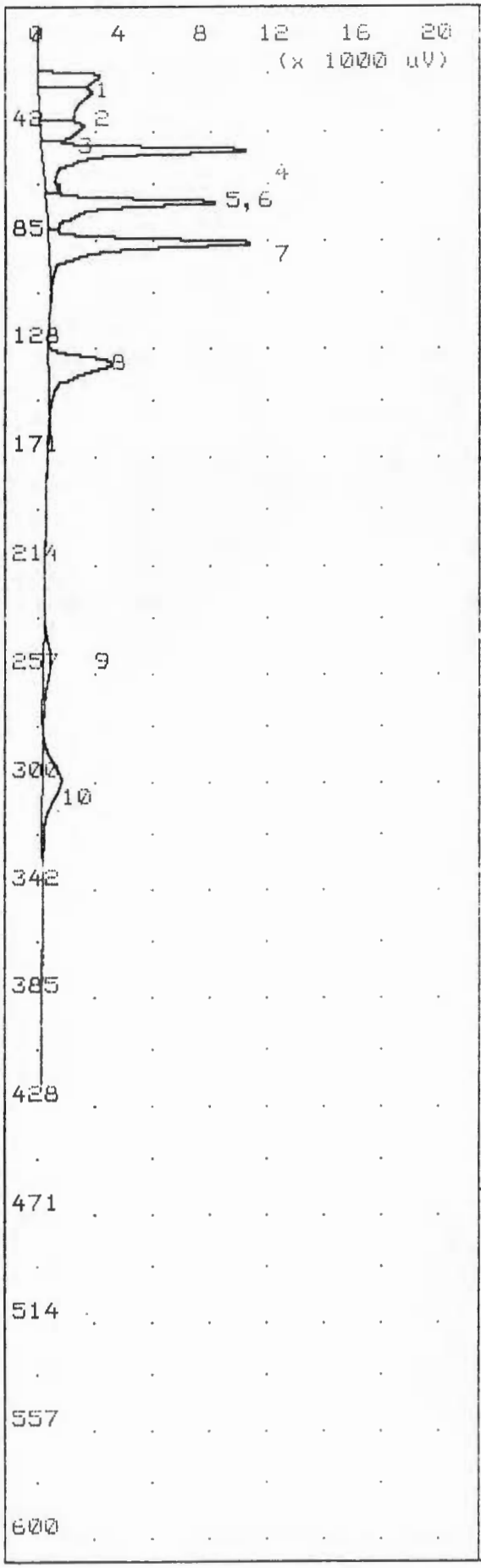
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank : Yes
Bulb Blank :

Analysis #4 105+ GC Function Analysis Report



Printed : Oct 8,97 09:19
Run at : Oct 8,97 09:11

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	29	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.
1	Unknown		18.50	mVs	19.4
2	Unknown		25.55	mVs	25.4
3	Unknown		14.49	mVs	37.5
4	Unknown	cis 1,2 DCE	49.68	mVs	47.3
5	Unknown		0.471	mVs	61.6
6	Unknown	Benzene	39.81	mVs	67.8
7	Unknown	TCE	54.65	mVs	83.8
8	Unknown	Toluene	29.08	mVs	132.1
9	Unknown		6.749	mVs	247.4
10	Unknown	p-xylene	16.21	mVs	296.0

Notes

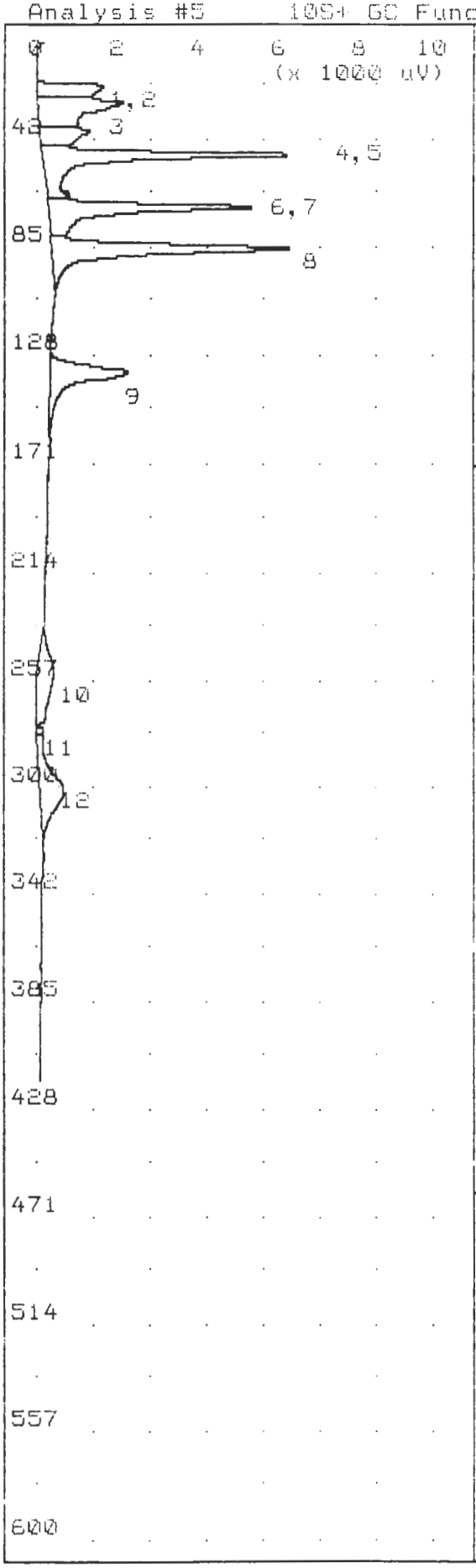
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #5 1054 GC Function Analysis Report



Printed : Oct 8,97 09:28
Run at : Oct 8,97 09:21

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.064	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	29	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.
1	Unknown		0.138	mVs	16.0
2	Unknown		9.745	mVs	18.5
3	Unknown		16.52	mVs	25.0
4	Unknown		7.810	mVs	37.0
5	Unknown	cis 1,2 DCE	28.61	mVs	46.3
6	Unknown		0.315	mVs	61.7
7	Unknown	Benzene	23.48	mVs	66.9
8	Unknown	TCE	29.64	mVs	83.3
9	Unknown	Toluene	14.70	mVs	132.4
10	Unknown		12.47	mVs	253.0
11	Unknown		1.236	mVs	273.8
12	Unknown	p-xylene	18.22	mVs	299.2

Concentration higher than 100 ppb Std!
Other Compounds OK

Notes

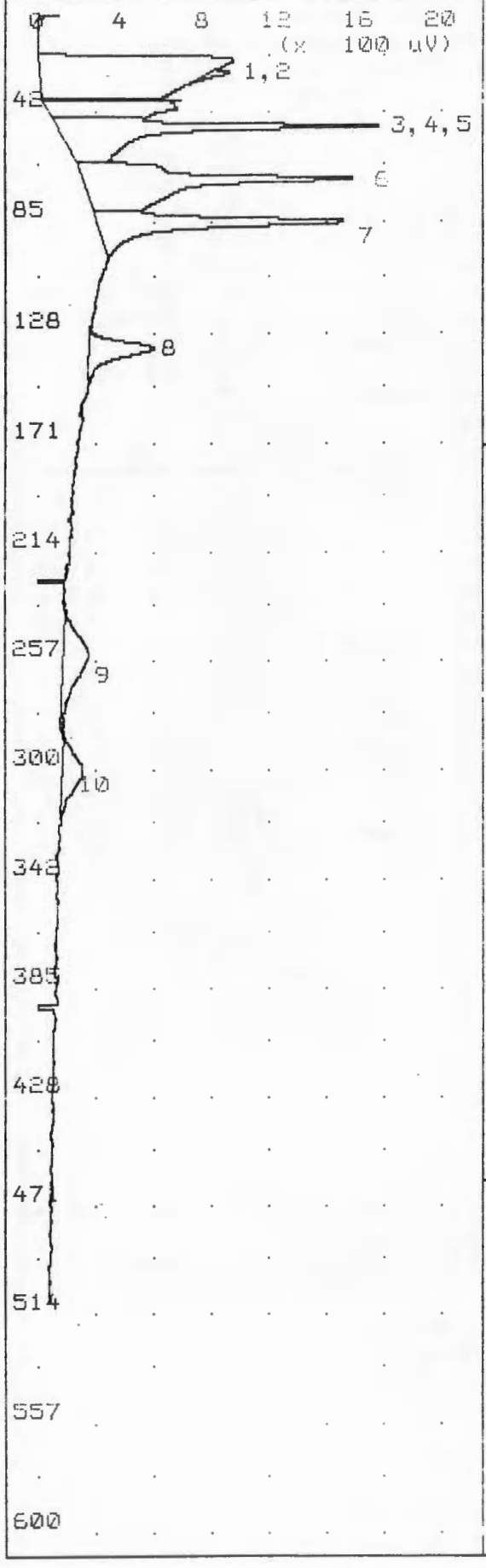
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 50 ppb
Inj. Vol. : 0.25 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #6 10S+ GC Function Analysis Report



Printed : Oct 8,97 09:39
Run at : Oct 8,97 09:30

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	30 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		15.40 mVs	20.4
2	Unknown		0.156 mVs	24.4
3	Unknown		0.507 mVs	36.4
4	Unknown		3.598 mVs	38.4
5	Unknown	cis 1,2 DCE	8.362 mVs	45.8
6	Unknown	Benzene	9.843 mVs	66.5
7	Unknown	TCE	6.363 mVs	82.6
8	Unknown	Toluene	2.238 mVs	131.4
9	Unknown		2.563 mVs	252.0
10	Unknown	p xylene	1.610 mVs	296.0

Notes

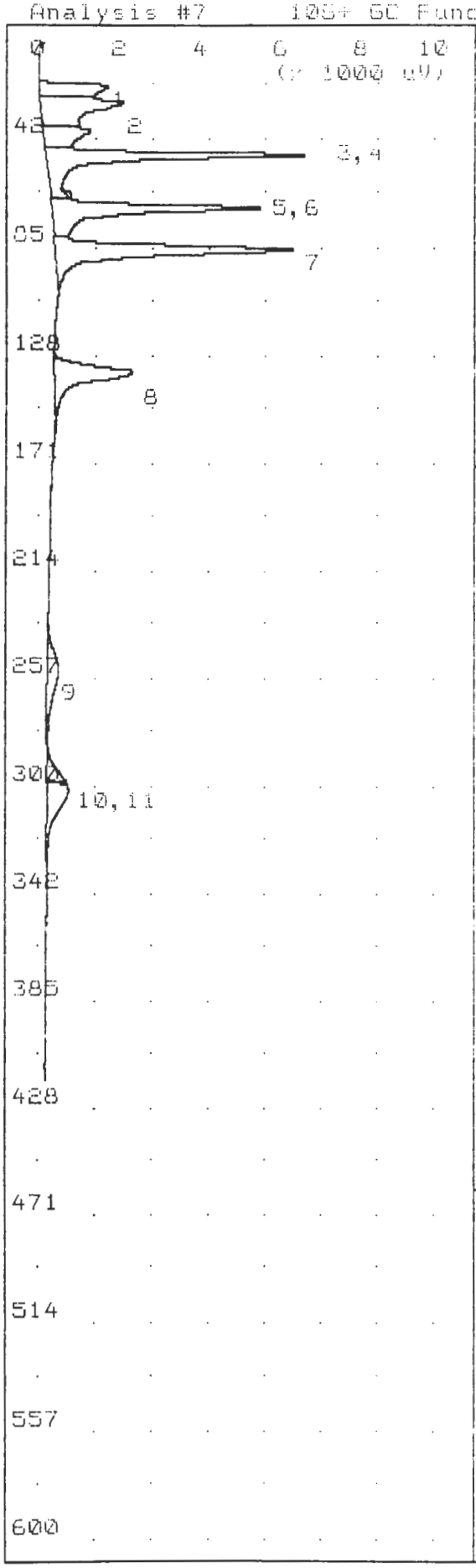
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 10 ppb
Inj. Vol. : 0.05 ml

Syringe # : S

Syringe Blank :
Bulb Blank :

Analysis #7 1054 GC Function Analysis Report



Printed : Oct 8,97 09:47
Run at : Oct 8,97 09:40

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	30 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		10.39 mVs	18.7
2	Unknown		16.14 mVs	25.2
3	Unknown		7.612 mVs	37.4
4	Unknown	cis 1,2 DCE	27.24 mVs	46.5
5	Unknown		0.366 mVs	62.4
6	Unknown	Benzene	23.37 mVs	67.2
7	Unknown	TCE	29.37 mVs	83.4
8	Unknown	Toluene	14.92 mVs	132.5
9	Unknown		5.309 mVs	251.7
10	Unknown		2.737 mVs	295.4
11	Unknown	p-xylene	6.553 mVs	298.9

Notes

Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 50 ppt
Inj. Vol. : 0.25 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

SOIL GAS 2-POINT CALIBRATION

Parsons Engineering-Science	CLIENT: ACOE	DATE: 10/8/97
PROJECT: Seneca Army Depot Soil Gas Survey LOCATION: SEAD 12		GC Operator:

Instrument Specs:		BTEX Calibration Gas Specifications	
Type of GC:	Photovac 10 S Plus	Manfacturer:	Lot#:
Column Type:	CPS.1-5 Isothermal	Concentration (ppmV):	
Col. Temp. (°C):	35°C	Concentration: (ppmV)	cis 1,2-DCE
Chart Speed:	Auto		Benzene
Gain:	Auto		TCE
Sensitivity:	Auto		Toluene
Gas Flow Rate:	13.5		P-Xylene
Tank Pressure:			

Analysis A
Inj. #: 4

A 0.5 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF			
cis 1,2-DCE	47.3	0.1	0.04968	2.01			
Benzene	67.8		0.03981	2.51			
TCE	83.8		0.05465	1.83			
Toluene	132.1		0.02908	3.44			
P-Xylene	296.0		0.01621	6.17			

Comments:
Concentration is normalized to 0.5 ml.

Analysis B
Inj. #: 7

A 0.25 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF	Delta RF	RF avg.	
cis 1,2-DCE	46.5	0.05	0.02724	1.84			
Benzene	67.2		0.02337	2.14			
TCE	83.4		0.02937	1.71			
Toluene	132.5		0.01492	3.35			
P-Xylene	298.9		0.006553	7.63			

Comments:
Concentration is normalized to 0.5 ml.
Delta RF = (A-B)/(A+B)/2

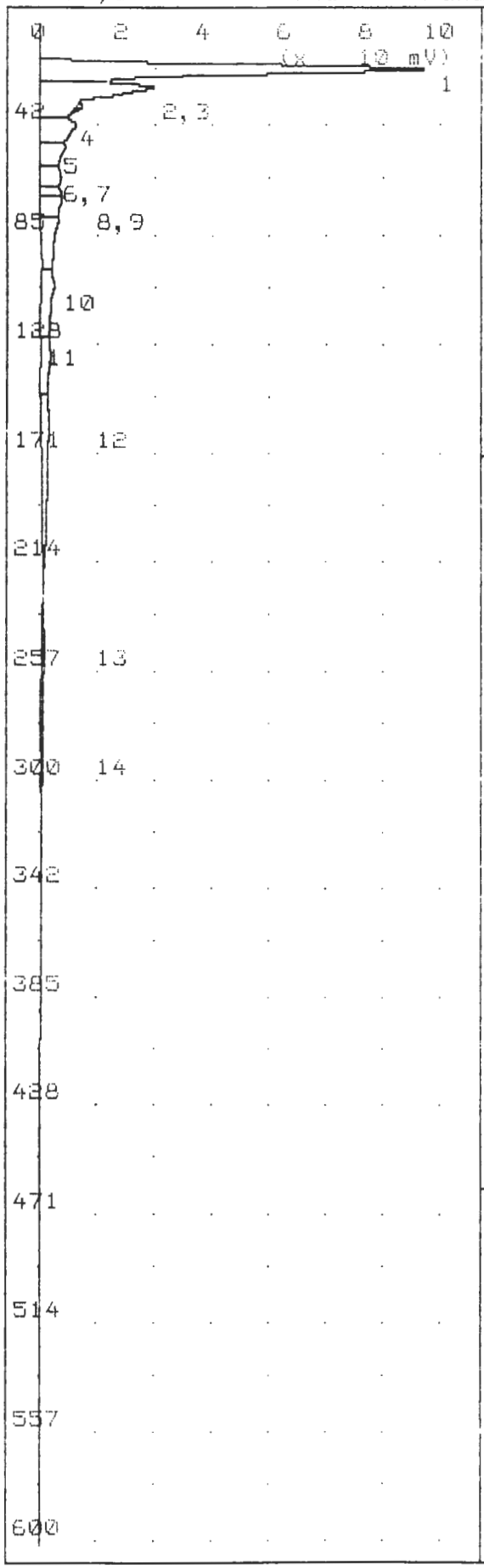
Analysis C (if RF relatative % difference is greater than 50%)
Inj. #: 6

A 0.05 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF	Delta RF	RF avg.	
cis 1,2-DCE	45.8	0.01	0.008362	1.19			
Benzene	66.5		0.009843	1.02			
TCE	82.6		0.006363	1.57			
Toluene	131.4		0.002238	4.47			
P-Xylene	296.0		0.001610	6.21			

Comments:
Concentration is normalized to 0.5 ml.

Analysis #8 1054 GC Function Analysis Report



Printed : Oct 8,97 09:59
Run at : Oct 8,97 09:49

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		445.2 mVs	18.1	
2	Unknown		215.9 mVs	25.3	
3	Unknown		3.679 mVs	33.0	
4	Unknown		77.35 mVs	40.4	
5	Unknown		50.83 mVs	49.1	
6	Unknown		41.17 mVs	61.3	
7	Unknown	Benzene	19.81 mVs	67.0	43 ppb
8	Unknown		36.12 mVs	70.4	
9	Unknown		73.90 mVs	77.4	
10	Unknown		68.93 mVs	103.2	
11	Unknown	Toluene	42.84 mVs	130.4	147 ppb
12	Unknown		103.1 mVs	159.6	
13	Unknown		20.84 mVs	246.6	
14	Unknown	p-xylene	1.540 mVs	289.8	10 ppb

1205 × 3.44 = 4145

4 ppm

Notes

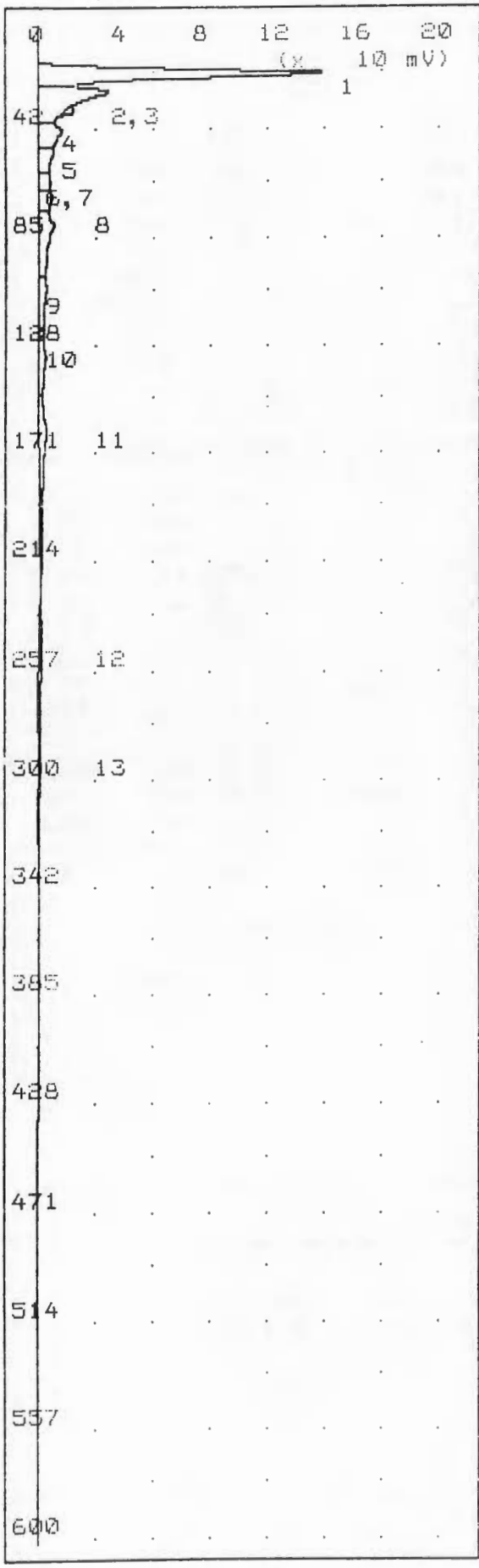
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-142
OVM Reading : 0.1 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank :
Bulb Blank :

Analysis #9 10S+ GC Function Analysis Report



Printed : Oct 8,97 10:10
Run at : Oct 8,97 10:00

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		591.2 mVs	18.4	
2	Unknown		280.0 mVs	25.4	
3	Unknown		8.590 mVs	32.4	
4	Unknown		99.07 mVs	40.7	
5	Unknown		67.60 mVs	49.0	
6	Unknown		37.01 mVs	61.0	
7	Unknown	Benzene	48.74 mVs	67.0	123 ppb
8	Unknown		131.9 mVs	78.1	
9	Unknown		71.95 mVs	103.0	
10	Unknown	Toluene	61.58 mVs	131.0	212 ppb
11	Unknown		170.2 mVs	160.2	
12	Unknown		56.95 mVs	244.5	
13	Unknown	p-xylene	22.08 mVs	291.4	136 ppb

Possible needle blockage
Plunger was loose
Concentration are probably much higher
Redo if possible

1653 x 3.44 = 5686
5.5 ppm

Notes

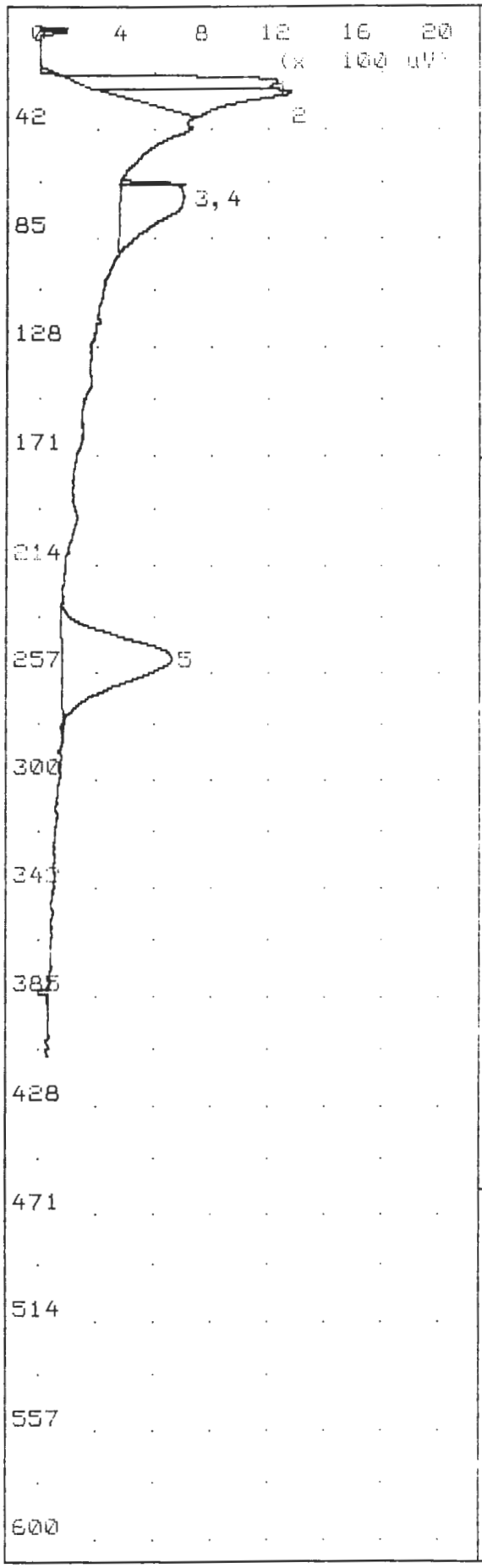
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-150
OVM Reading : 0.5 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank :
Bulb Blank :

Analysis #10 105+ GC Function Analysis Report



Printed : Oct 8,97 10:21
Run at : Oct 8,97 10:15

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	5.339 mVs	21.0
2	Unknown	5.213 mVs	26.0
3	Unknown	0.410 mVs	62.1
4	Unknown	5.203 mVs	67.2
5	Unknown	11.61 mVs	248.5

Re-Blank

Notes

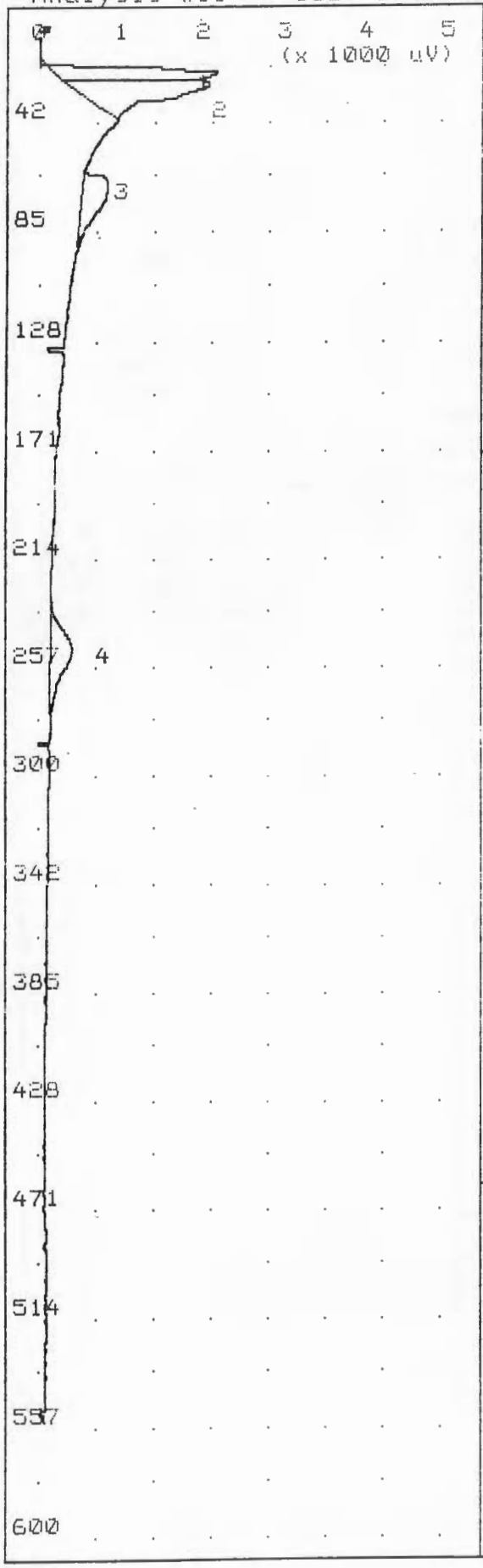
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank : Yes
Bulb Blank :

Analysis #11 10S+ GC Function Analysis Report



Printed : Oct 8,97 10:32
Run at : Oct 8,97 10:23

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	11.39 mVs	19.6
2	Unknown	12.57 mVs	25.0
3	Unknown	5.254 mVs	64.0
4	Unknown	5.161 mVs	247.4

Notes

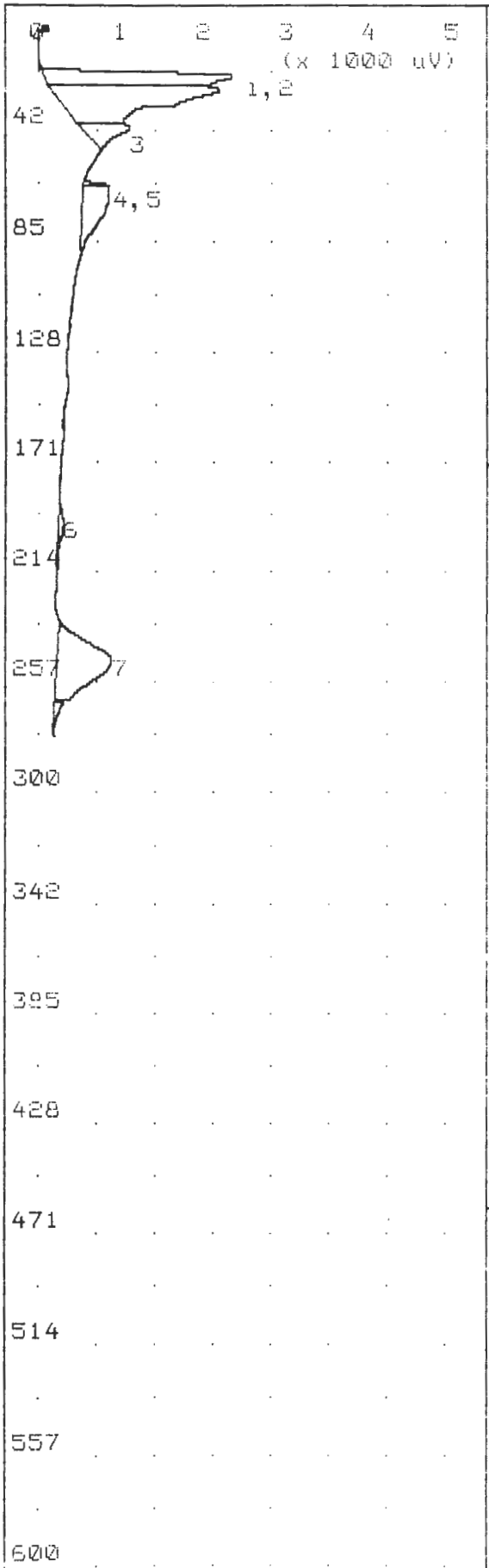
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank : Yes
Bulb Blank :

Analysis #12 10S+ GC Function Analysis Report



Printed : Oct 8,97 10:38
Run at : Oct 8,97 10:34

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	13.03 mVs	19.3
2	Unknown	17.92 mVs	24.8
3	Unknown	3.304 mVs	39.4
4	Unknown	0.501 mVs	62.3
5	Unknown	4.604 mVs	63.3
6	Unknown	0.603 mVs	195.6
7	Unknown	12.65 mVs	246.6

Notes

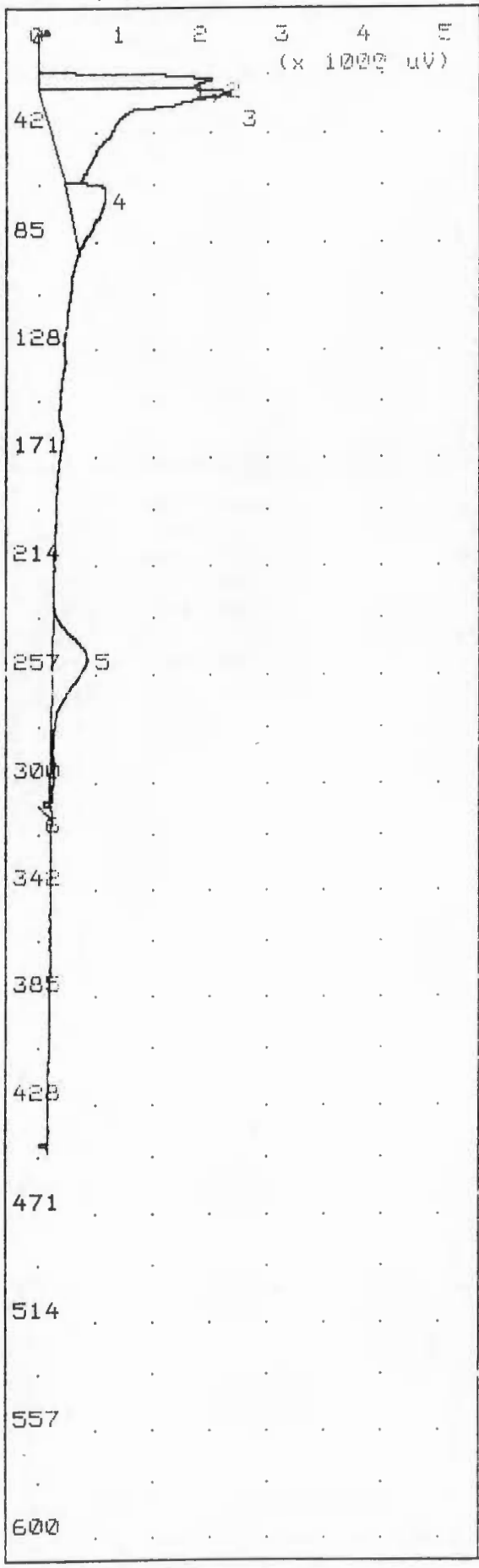
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank : Yes
Bulb Blank :

Analysis #13 105+ GC Function Analysis Report



Printed : Oct 8,97 10:47
Run at : Oct 8,97 10:40

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.326 mVs	16.2
2	Unknown	12.24 mVs	19.3
3	Unknown	33.67 mVs	25.3
4	Unknown	8.187 mVs	62.3
5	Unknown	10.24 mVs	248.8
6	Unknown	3.971 Vs	312.8

Notes

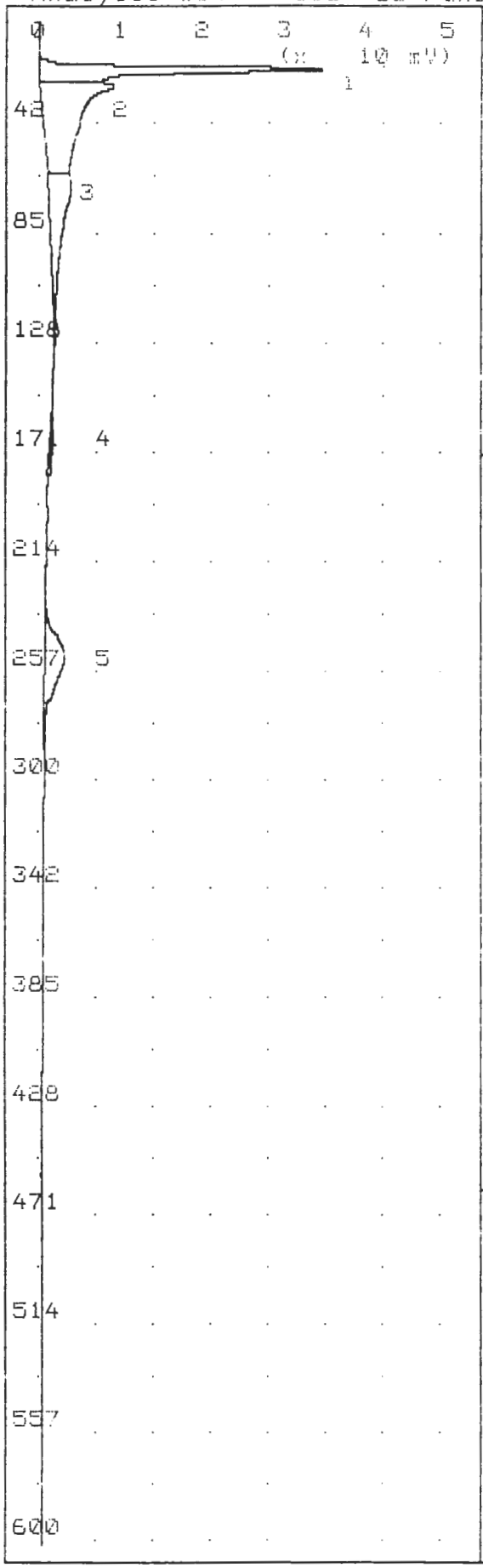
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank : Yes
Bulb Blank :

Analysis #14 105+ GC Function Analysis Report



Printed : Oct 8,97 11:04
Run at : Oct 8,97 10:54

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	133.2 mVs	19.0
2	Unknown	173.1 mVs	25.8
3	Unknown	85.03 mVs	61.6
4	Unknown	6.016 mVs	161.8
5	Unknown	51.12 mVs	249.0

Notes

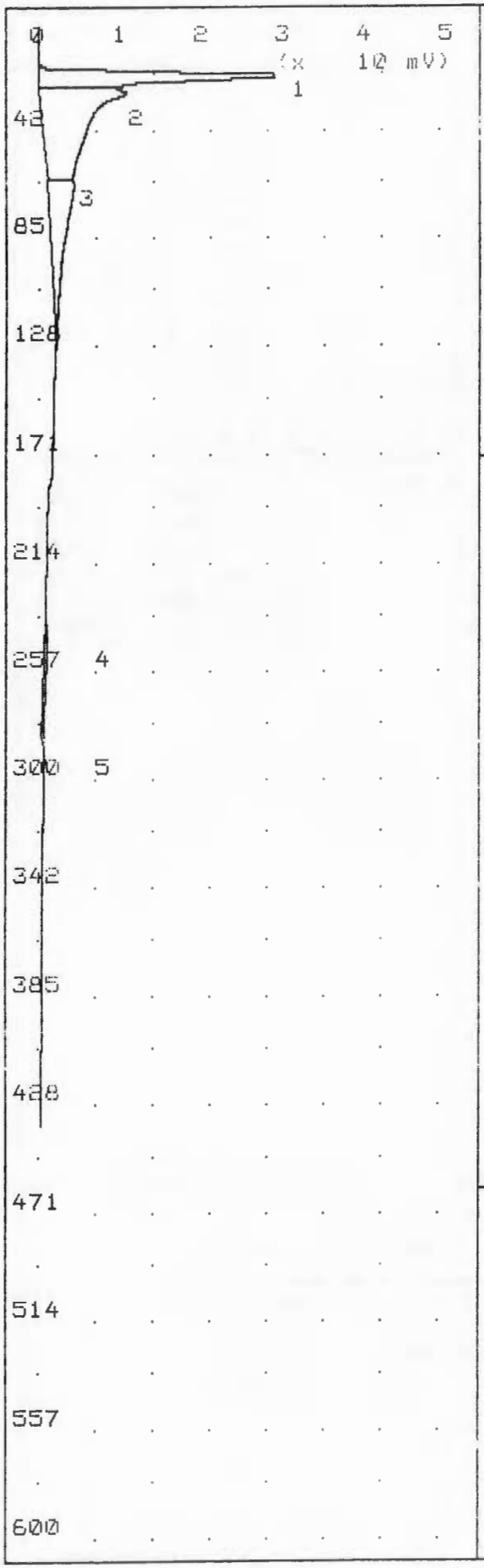
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : Rod Blank
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank :
Bulb Blank :

Analysis #15 105+ GC Function Analysis Report



Printed : Oct 8,97 11:13
Run at : Oct 8,97 11:05

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	144.1 mVs	18.7
2	Unknown	206.1 mVs	25.4
3	Unknown	95.90 mVs	61.5
4	Unknown	10.28 mVs	245.8
5	Unknown	1.131 mVs	284.0

Notes

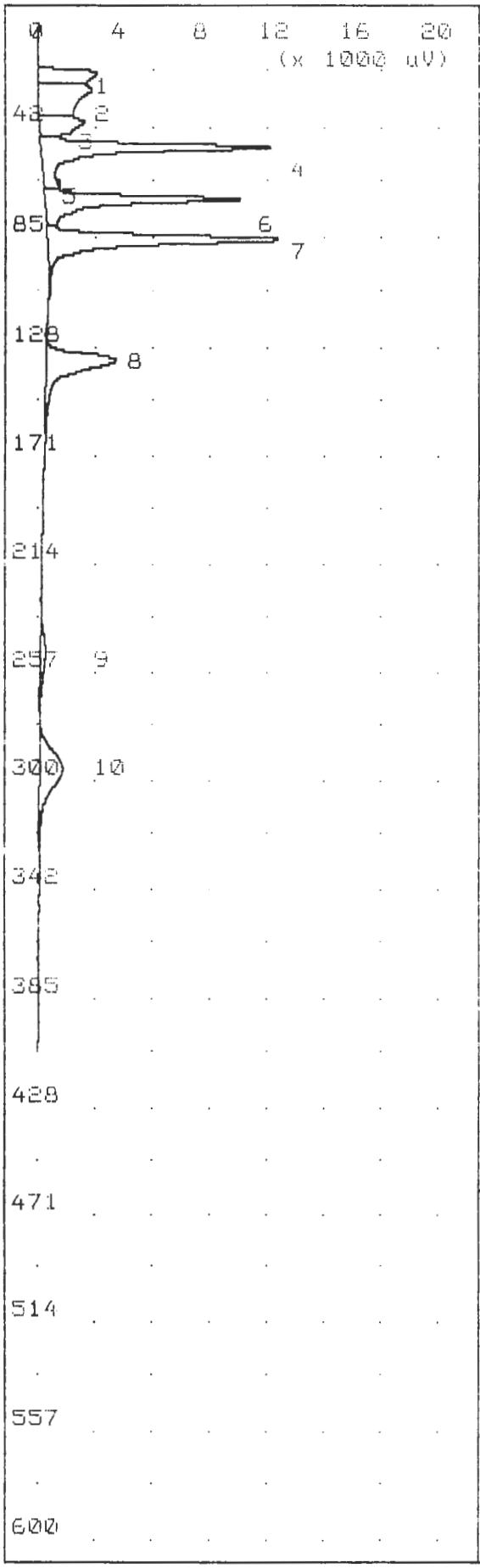
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : Ambient Air
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank :
Bulb Blank :

Analysis #16 1054 GC Function Analysis Report



Printed : Oct 8,97 11:21
Run at : Oct 8,97 11:14

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	18.52 mVs	19.6
2	Unknown	26.64 mVs	25.6
3	Unknown	14.96 mVs	38.0
4	Unknown	53.38 mVs	47.6
5	Unknown	0.536 mVs	62.7
6	Unknown	41.64 mVs	69.0
7	Unknown	57.83 mVs	83.7
8	Unknown	29.56 mVs	131.2
9	Unknown	4.575 mVs	246.9
10	Unknown	19.87 mVs	293.0

Notes

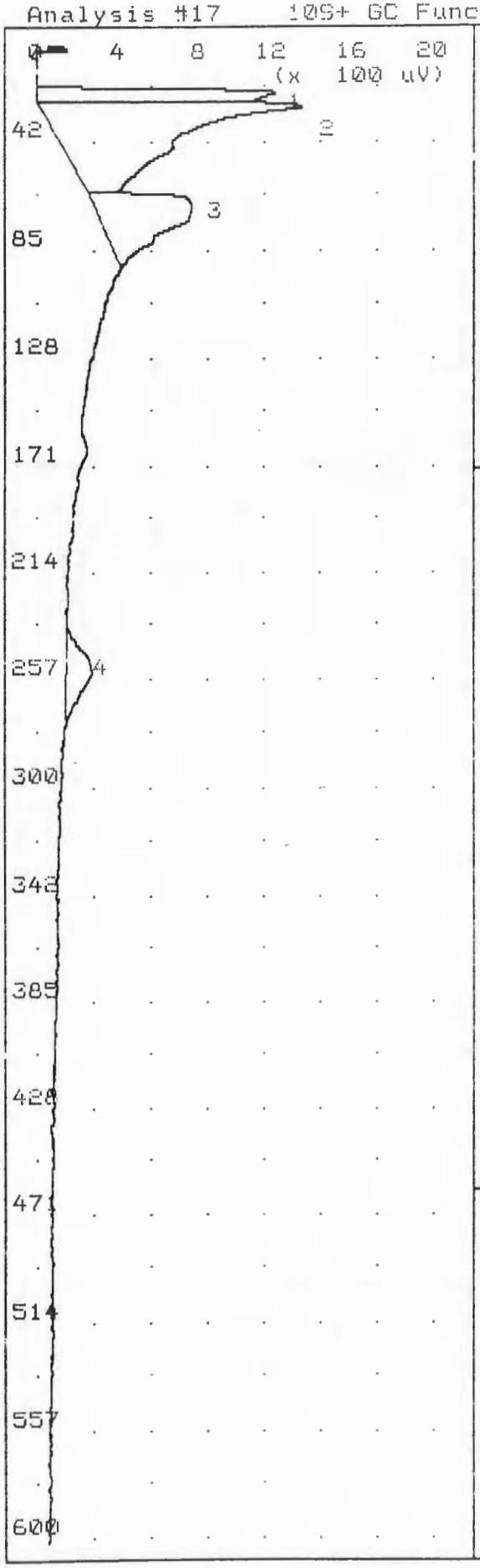
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #17 109+ GC Function Analysis Report



Printed : Oct 8,97 11:35
Run at : Oct 8,97 11:25

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	7.599 mVs	20.0
2	Unknown	22.73 mVs	26.0
3	Unknown	8.672 mVs	63.0
4	Unknown	2.561 mVs	249.3

Notes

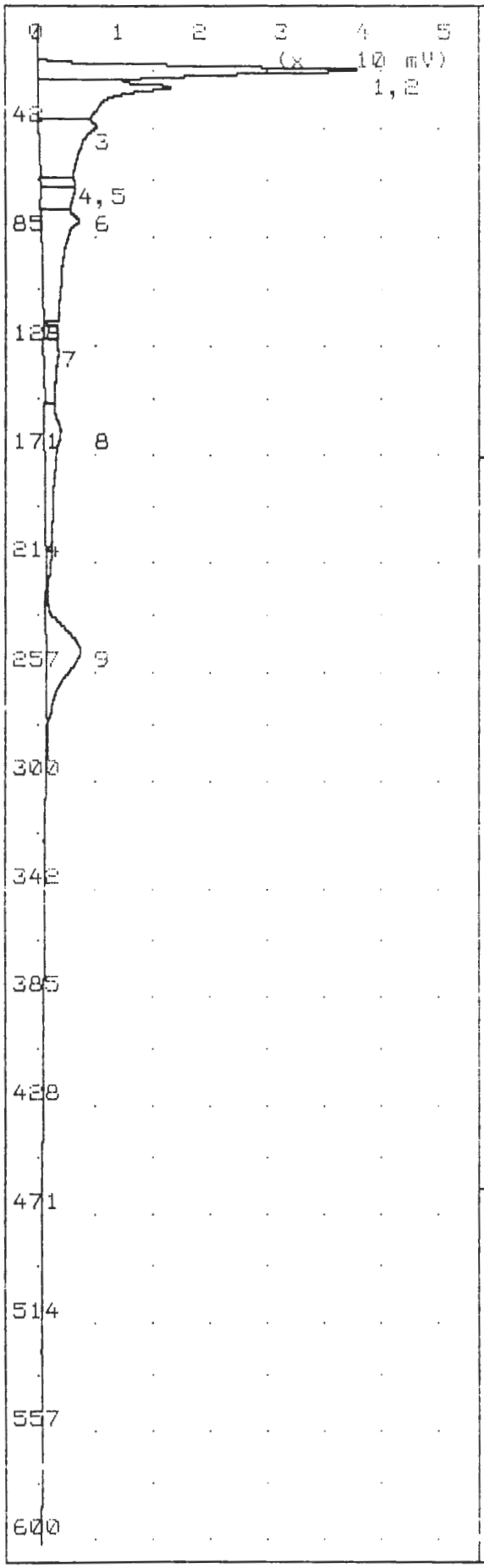
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank : Yes
Bulb Blank :

Analysis #18 105+ GC Function Analysis Report



Printed : Oct 8,97 12:09
Run at : Oct 8,97 11:58

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	174.2 mVs	17.6
2	Unknown	143.2 mVs	24.3
3	Unknown	126.0 mVs	39.2
4	Unknown	16.15 mVs	61.0
5	Unknown	37.65 mVs	65.0
6	Unknown	136.1 mVs	76.6
7	Unknown	41.42 mVs	129.0
8	Unknown	88.57 mVs	159.2
9	Unknown	99.11 mVs	246.4

No Target Compounds

869 x 3.44 = 2989

3 ppm

Sample taken under Asphalt

Notes

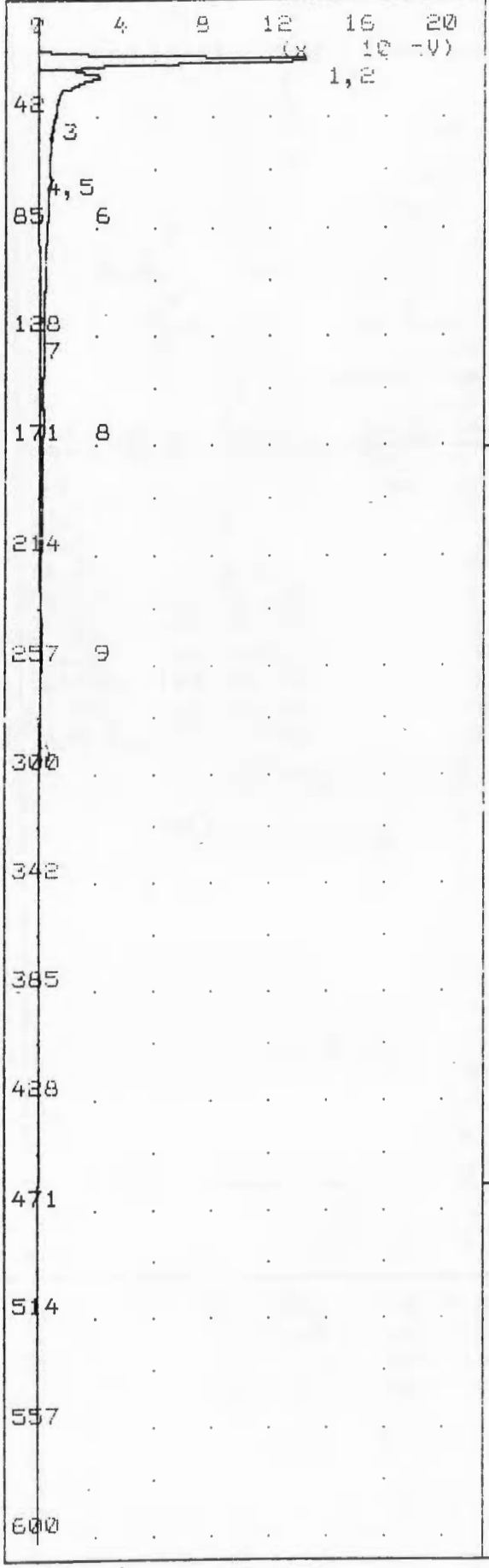
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-125
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank :
Bulb Blank :

Analysis #19 1094 GC Function Analysis Report



Printed : Oct 8,97 12:22
Run at : Oct 8,97 12:12

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	459.7 mVs	17.7
2	Unknown	855.9 mVs	24.2
3	Unknown	0.749 mVs	39.2
4	Unknown	0.668 mVs	60.8
5	Unknown	4.610 mVs	65.0
6	Unknown	2.427 mVs	76.2
7	Unknown	1.088 mVs	128.4
8	Unknown	13.40 mVs	158.6
9	Unknown	23.69 mVs	245.3

1366 × 3.44 = 4699

5 ppm

Sample taken under Asphalt

Notes

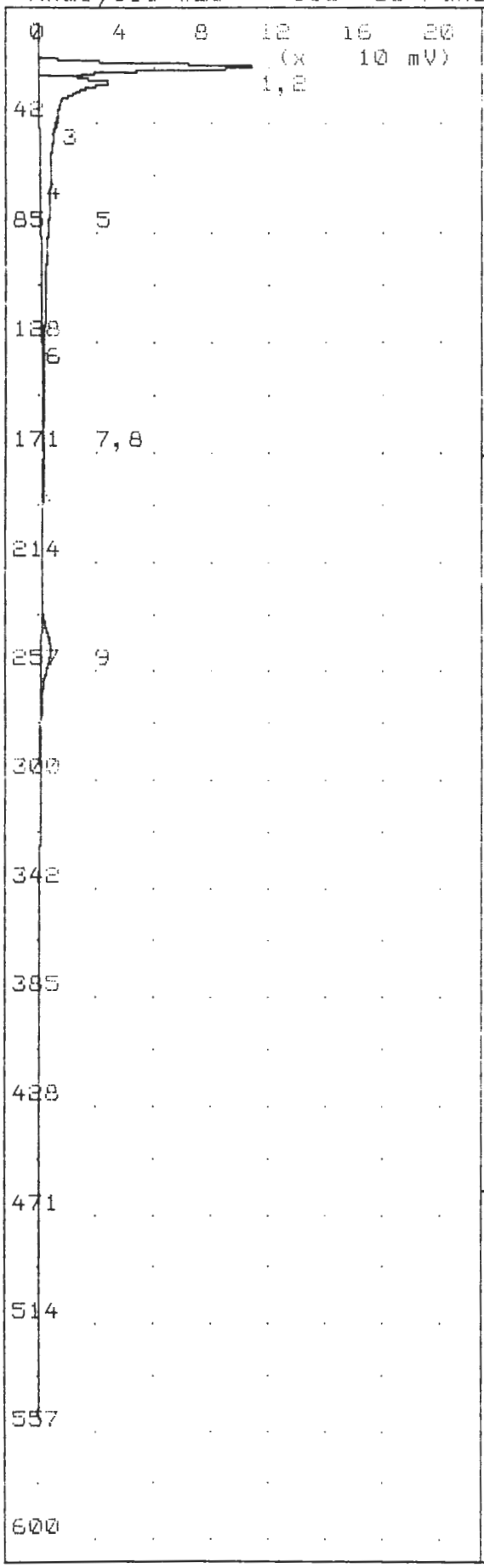
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-124
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 6

Syringe Blank :
Bulb Blank :

Analysis #20 105+ GC Function Analysis Report



Printed : Oct 8,97 12:46
Run at : Oct 8,97 12:37

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	382.6 mVs	17.7
2	Unknown	699.2 mVs	23.9
3	Unknown	2.111 mVs	38.5
4	Unknown	2.426 mVs	60.9
5	Unknown	0.813 mVs	75.6
6	Unknown	0.466 mVs	128.0
7	Unknown	0.225 mVs	157.8
8	Unknown	0.103 mVs	161.8
9	Unknown	86.34 mVs	246.1

1178 × 3.44 = 4052
4 ppm

Sample taken under Asphalt

Notes

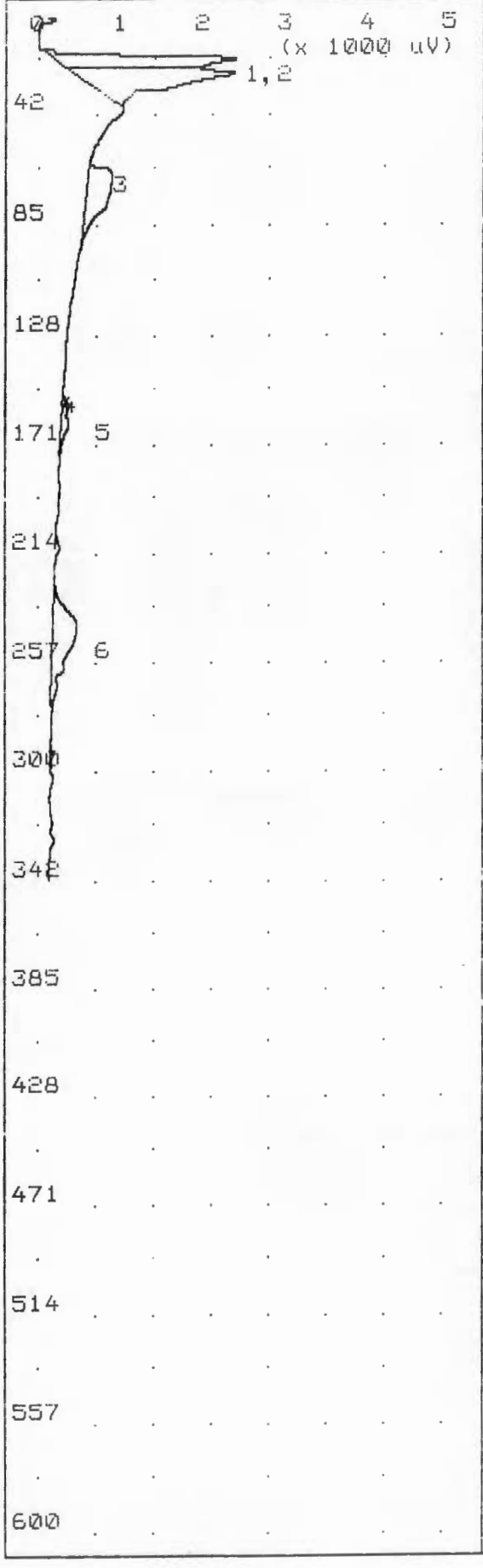
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-128
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank :
Bulb Blank :

Analysis #22 10S+ GC Function Analysis Report



Printed : Oct 8,97 13:03
Run at : Oct 8,97 12:57

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	11.83 mVs	17.9
2	Unknown	13.44 mVs	24.0
3	Unknown	5.507 mVs	64.0
4	Unknown	0.161 mVs	153.2
5	Unknown	0.881 mVs	160.6
6	Unknown	6.770 mVs	239.8

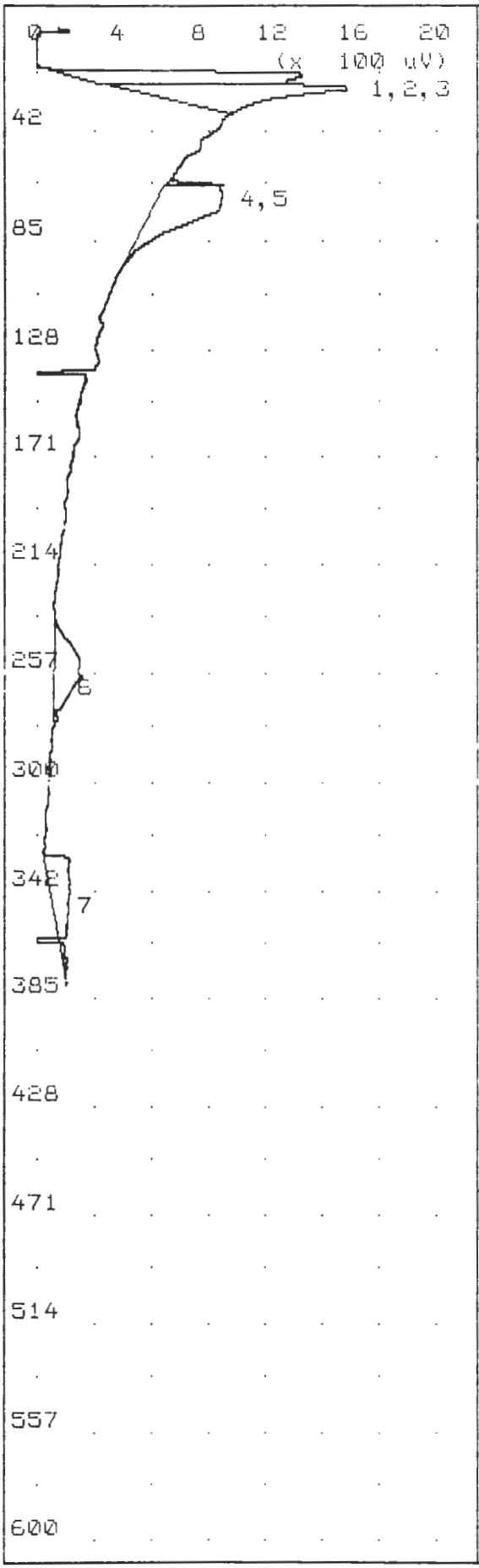
Notes

Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank : Yes
Bulb Blank :



Printed : Oct 8,97 13:06
Run at : Oct 8,97 12:49

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.080	mVs	13.7
2	Unknown	5.753	mVs	18.7
3	Unknown	6.416	mVs	23.7
4	Unknown	0.298	mVs	61.8
5	Unknown	5.431	mVs	63.8
6	Unknown	2.718	mVs	255.2
7	Unknown	3.033	mVs	340.3

Notes

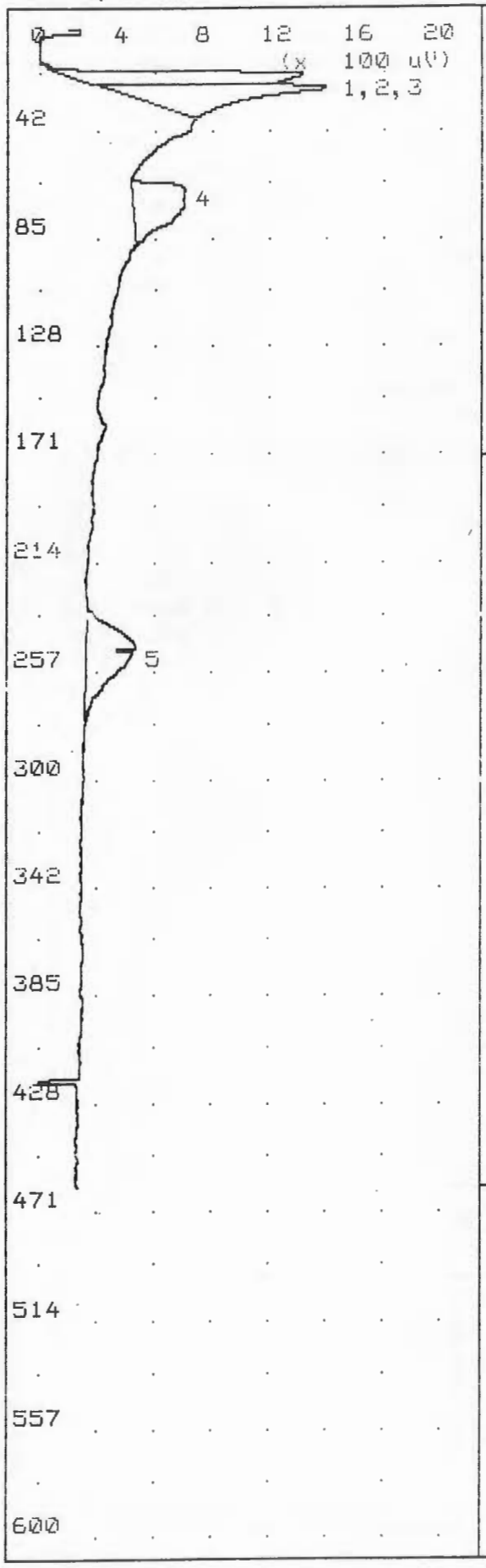
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank : Yes
Bulb Blank :

Analysis #23 10S+ GC Function Analysis Report



Printed : Oct 8,97 13:16
Run at : Oct 8,97 13:08

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.139 mVs	14.8
2	Unknown	5.807 mVs	18.4
3	Unknown	6.740 mVs	23.8
4	Unknown	4.632 mVs	63.8
5	Unknown	4.898 mVs	245.3

Notes

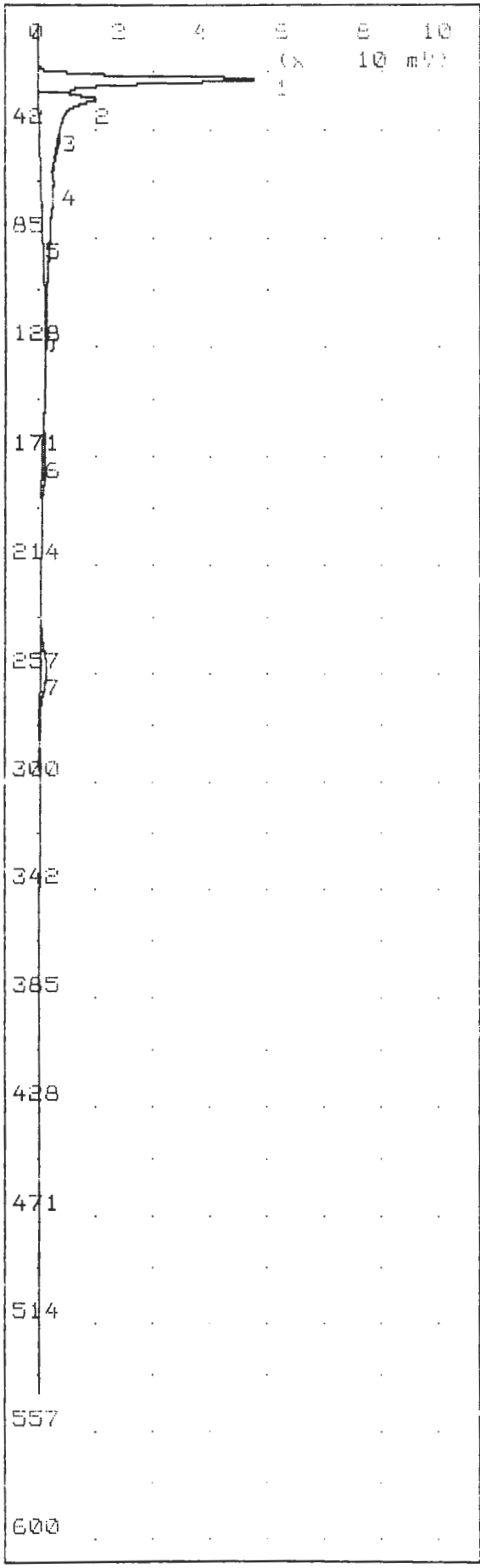
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank : Yes
Bulb Blank :

Analysis #24 105+ GC Function Analysis Report



Printed : Oct 8,97 13:26
Run at : Oct 8,97 13:17

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		207.0 mVs	21.0
2	Unknown		299.0 mVs	28.6
3	Unknown		1.227 mVs	44.6
4	Unknown		5.400 mVs	61.2
5	Unknown	TCE	0.693 mVs	82.8
6	Unknown		8.386 mVs	165.0
7	Unknown		26.96 mVs	251.2

1 ppb

552 × 3.44 = 1899

2 ppm

Sampled under Asphalt

Notes

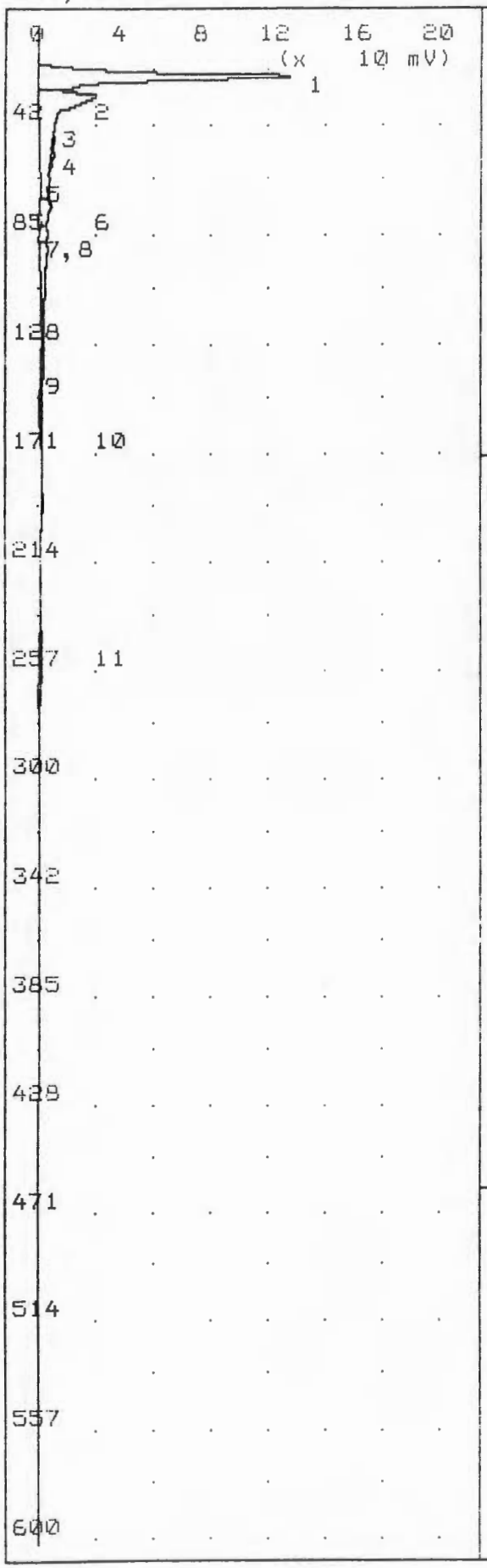
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-129
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank :
Bulb Blank :

Analysis #25 10S+ GC Function Analysis Report 97oc08bb.gc



Printed : Oct 8,97 13:42
Run at : Oct 8,97 13:27

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		526.7 mVs	20.6	
2	Unknown		411.1 mVs	28.3	
3	Unknown	DCE	2.811 mVs	45.9	4 ppb
4	Unknown		7.480 mVs	51.6	
5	Unknown		2.044 mVs	61.1	
6	Unknown		50.31 mVs	71.7	
7	Unknown	TCE	22.73 mVs	82.4	39 ppb
8	Unknown		91.02 mVs	88.9	
9	Unknown	Toluene	27.14 mVs	133.7	94 ppb
10	Unknown		9.707 mVs	163.0	
11	Unknown		24.23 mVs	248.0	

1155 x 3.44 = 3973

4 ppm

Notes

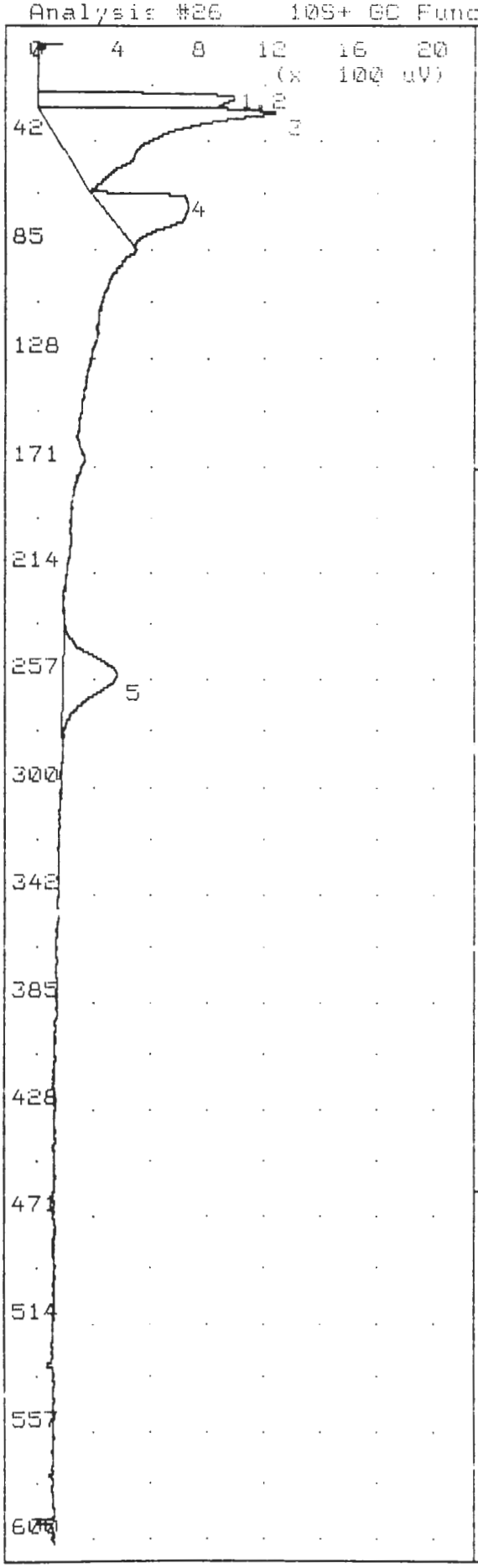
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-144
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank :
Bulb Blank :

Analysis #26 10S+ GC Function Analysis Report



Printed : Oct 8,97 13:58
Run at : Oct 8,97 13:48

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.225	mVs	18.2
2	Unknown	7.397	mVs	23.0
3	Unknown	18.56	mVs	29.2
4	Unknown	6.133	mVs	62.2
5	Unknown	4.887	mVs	251.7

Notes

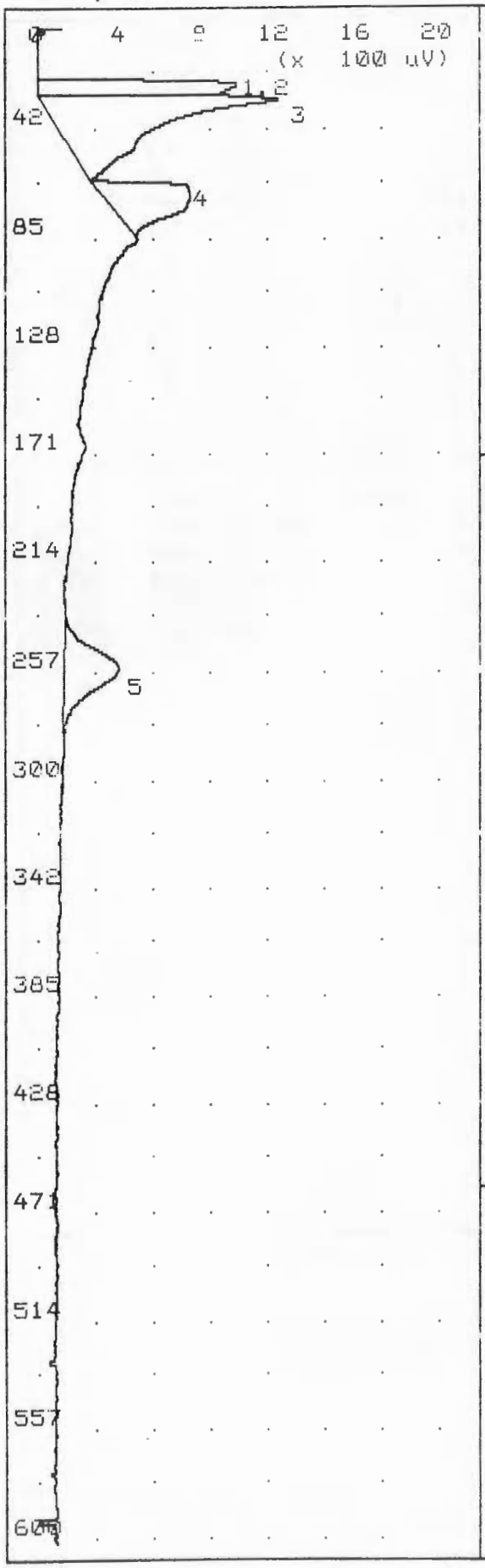
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-144
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank :
Bulb Blank :

Analysis #26 129+ GC Function Analysis Report 97oc08bc.gc



Printed : Oct 8,97 14:00
Run at : Oct 8,97 13:48

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.225 mVs	18.2
2	Unknown	7.397 mVs	23.0
3	Unknown	18.56 mVs	29.2
4	Unknown	6.133 mVs	62.2
5	Unknown	4.887 mVs	251.7

Notes

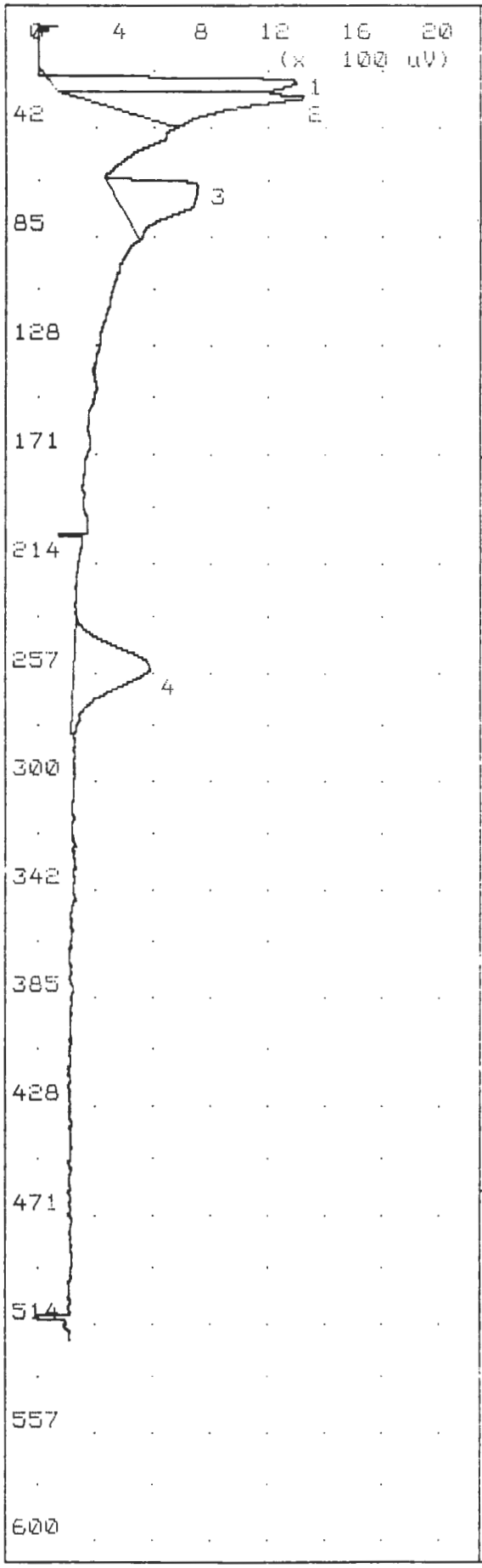
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank : Yes
Bulb Blank :

Analysis #27 10S+ GC Function Analysis Report



Printed : Oct 8,97 14:10
Run at : Oct 8,97 14:02

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	8.287 mVs	22.8
2	Unknown	7.928 mVs	27.8
3	Unknown	6.342 mVs	62.9
4	Unknown	7.175 mVs	253.3

Notes

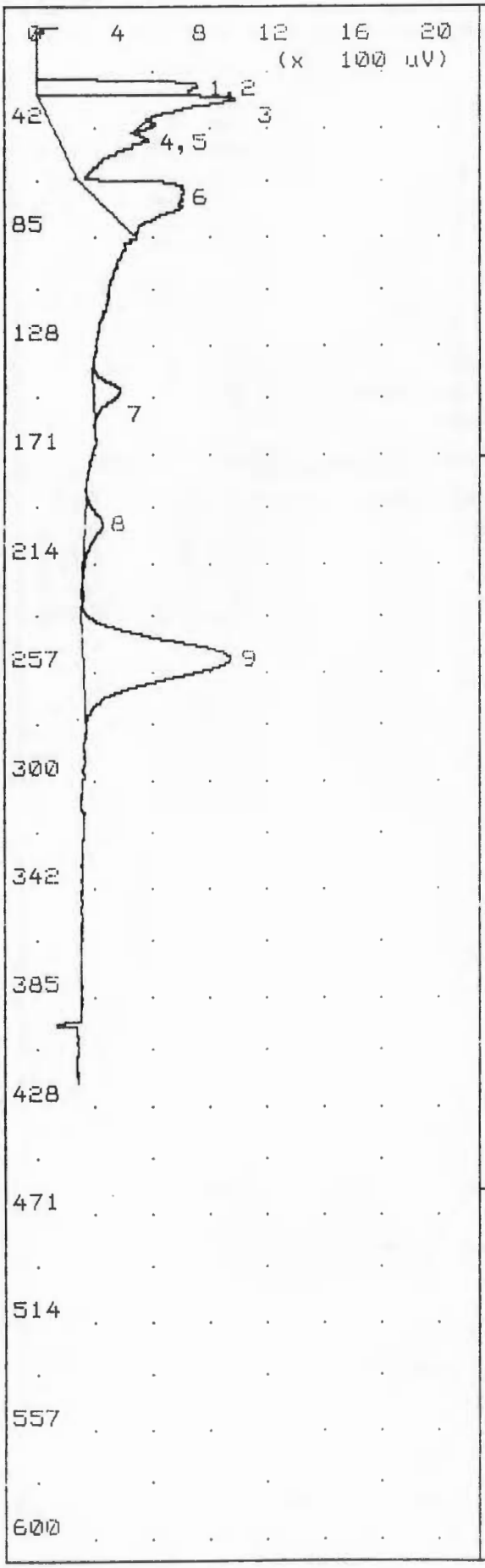
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank : Yes
Bulb Blank :

Analysis #28 10S+ GC Function Analysis Report



Printed : Oct 8,97 14:20
Run at : Oct 8,97 14:13

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.065	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.172	mVs	18.8
2	Unknown	5.934	mVs	23.6
3	Unknown	16.04	mVs	28.2
4	Unknown	0.161	mVs	38.5
5	Unknown	0.779	mVs	45.2
6	Unknown	6.461	mVs	63.0
7	Unknown	1.375	mVs	144.2
8	Unknown	1.067	mVs	196.2
9	Unknown	13.58	mVs	248.5

Notes

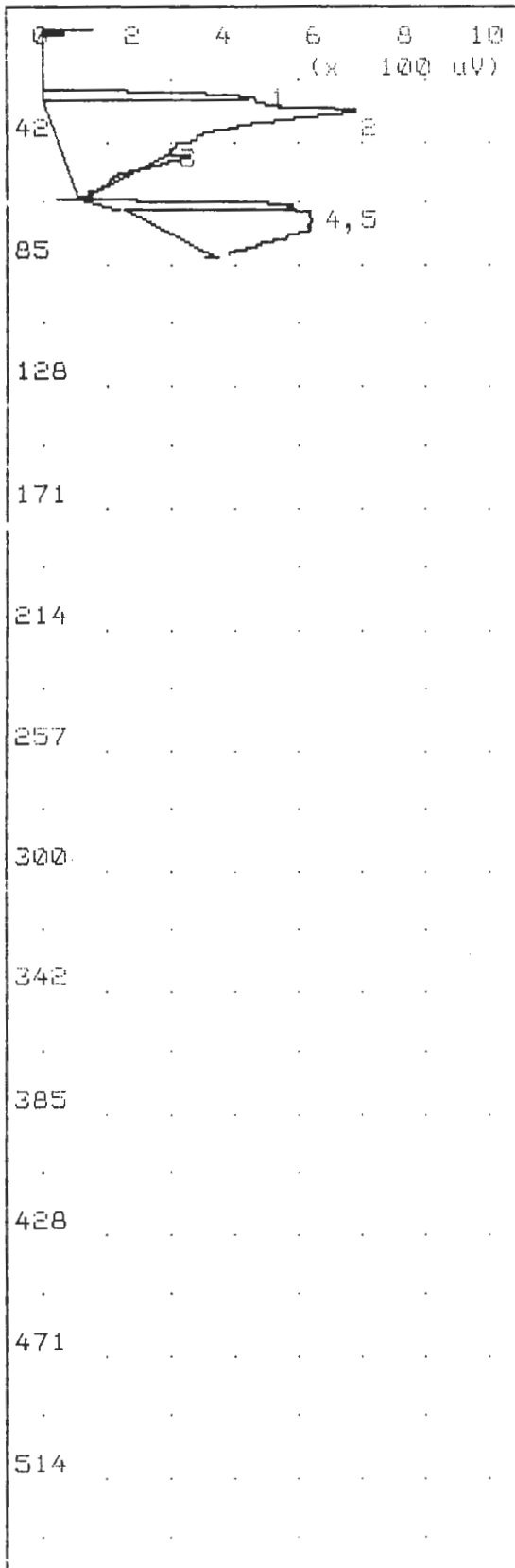
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank : Yes
Bulb Blank :

Analysis #29 1084 GC Function Analysis Report



Printed : Oct 8,97 14:26
Run at : Oct 8,97 14:24

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.056	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	2.666 mVs	24.5
2	Unknown	14.65 mVs	28.5
3	Unknown	0.055 mVs	44.7
4	Unknown	1.432 mVs	62.0
5	Unknown	4.104 mVs	64.6

Redo

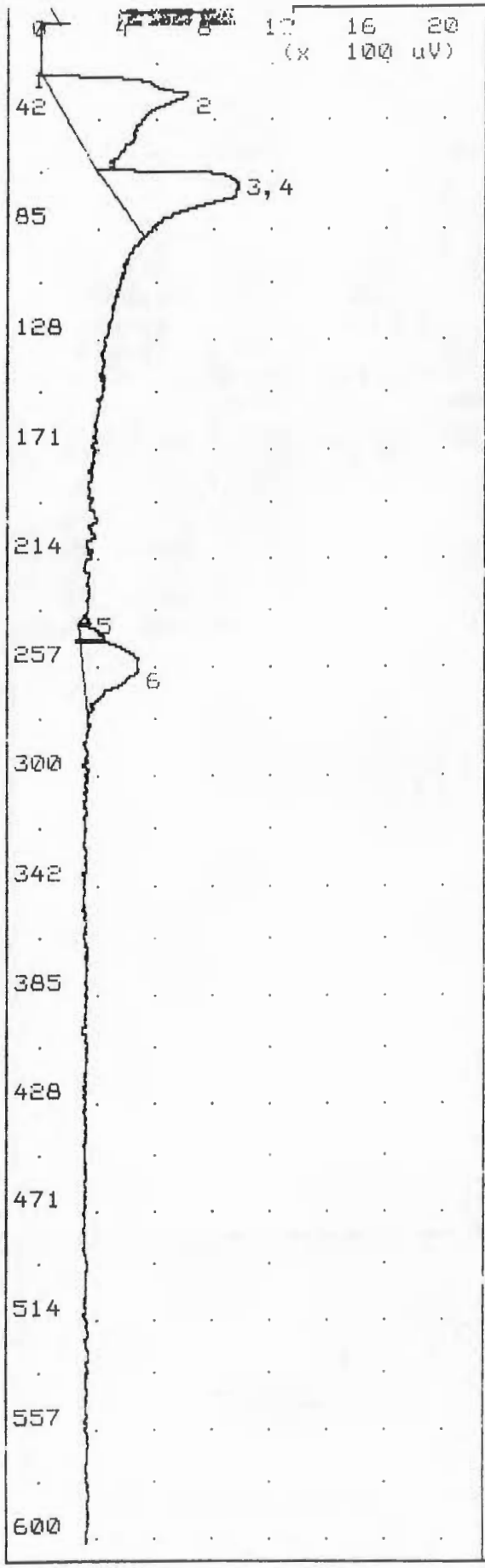
Notes

Seneca Army Depot
SEAD 59 -- Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

#30



Printed : Oct 8,97 15:03
Run at : Oct 8,97 14:33

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.026	mVs	19.8
2	Unknown	19.46	mVs	30.0
3	Unknown	0.014	mVs	59.5
4	Unknown	10.05	mVs	63.0
5	Unknown	0.072	mVs	236.4
6	Unknown	5.396	mVs	251.4

Notes

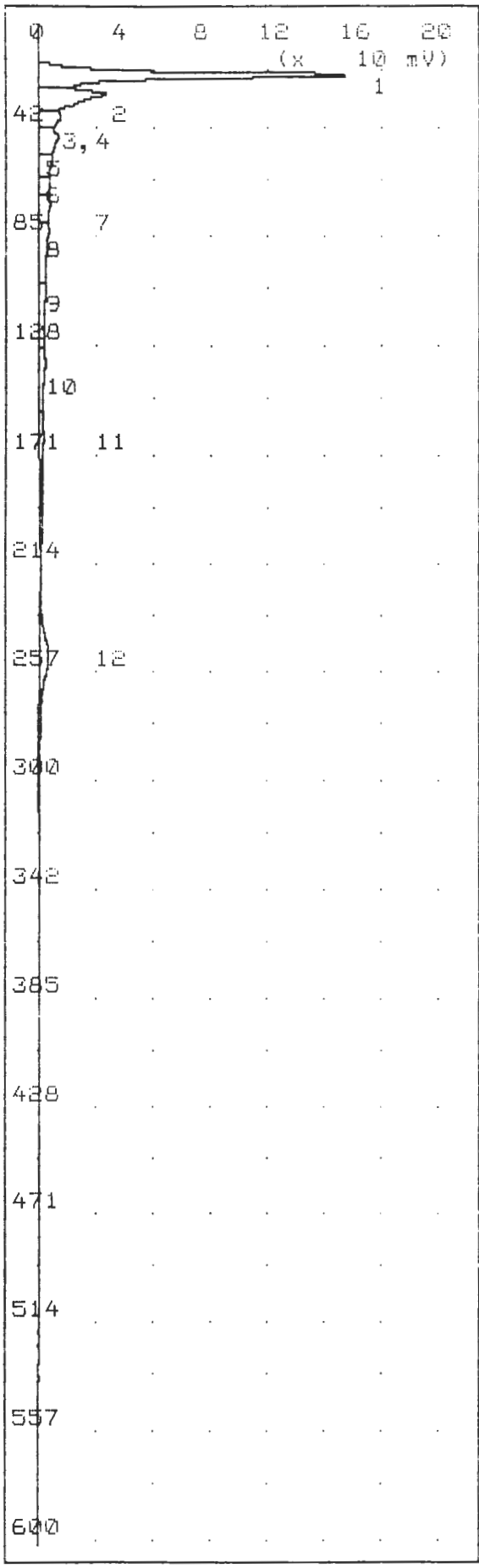
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank : Yes
Bulb Blank :

Analysis #31 102+ SG Function Analysis Report



Printed : Oct 8,97 15:15
Run at : Oct 8,97 15:05

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.081	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		566.1 mVs	20.0	
2	Unknown		201.9 mVs	27.2	
3	Unknown		67.02 mVs	36.2	
4	Unknown		87.98 mVs	44.1	
5	Unknown		54.09 mVs	53.5	
6	Unknown		43.53 mVs	63.0	
7	Unknown	Benzene	53.56 mVs	70.1	140 ppb
8	Unknown		96.56 mVs	81.0	
9	Unknown		67.48 mVs	104.6	217 ppb
10	Unknown	Toluene	56.28 mVs	133.4	
11	Unknown		108.0 mVs	161.8	
12	Unknown		118.0 mVs	248.2	

1525 x 3.44 = ~~5246~~ 5887

6 ppm

Notes

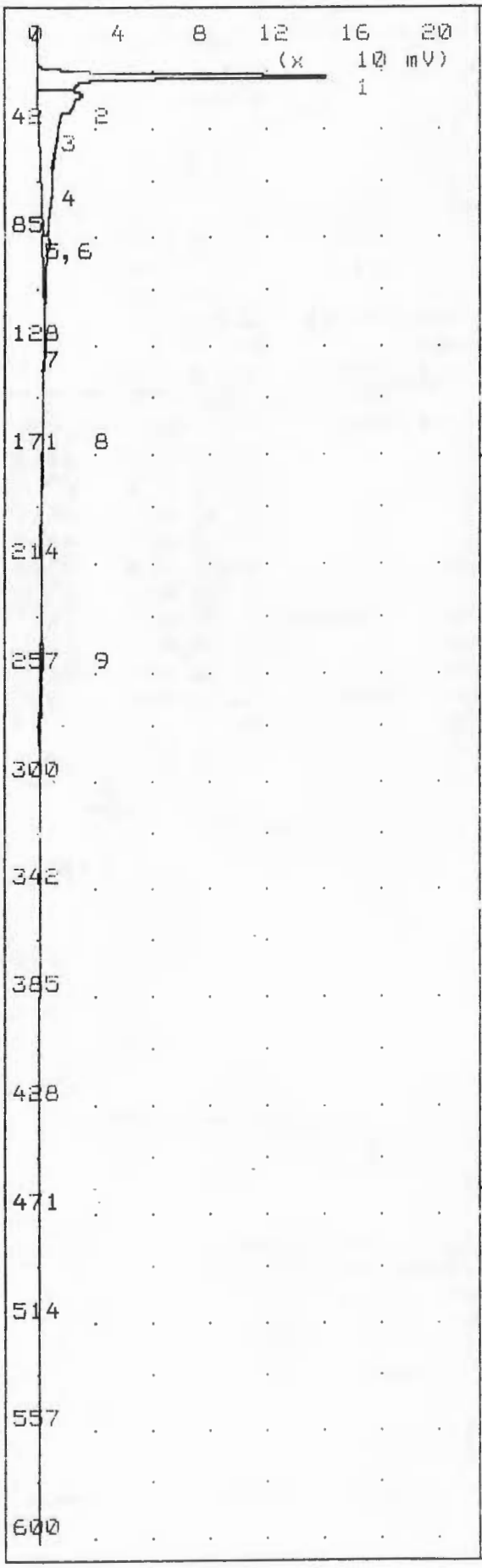
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-143
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank :
Bulb Blank :

Analysis #32 10S+ GC Function Analysis Report 97oc08bi.gc



Printed : Oct 8,97 15:39
Run at : Oct 8,97 15:24

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		400.1 mVs	20.0
2	Unknown		498.0 mVs	27.0
3	Unknown	x 1.57	0.912 mVs	42.9
4	Unknown		7.224 mVs	61.5
5	Unknown		0.285 mVs	80.5
6	Unknown	TCE	66.32 mVs	85.4
7	Unknown	Toluene	0.274 mVs	131.8
8	Unknown		3.124 mVs	162.4
9	Unknown		12.99 mVs	246.6

193 ~~123~~ ppb
2 ppb

952 x 1.57 = 1558
1558 x 3.86 = 6012
~~1.6~~

6 ppm

Notes

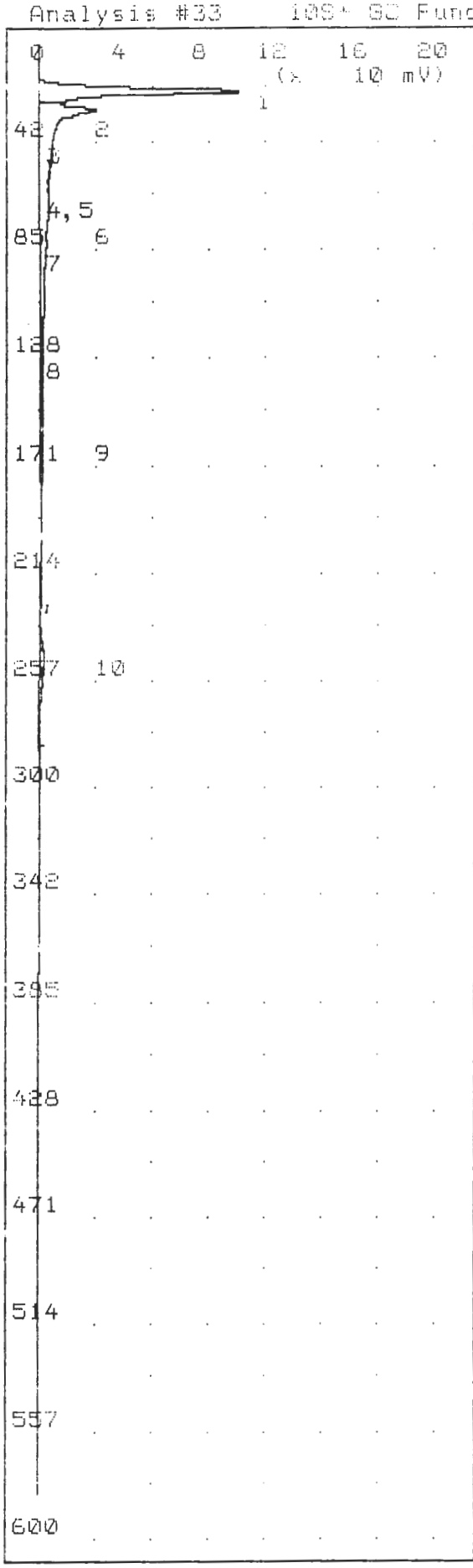
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-161
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank :
Bulb Blank :

Analysis #33 10S* GC Function Analysis Report



Printed : Oct 9,97 15:50
Run at : Oct 8,97 15:40

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		377.9 mVs	19.5	1.3
2	Unknown		652.3 mVs	27.0	
3	Unknown		4.250 mVs	43.0	
4	Unknown		1.395 mVs	61.0	
5	Unknown		2.048 mVs	65.0	
6	Unknown	Benzene	4.212 mVs	69.7	4 ppb
7	Unknown		1.504 mVs	80.5	
8	Unknown	Toluene	2.836 mVs	132.0	13 ppb
9	Unknown		17.86 mVs	161.2	
10	Unknown		48.40 mVs	246.4	

1118 x 344 = 3846

4 ppm

Notes

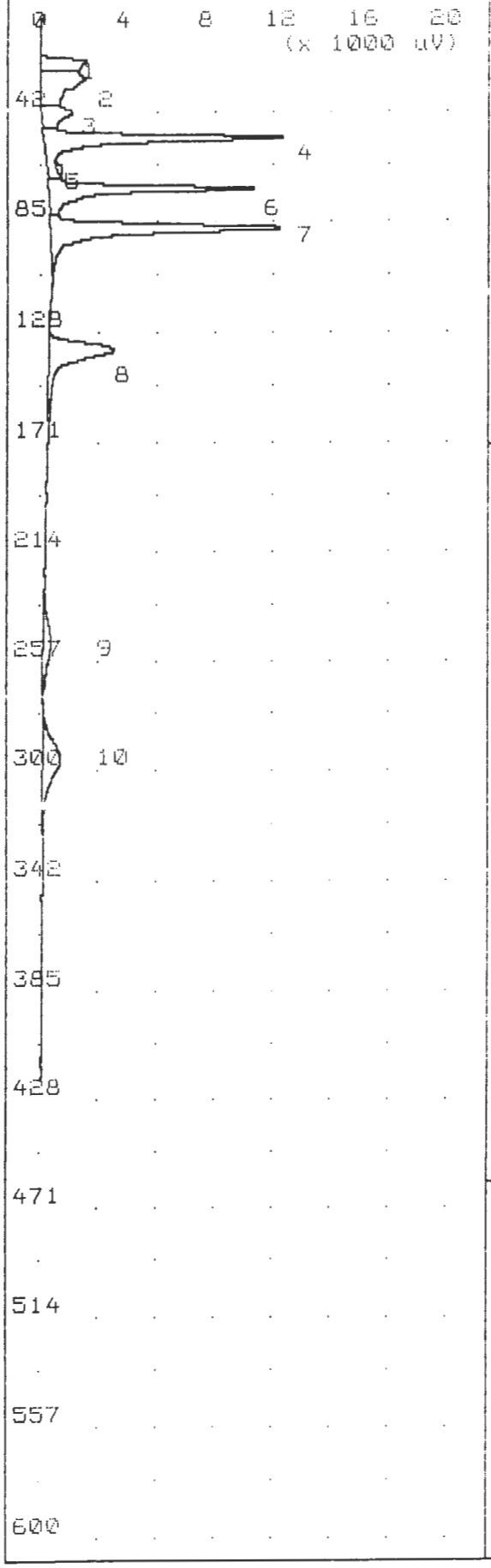
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-167
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank :
Bulb Blank :

Analysis #34 1064 GC Function Analysis Report



Printed : Oct 8,97 15:58
Run at : Oct 8,97 15:51

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.055	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		13.21 mVs	19.8	
2	Unknown		20.94 mVs	26.8	
3	Unknown		9.317 mVs	40.1	
4	Unknown	DCE	46.89 mVs	50.4	
5	Unknown		1.117 mVs	61.8	
6	Unknown	Benzene	38.45 mVs	70.0	2.6
7	Unknown	TCE	54.02 mVs	85.7	1.85
8	Unknown	Toluene	25.89 mVs	132.4	3.86
9	Unknown		6.018 mVs	246.4	
10	Unknown	p-xylene	14.12 mVs	292.5	

Notes

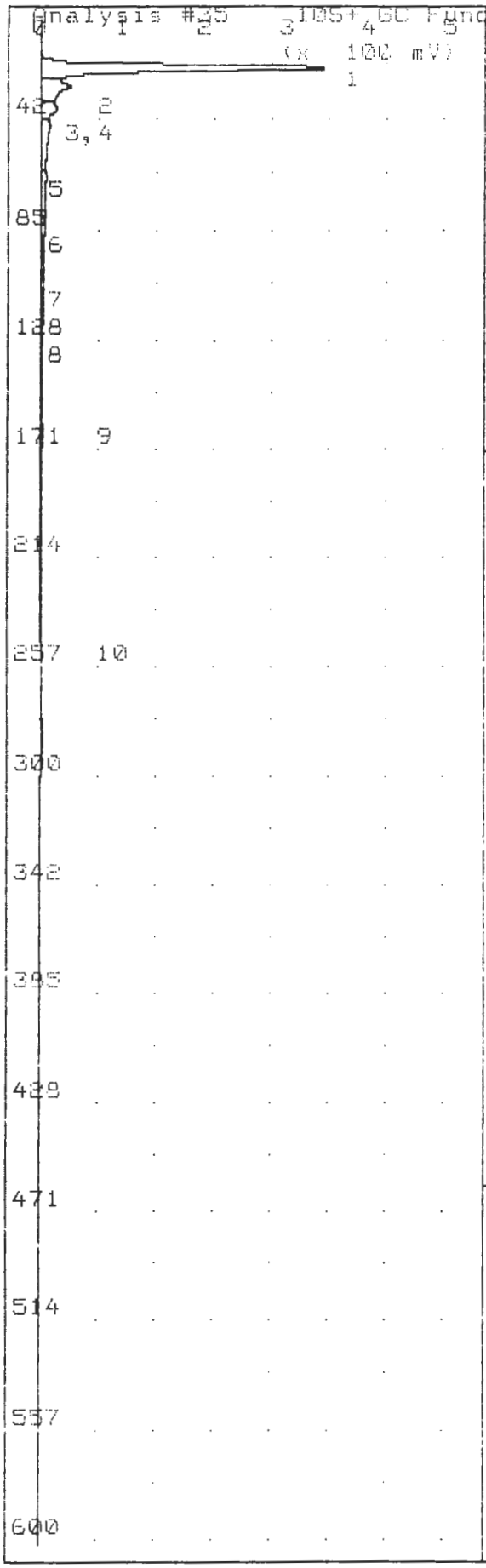
Seneca Army Depot
OEAD 59 -- Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #25 105+ GC Function Analysis Report



Printed : Oct 8,97 15:10
Run at : Oct 8,97 16:00

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.080	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	12.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.	
1	Unknown	? 1.224 Vs	19.5	4.7 ppm
2	Unknown	223.7 mVs	27.0	
3	Unknown	114.4 mVs	36.2	
4	Unknown	163.6 mVs	43.4	
5	Unknown	101.6 mVs	62.0	
6	Unknown	102.4 mVs	81.3	
7	Unknown	75.26 mVs	105.3	
8	Unknown Toluene	38.63 mVs	132.2	~149 ppb
9	Unknown	108.9 mVs	163.2	
10	Unknown	40.42 mVs	248.5	

2197 x 3.84 = 8437

8.5 ppm

Notes

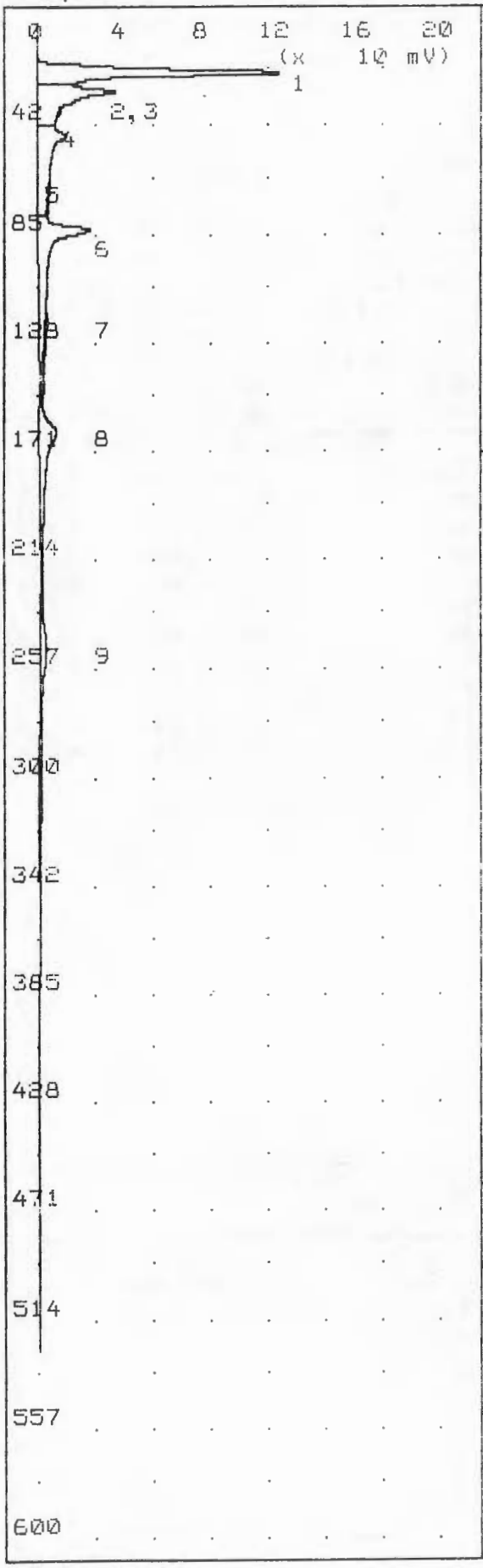
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-~~160~~ 164
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : #2

Syringe Blank :
Bulb Blank :

Analysis #36 105+ GC Function Analysis Report



Printed : Oct 8,97 16:25
Run at : Oct 8,97 16:16

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.057	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.	
1	Unknown	1,482.1 mVs	19.5	1.9 ppm
2	Unknown	286.6 mVs	27.0	
3	Unknown	1.985 mVs	34.7	
4	Unknown	247.9 mVs	44.3	
5	Unknown	4.072 mVs	61.0	
6	Unknown	384.5 mVs	80.6	
7	Unknown	4.783 mVs	115.0	
8	Unknown	239.1 mVs	161.2	
9	Unknown	119.6 mVs	246.4	

No Target Compounds detected

1773 + 3.86 = 6844

7 ppm

Notes

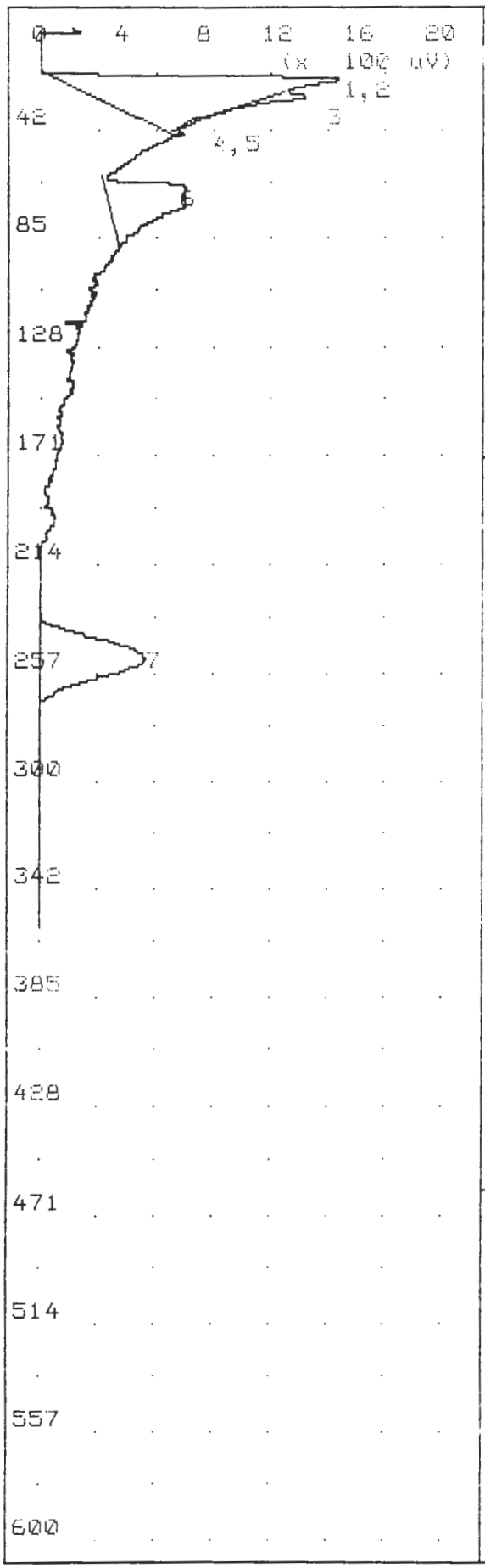
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-164
OVM Reading : 0.7 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank :
Bulb Blank :

Analysis #37 108+ GC Function Analysis Report



Printed : Oct 8,97 16:32
Run at : Oct 8,97 16:26

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.075	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.094 mVs	14.8
2	Unknown	19.05 mVs	19.9
3	Unknown	0.630 mVs	26.4
4	Unknown	0.135 mVs	35.8
5	Unknown	0.007 mVs	41.7
6	Unknown	6.455 mVs	63.8
7	Unknown	10.55 mVs	246.9

Notes

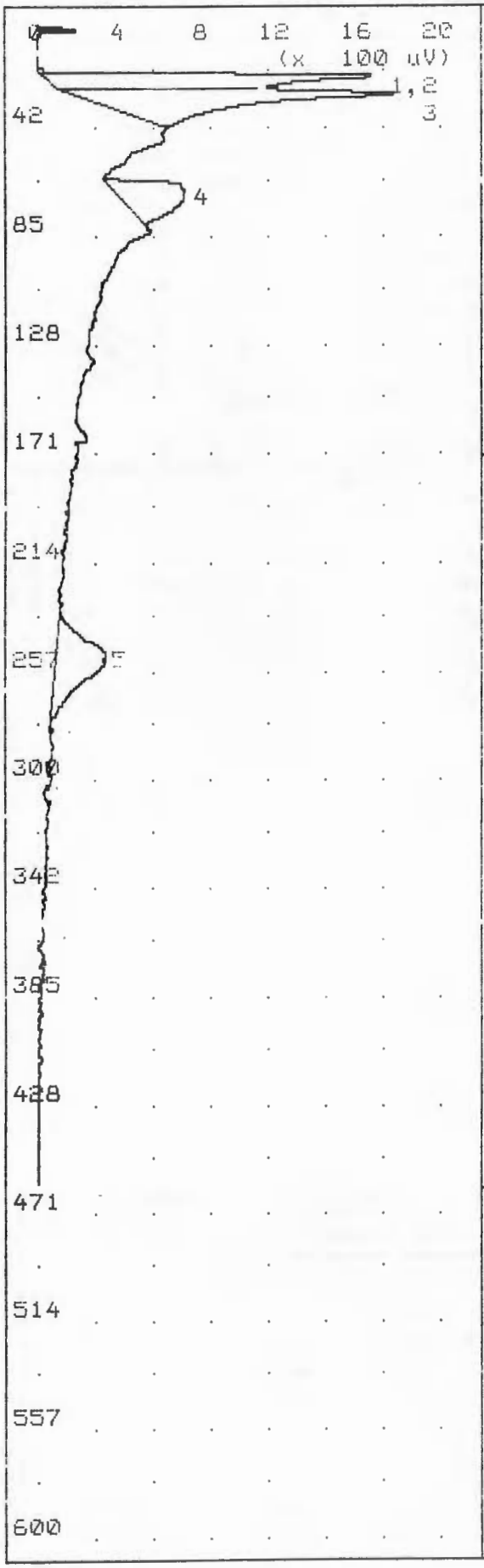
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : ~~100 ppb~~
Inj. Vol. : 0.5 ml

Syringe # : 6

Syringe Blank : Yes
Bulb Blank :

Analysis #38 10S+ GC Function Analysis Report



Printed : Oct 8,97 16:41
Run at : Oct 8,97 16:34

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.089	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.540 mVs	17.3
2	Unknown	8.600 mVs	20.2
3	Unknown	10.10 mVs	27.2
4	Unknown	4.358 mVs	66.4
5	Unknown	4.973 mVs	247.7

Notes

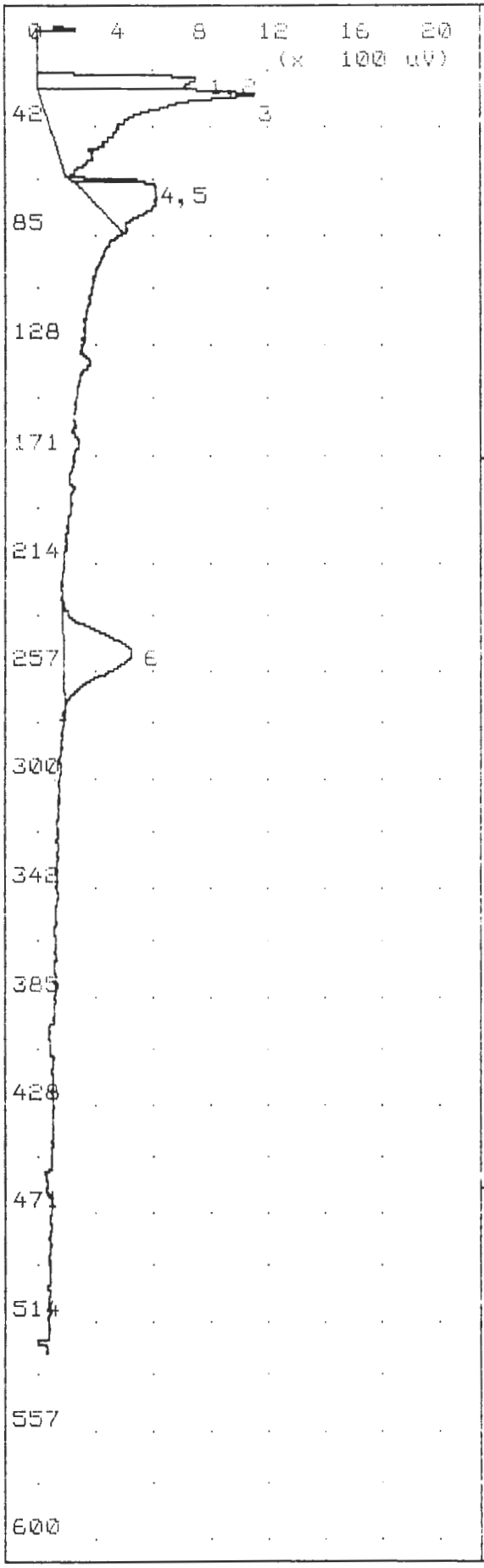
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank : Yes
Bulb Blank :

Analysis #39 10S+ GC Function Analysis Report



Printed : Oct 8,97 16:52
Run at : Oct 8,97 15:43

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.069	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Arb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.053	mVs	15.8
2	Unknown	5.548	mVs	20.9
3	Unknown	15.78	mVs	26.8
4	Unknown	0.503	mVs	61.6
5	Unknown	4.677	mVs	62.4
6	Unknown	6.568	mVs	246.4

Notes

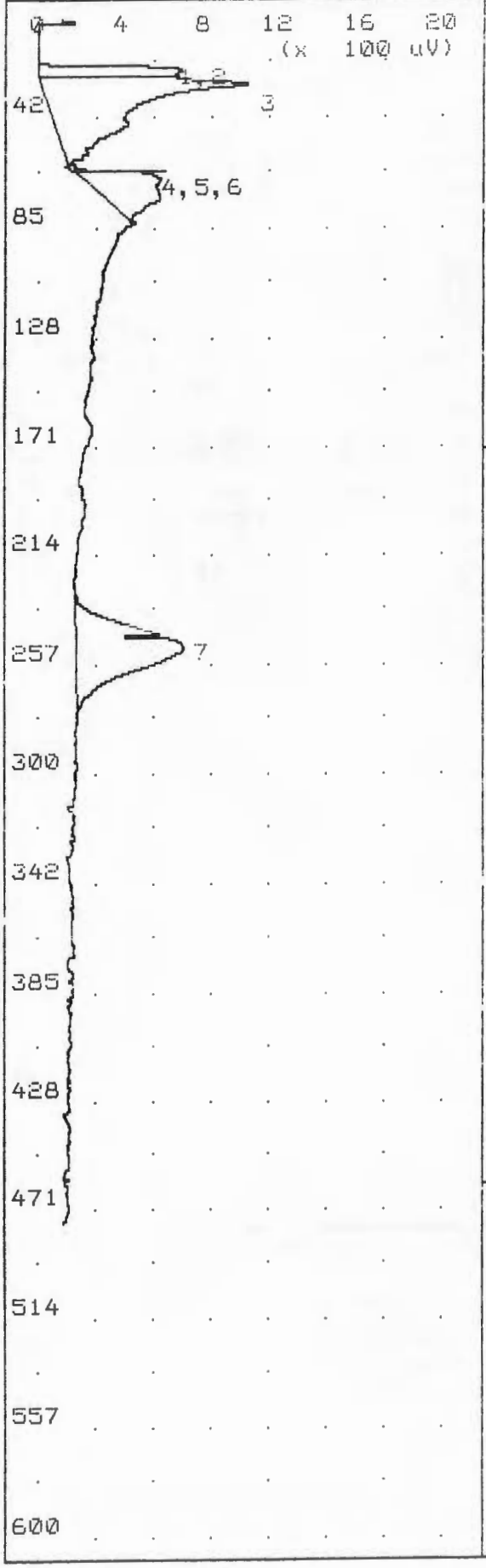
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank : Yes
Bulb Blank :

Analysis #40 10S+ GC Function Analysis Report



Printed : Oct 8,97 17:02
Run at : Oct 8,97 16:53

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.170 mVs	17.4
2	Unknown	4.719 mVs	21.4
3	Unknown	15.69 mVs	27.2
4	Unknown	0.066 mVs	58.5
5	Unknown	0.333 mVs	61.5
6	Unknown	4.435 mVs	63.5
7	Unknown	10.31 mVs	246.9

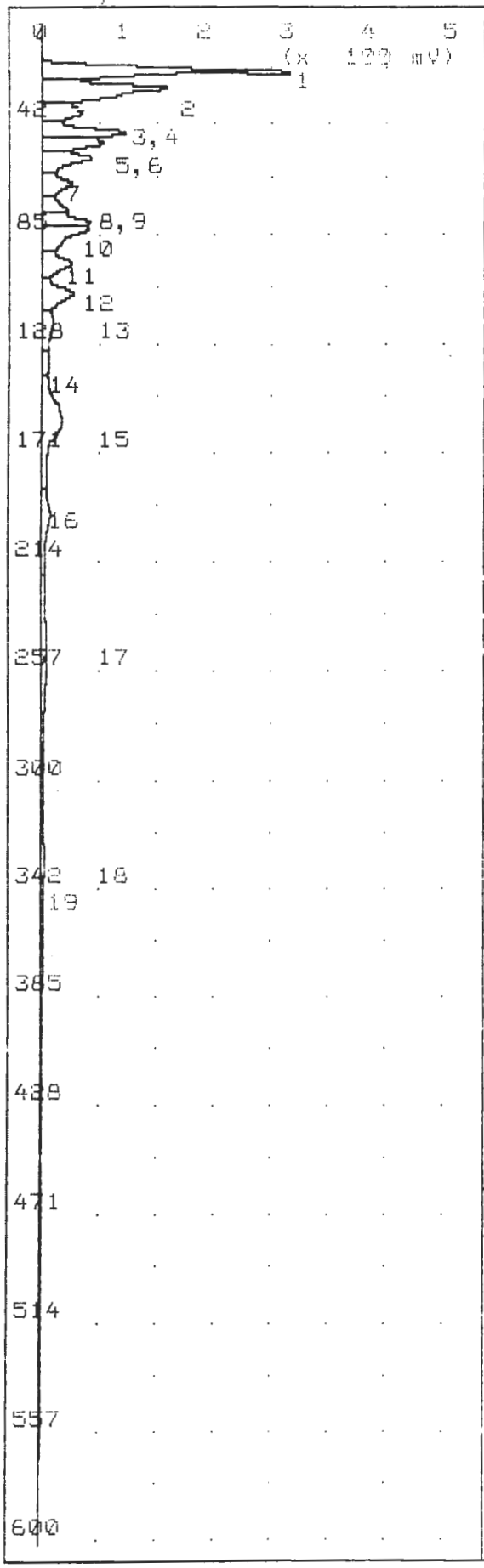
Notes

Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank : Yes
Bulb Blank :



Printed : Oct 8,97 17:16
Run at : Oct 7,97 17:05

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.	
1	Unknown		? 1.474	Vs	19.4	5.7 ppm
2	Unknown		855.7	mVs	27.4	
3	Unknown		244.9	mVs	36.2	
4	Unknown		441.7	mVs	43.9	
5	Unknown		296.0	mVs	47.9	
6	Unknown		327.2	mVs	53.6	
7	Unknown		228.7	mVs	63.2	
8	Unknown		169.1	mVs	73.7	
9	Unknown		240.1	mVs	78.0	
10	Unknown		354.7	mVs	80.9	
11	Unknown		248.5	mVs	94.2	
12	Unknown		302.6	mVs	106.1	
13	Unknown		179.8	mVs	117.2	
14	Unknown	Toluene	83.05	mVs	133.0	320 ppb
15	Unknown		607.3	mVs	156.8	
16	Unknown		249.1	mVs	193.0	
17	Unknown		446.7	mVs	247.2	
18	Unknown		110.7	mVs	327.2	
19	Unknown		350.2	mVs	337.6	

7217 x 3.84 = 27713

GC Plumbing may of been clogged 28ppb
Cleaned - new septum

Notes

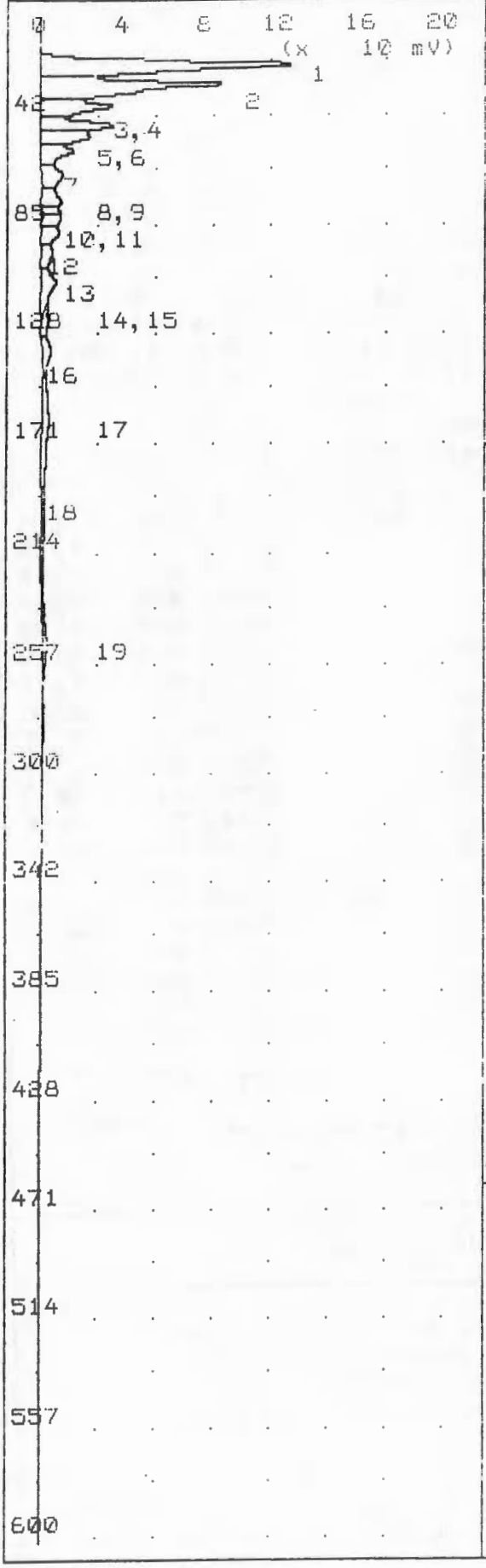
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-169
OVM Reading : 1.8 ppb
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank :
Bulb Blank :

Analysis #42 10S+ GC Function Analysis Report



Printed : Oct 8,97 17:50
Run at : Oct 8,97 17:40

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.069	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		7,635.1 mVs	19.4	2.5 ppm
2	Unknown		459.4 mVs	27.4	
3	Unknown		168.0 mVs	36.3	
4	Unknown		154.7 mVs	43.8	
5	Unknown		97.42 mVs	47.8	
6	Unknown		92.07 mVs	53.6	
7	Unknown		75.62 mVs	62.8	
8	Unknown		67.00 mVs	73.4	
9	Unknown		36.31 mVs	77.6	
10	Unknown		37.01 mVs	80.5	
11	Unknown	TCE	50.75 mVs	85.7	95 ppb
12	Unknown		44.30 mVs	93.4	
13	Unknown		76.76 mVs	105.4	
14	Unknown		6.317 mVs	115.4	
15	Unknown		24.50 mVs	118.4	
16	Unknown	Toluene	53.02 mVs	132.6	206 ppb
17	Unknown		104.6 mVs	160.2	
18	Unknown		38.37 mVs	190.6	
19	Unknown		53.74 mVs	246.1	

2280 x 3.88 = 8847

9 ppm

Almost Same Compounds as ~~162~~ SG12-169

Notes

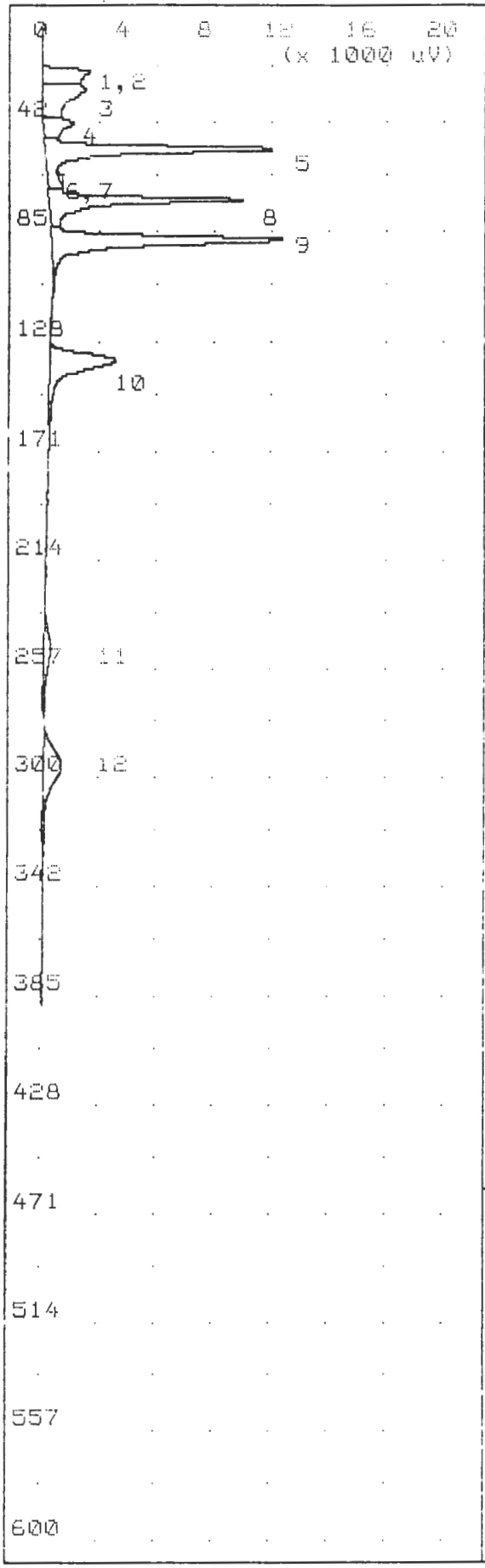
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-162
OVM Reading : 0.4 ppb
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank :
Bulb Blank :

Analysis #43 10S+ GC Function Analysis Report



Printed : Oct 8,97 17:59
Run at : Oct 8,97 17:52

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.083	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.	
1	Unknown		0.210	mVs	15.5	
2	Unknown		16.04	mVs	20.1	
3	Unknown		20.43	mVs	27.5	
4	Unknown		9.597	mVs	40.8	
5	Unknown		47.91	mVs	50.9	
6	Unknown		0.338	mVs	61.5	
7	Unknown		0.759	mVs	62.6	
8	Unknown		38.80	mVs	70.5	
9	Unknown	TCE	53.59	mVs	86.4	1.86
10	Unknown	Toluene	25.73	mVs	133.2	3.88
11	Unknown		5.455	mVs	247.2	
12	Unknown		14.64	mVs	293.0	

Notes

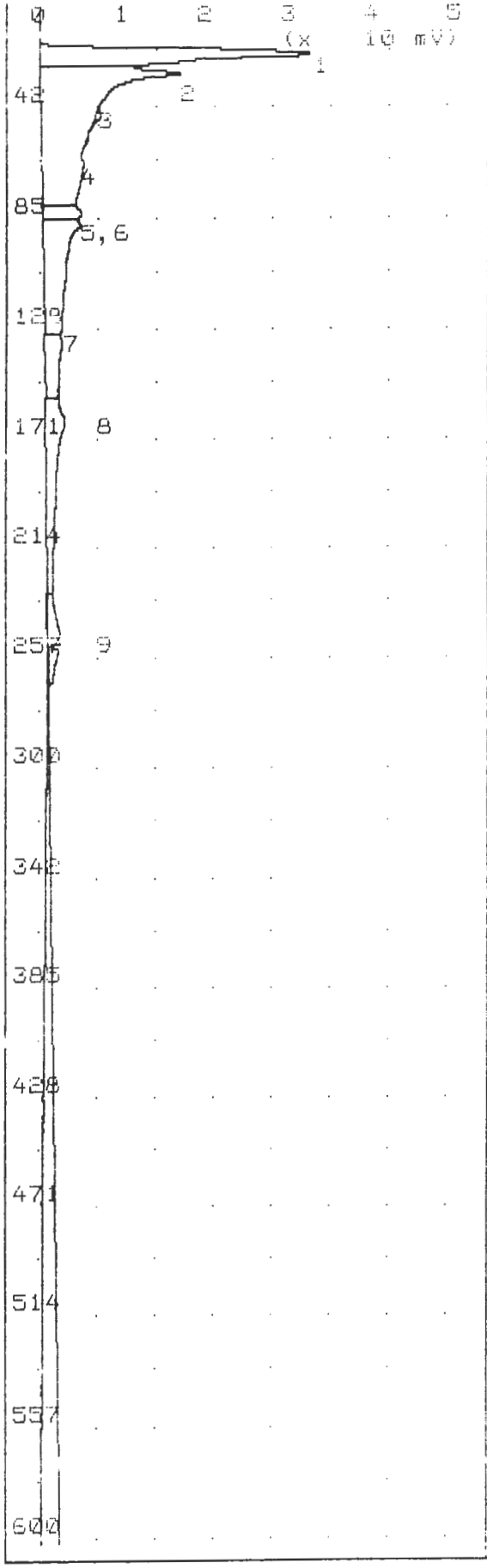
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #44 1994 GC Function Analysis Report



Printed : Oct 8,97 18:14
Run at : Oct 8,97 18:04

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.075	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		188.3 mVs	19.2	
2	Unknown		368.5 mVs	27.0	
3	Unknown		2.361 mVs	43.3	
4	Unknown		4.734 mVs	61.8	
5	Unknown		25.52 mVs	80.9	
6	Unknown	TCE	131.6 mVs	85.8	245 ppb
7	Unknown	Toluene	46.41 mVs	131.8	180 ppb
8	Unknown		106.5 mVs	162.0	
9	Unknown		41.65 mVs	246.4	

920 x 3.88 = 3569

3.5 ppm

Notes

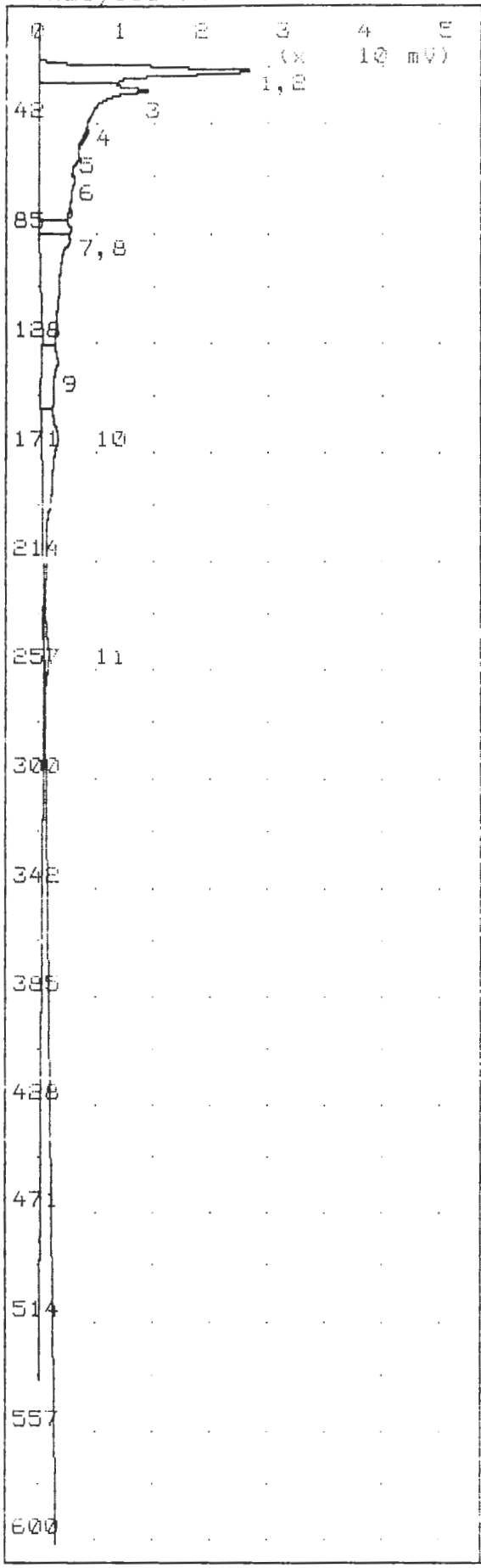
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-165
OVM Reading : Bkgd
Cal Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank :
Bulb Blank :

Analysis #45 1089 GC Function Analysis Report



Printer : Oct 8,97 19:25
Run at : Oct 8,97 18:16

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.066	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.139	mVs	11.2
2	Unknown	137.4	mVs	19.0
3	Unknown	306.6	mVs	27.0
4	Unknown	1.482	mVs	43.1
5	Unknown	0.312	mVs	53.1
6	Unknown	4.234	mVs	61.1
7	Unknown	21.14	mVs	81.2
8	Unknown	106.0	mVs	86.1
9	Unknown	42.[illegible]	mVs	133.2
10	Unknown	77.50	mVs	164.0
11	Unknown	17.78	mVs	249.0

Notes

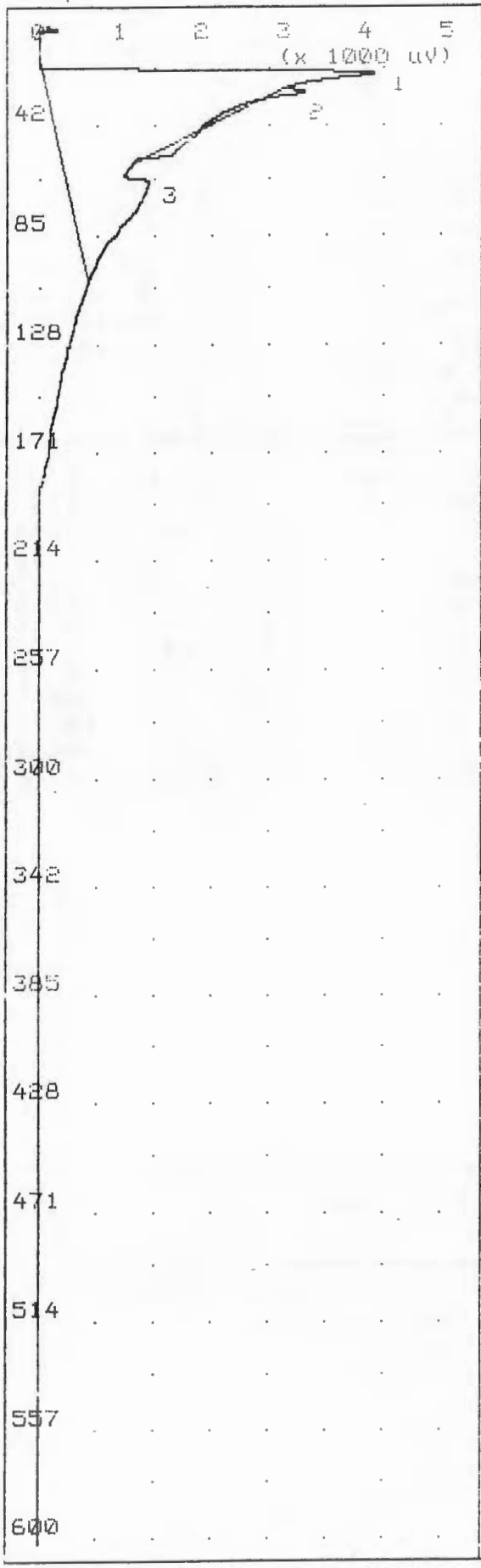
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-165Dup
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank :
Bulb Blank :

Analysis #1 105+ GC Function Analysis Report



Printed : Oct 9,97 07:44
Run at : Oct 9,97 07:34

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	21	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	113.7 mVs	19.9
2	Unknown	0.839 mVs	27.2
3	Unknown	7.011 mVs	61.7

Notes

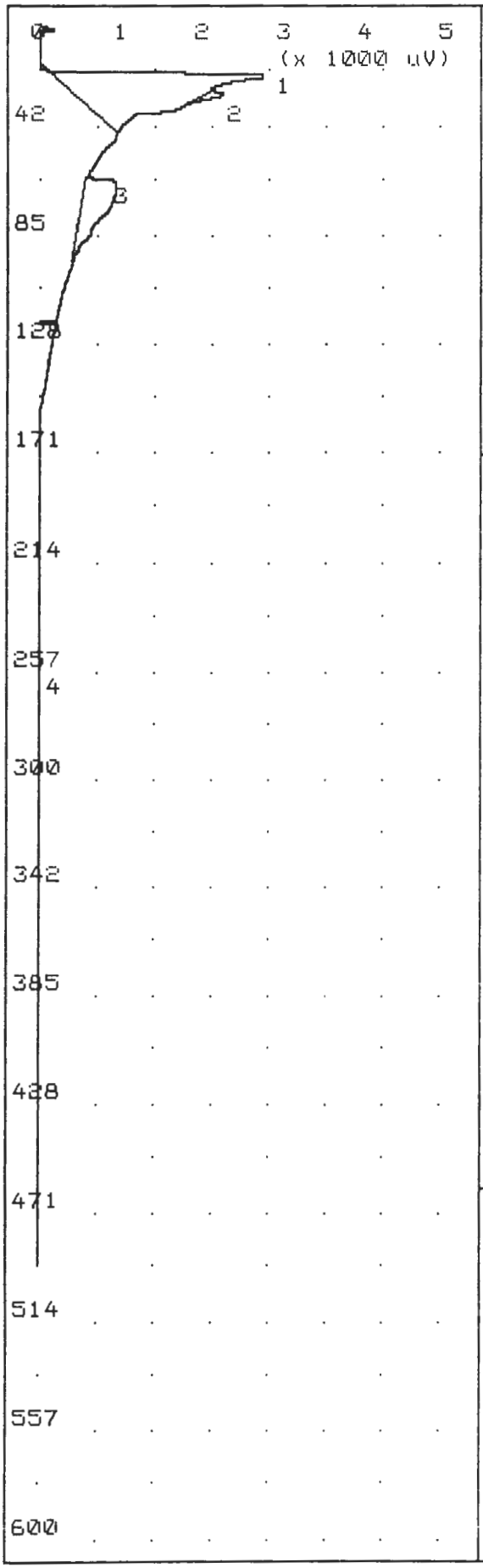
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank :
Bulb Blank :

Analysis #2 10S+ GC Function Analysis Report



Printed : Oct 9,97 08:01
Run at : Oct 9,97 07:52

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	34/35	C
Amb Temp	24	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	32.66 mVs	20.6
2	Unknown	0.659 mVs	27.2
3	Unknown	7.602 mVs	62.8
4	Unknown	2.395 mVs	259.2

Notes

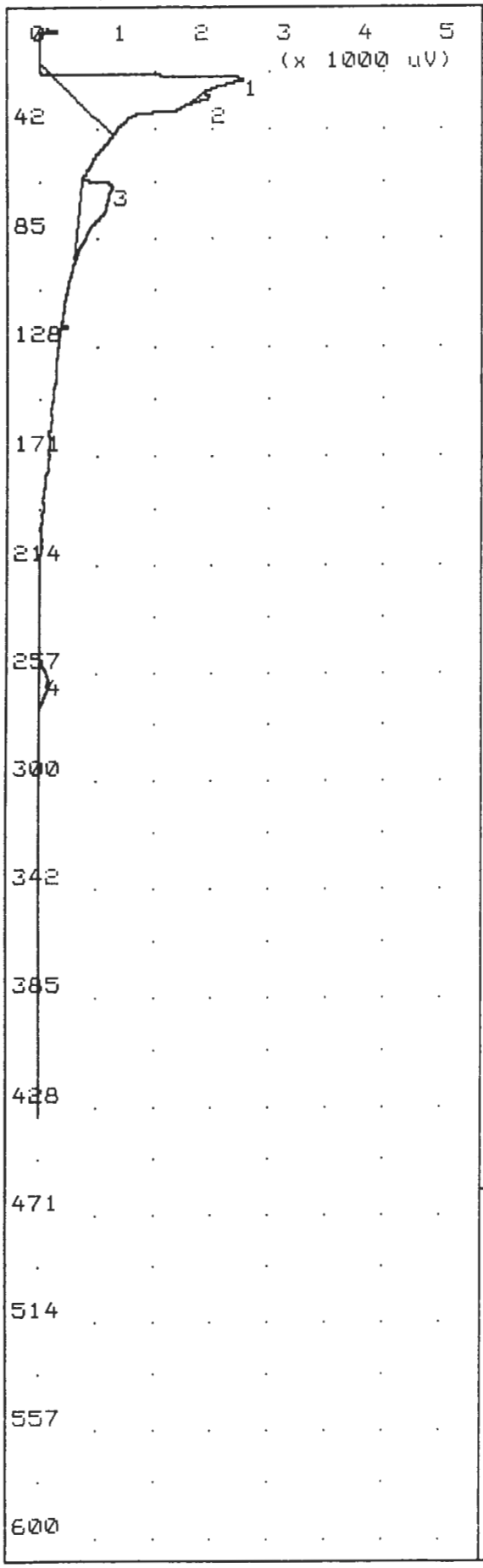
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank : Yes
Bulb Blank :

Analysis #3 10S+ GC Function Analysis Report



Printed : Oct 9,97 08:15
Run at : Oct 9,97 08:08

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.058	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	26	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	30.48 mVs	20.3
2	Unknown	0.381 mVs	27.3
3	Unknown	6.602 mVs	63.3
4	Unknown	3.949 mVs	257.6

Notes

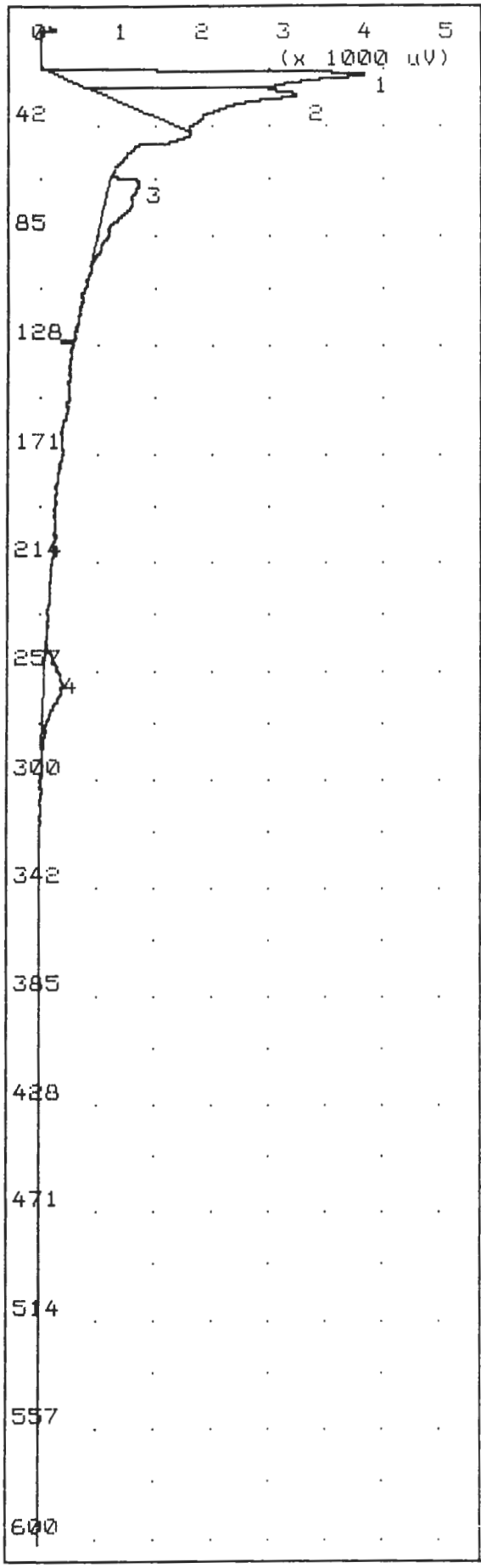
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank : Yes
Bulb Blank :

Analysis #4 10S+ GC Function Analysis Report



Printed : Oct 9,97 08:27
Run at : Oct 9,97 08:17

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	27	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	23.33 mVs	19.8
2	Unknown	18.89 mVs	27.9
3	Unknown	7.040 mVs	61.3
4	Unknown	4.211 mVs	259.7

Notes

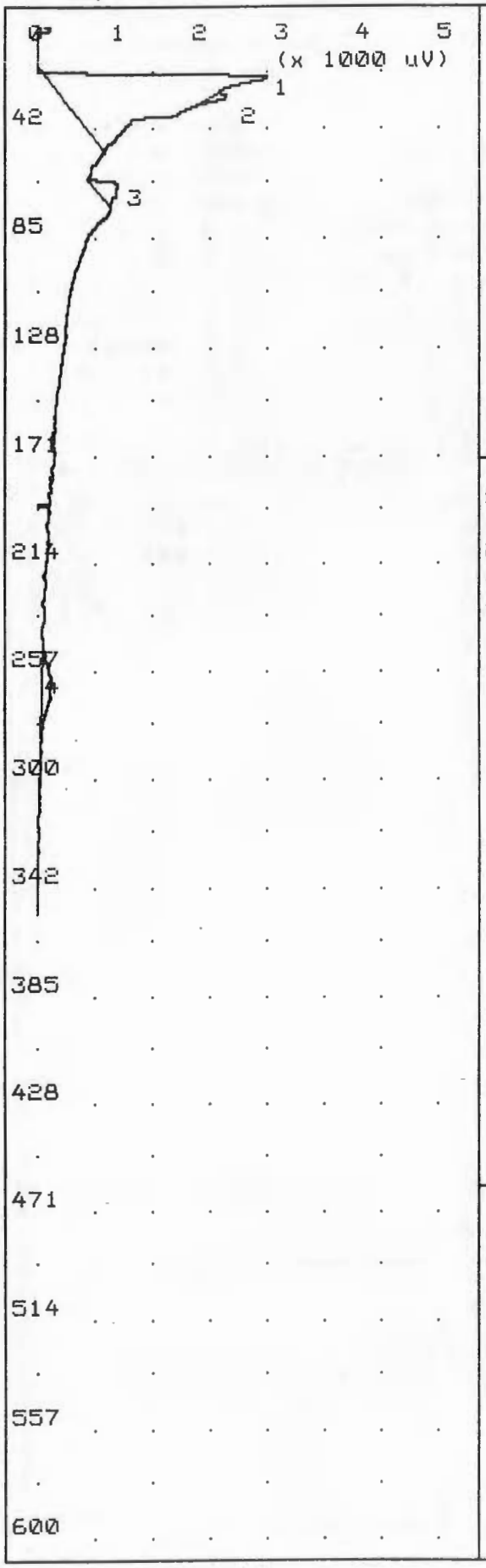
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank : Yes
Bulb Blank : Yes

Analysis #5 10S+ GC Function Analysis Report



Printed : Oct 9,97 08:35
Run at : Oct 9,97 08:29

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.068	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	28 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	41.72 mVs	20.2
2	Unknown	0.572 mVs	27.2
3	Unknown	2.004 mVs	61.6
4	Unknown	2.037 mVs	258.6

Notes

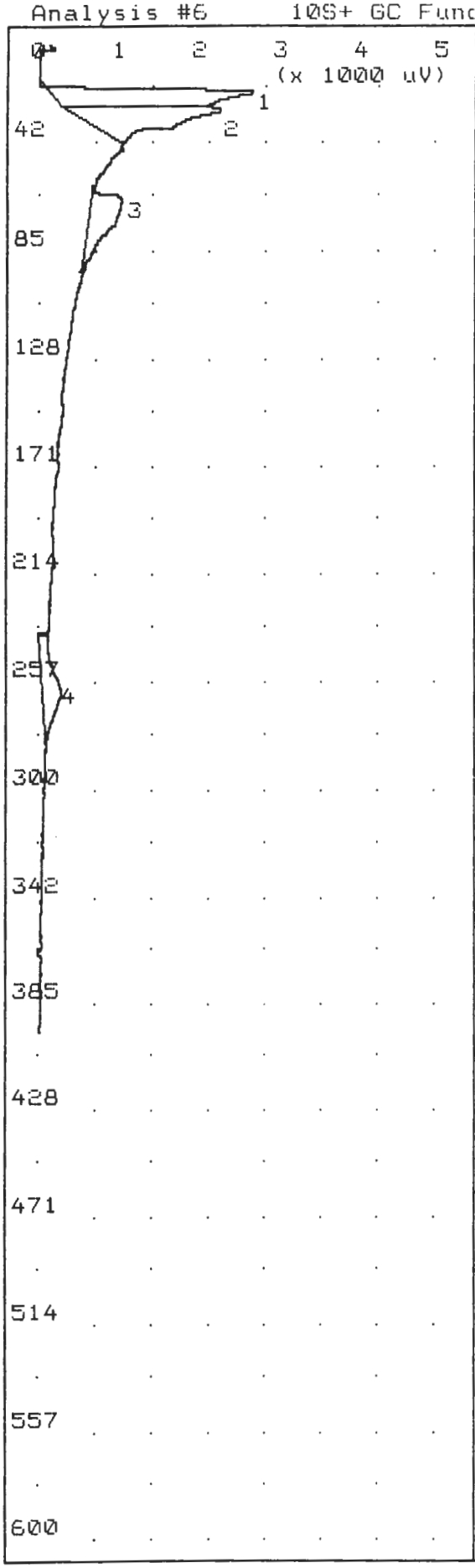
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : ~~A~~ 8

Syringe Blank : Yes
Bulb Blank : ~~Yes~~

Analysis #6 10S+ GC Function Analysis Report



Printed : Oct 9,97 08:44
Run at : Oct 9,97 08:37

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.084	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	28	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	17.55 mVs	20.6
2	Unknown	14.39 mVs	27.5
3	Unknown	6.866 mVs	62.6
4	Unknown	18.52 mVs	258.1

Notes

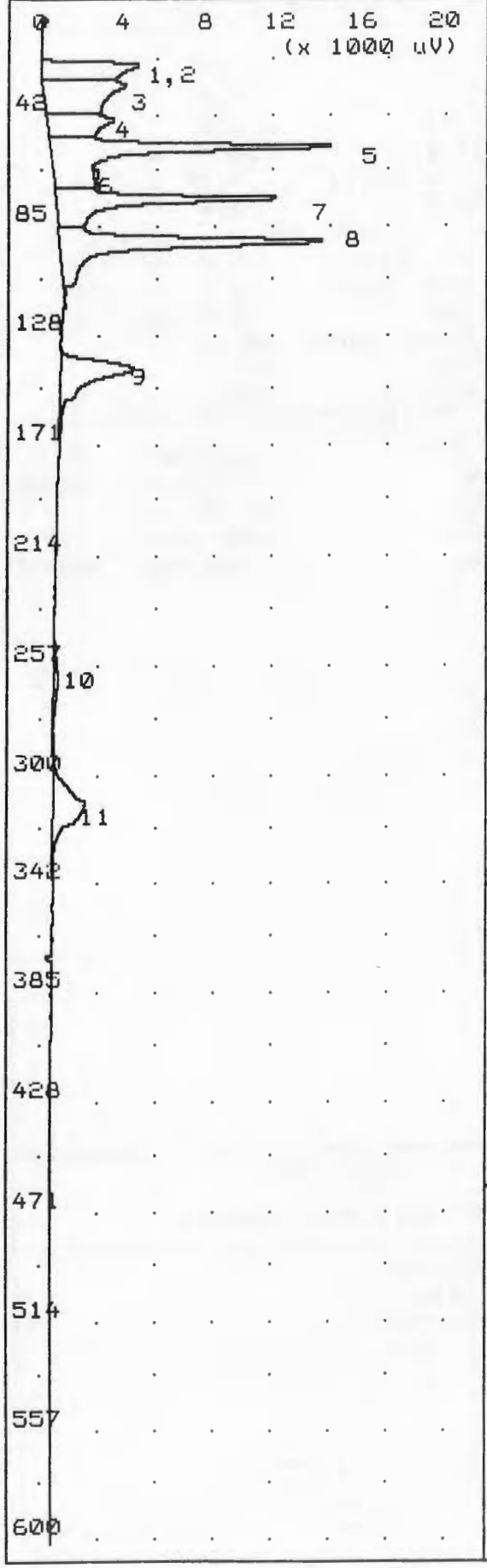
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank : Yes
Bulb Blank :

Analysis #7 10S+ GC Function Analysis Report



Printed : Oct 9,97 09:04
Run at : Oct 9,97 08:54

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.078	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	30 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.061 mVs	13.8
2	Unknown	33.40 mVs	20.2
3	Unknown	43.62 mVs	28.2
4	Unknown	24.74 mVs	42.2
5	Unknown	78.68 mVs	52.4
6	Unknown	1.384 mVs	61.2
7	Unknown	55.44 mVs	72.2
8	Unknown	72.65 mVs	89.0
9	Unknown	32.52 mVs	138.4
10	Unknown	3.323 mVs	258.6
11	Unknown	23.29 mVs	308.8

RT's too High - increase flow to 13.5 cc/min

Notes

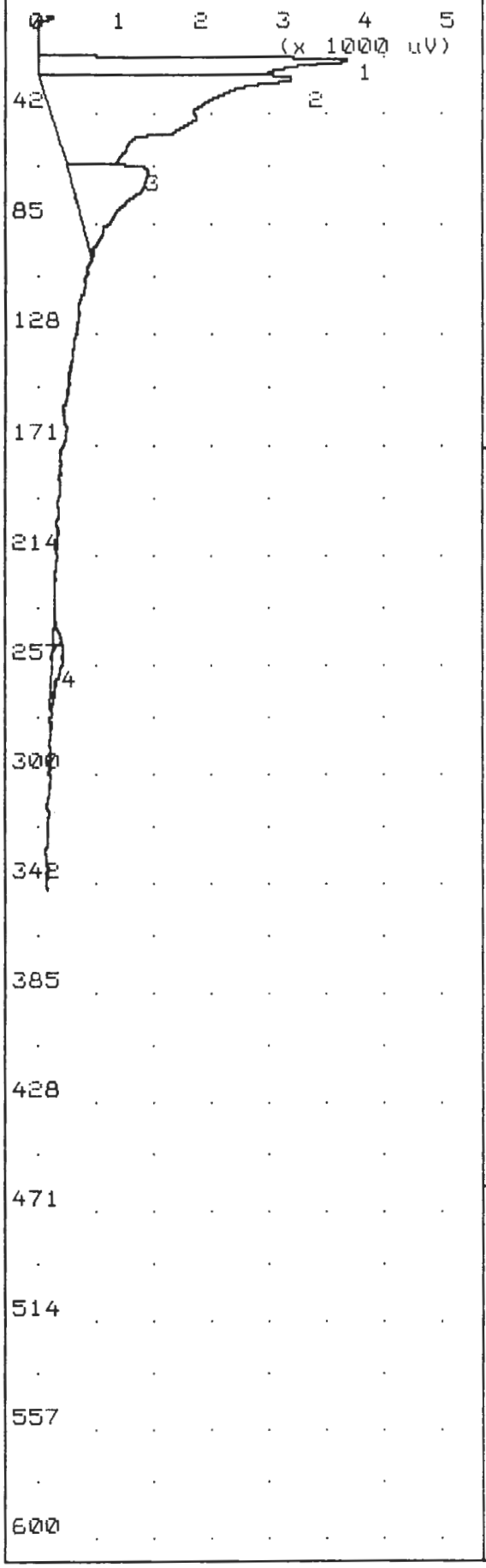
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #8 10S+ GC Function Analysis Report



Printed : Oct 9,97 09:11
Run at : Oct 9,97 09:05

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	30 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	25.92 mVs	19.4
2	Unknown	59.89 mVs	26.4
3	Unknown	18.30 mVs	62.5
4	Unknown	2.345 mVs	250.9

Notes

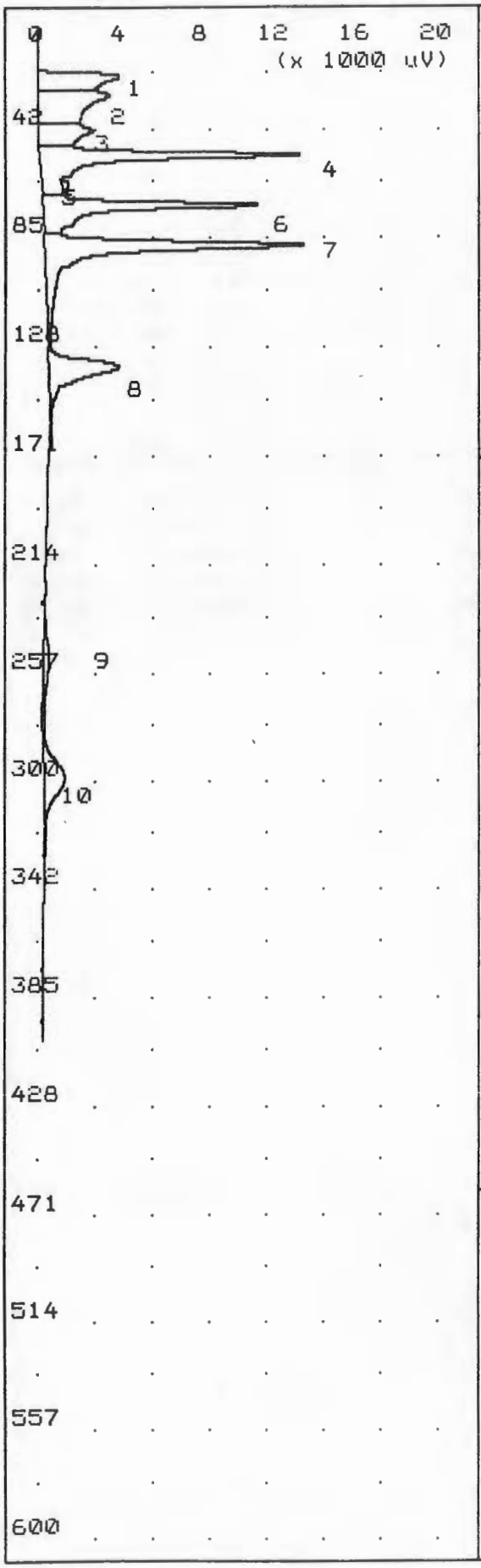
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank : Yes
Bulb Blank :

Analysis #9 10S+ GC Function Analysis Report



Printed : Oct 9,97 09:19
Run at : Oct 9,97 09:13

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	30 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		27.04 mVs	19.5
2	Unknown		36.04 mVs	27.0
3	Unknown		19.85 mVs	40.3
4	Unknown	cis1,2DCE	63.62 mVs	50.4
5	Unknown		1.193 mVs	61.6
6	Unknown	Benzene	48.81 mVs	70.2
7	Unknown	TCE	73.59 mVs	86.1
8	Unknown	Toluene	30.29 mVs	133.4
9	Unknown		4.469 mVs	249.8
10	Unknown	p-xylene	18.42 mVs	296.0

Notes

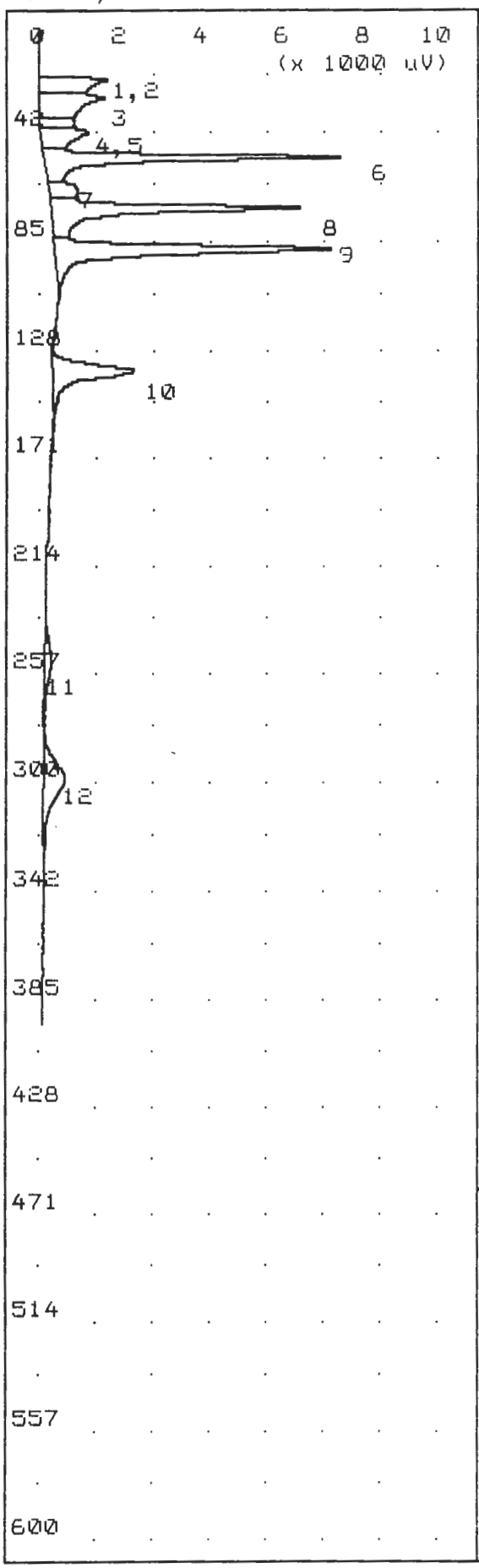
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #10 10S+ GC Function Analysis Report



Printed : Oct 9,97 09:28
Run at : Oct 9,97 09:21

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	30 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.
1	Unknown		0.283	mVs	16.6
2	Unknown		11.00	mVs	19.9
3	Unknown		12.84	mVs	27.0
4	Unknown		2.483	mVs	36.5
5	Unknown		7.954	mVs	40.2
6	Unknown	cis 1,2 DCE	26.12	mVs	50.2
7	Unknown		4.650	mVs	62.6
8	Unknown	Benzene	24.93	mVs	70.0
9	Unknown	TCE	31.12	mVs	86.0
10	Unknown	Toluene	14.68	mVs	133.6
11	Unknown		2.913	mVs	251.4
12	Unknown	p-xylene	8.194	mVs	296.0

Notes

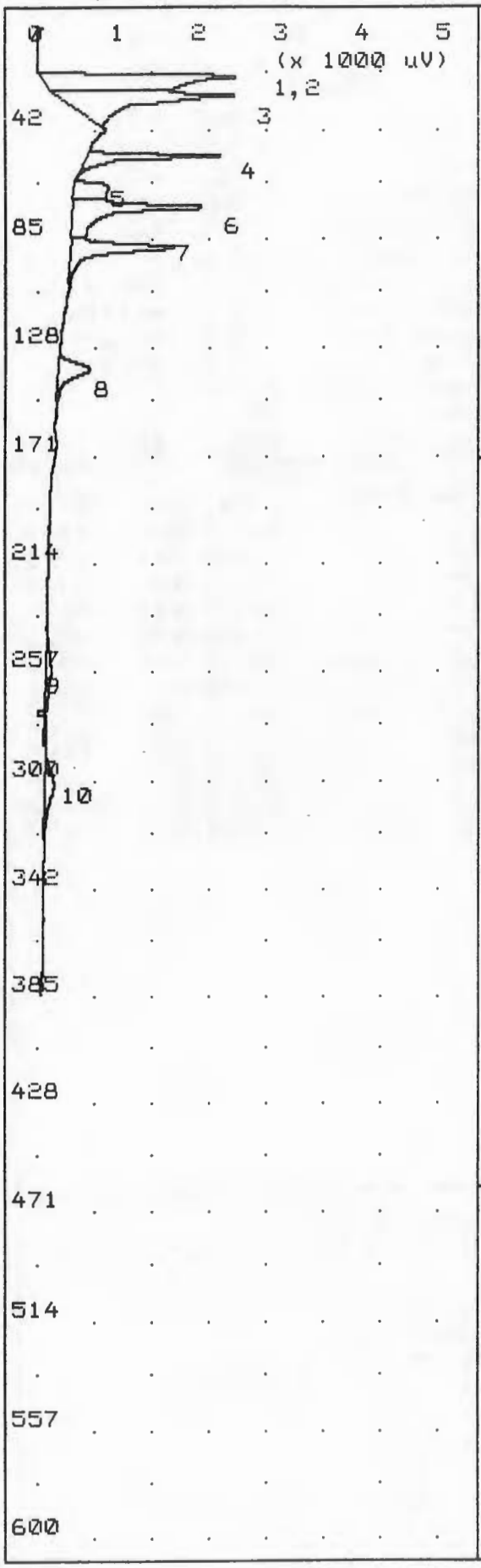
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 50 ppb
Inj. Vol. : 0.25 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #11 10S+ GC Function Analysis Report



Printed : Oct 9,97 09:36
Run at : Oct 9,97 09:30

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		0.065 mVs	16.4
2	Unknown		15.07 mVs	19.5
3	Unknown		10.20 mVs	27.0
4	Unknown	cis 1,2 DCE	4.040 mVs	50.2
5	Unknown		2.853 mVs	62.3
6	Unknown	Benzene	7.753 mVs	70.0
7	Unknown	TCE	5.648 mVs	86.1
8	Unknown	Toluene	2.744 mVs	134.5
9	Unknown		0.820 mVs	253.8
10	Unknown	p-xylene	1.758 mVs	297.8

Notes

Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 10 ppb
Inj. Vol. : 0.05 ml

Syringe # : S

Syringe Blank :
Bulb Blank :

SOIL GAS 2-POINT CALIBRATION

Parsons Engineering-Science | CLIENT: ACOE | DATE: 10/9/97

PROJECT: Seneca Army Depot - Soil Gas Survey

LOCATION: SEAD 12

GC Operator: Kerry Smith

Instrument Specs:

Type of GC: Photovac 10 S Plus
Column Type: LPS17-5 Isothermal
Col. Temp. (°C): 35°C
Chart Speed: Auto
Gain: Auto
Sensitivity: Auto
Gas Flow Rate: 14 cc/min
Tank Pressure: 40 psi

BTEX Calibration Gas Specifications

Manfacturer: Lot#:
Concentration (ppmV): 100 ppm
Concentration: (ppmV)
cis 1,2-DCE
Benzene
TCE
Toluene
P-Xylene

Analysis A
Inj. #: 9

A 0.5 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF			
cis 1,2-DCE	50.4	0.1	0.06362	1.57			
Benzene	70.2		0.04881	2.04			
TCE	86.1		0.07359	1.36			
Toluene	133.4		0.03029	3.30			
P-Xylene	296		0.01842	5.43			

Comments:
Concentration is normalized to _____ ml.

Analysis B
Inj. #: 10

A 0.25 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF	Delta RF	RF avg.	
cis 1,2-DCE	50.2	0.05	0.02612	1.92			
Benzene	70.0		0.02493	2.01			
TCE	86.0		0.03112	1.61			
Toluene	133.6		0.01468	3.41			
P-Xylene	296.0		0.008194	6.10			

Comments:
Concentration is normalized to 0.5 ml.
Delta RF = (A-B)/(A+B)/2

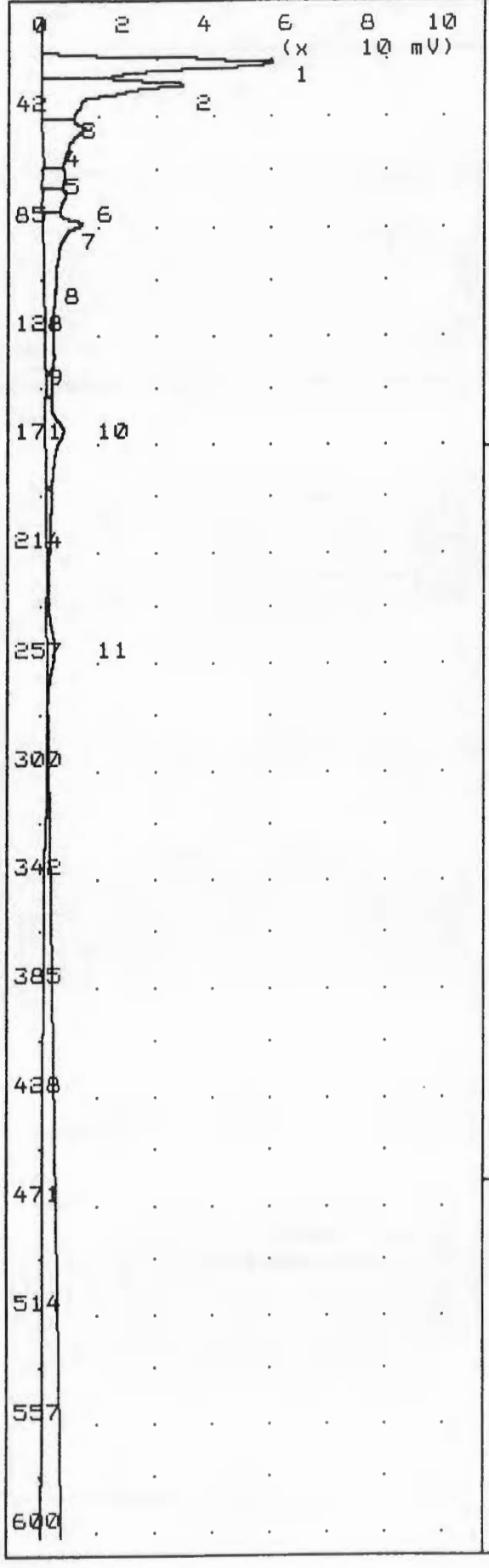
Analysis C (if RF relatative % difference is greater than 50%)
Inj. #: 11

A 0.05 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF	Delta RF	RF avg.	
cis 1,2-DCE	50.2	0.01	0.00404	2.48			
Benzene	70.0		0.007753	1.29			
TCE	86.1		0.005648	1.77			
Toluene	134.5		0.002744	3.64			
P-Xylene	297.8		0.001758	5.69			

Comments:
Concentration is normalized to 0.5 ml.

Analysis #12 10S+ GC Function Analysis Report



Printed : Oct 9,97 09:48
Run at : Oct 9,97 09:38

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		330.4 mVs	19.2	1ppm
2	Unknown		276.5 mVs	27.6	
3	Unknown		136.0 mVs	44.9	
4	Unknown		0.557 mVs	53.3	
5	Unknown		42.19 mVs	61.3	
6	Unknown	Benzene	46.05 mVs	70.4	94 ppb
7	Unknown		226.8 mVs	81.6	
8	Unknown		0.592 mVs	106.1	
9	Unknown	Toluene	3.165 mVs	134.0	12 ppb
10	Unknown		131.1 mVs	163.4	
11	Unknown		45.97 mVs	248.5	

1244 x 3.3 = 4105

4 ppm

Notes

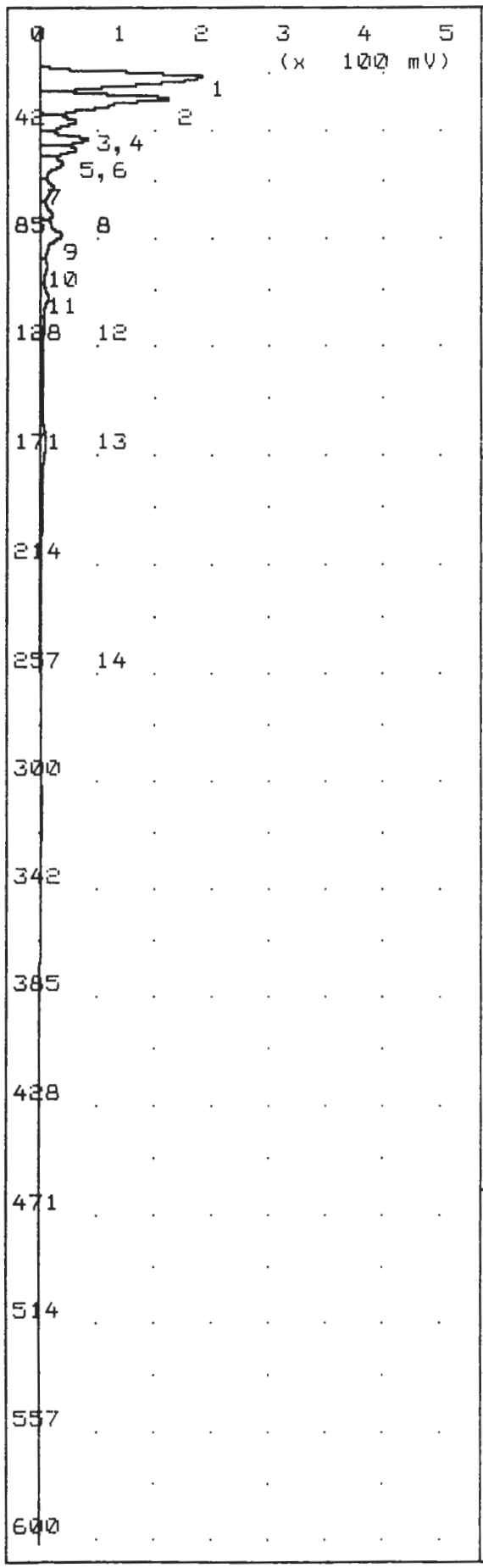
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-163
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank :
Bulb Blank :

Analysis #13 10S+ GC Function Analysis Report



Printed : Oct 9,97 10:02
Run at : Oct 9,97 09:51

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.	
1	Unknown ?	1.172 Vs	19.1	4 ppm
2	Unknown	793.9 mVs	27.7	
3	Unknown	212.4 mVs	36.6	
4	Unknown	256.3 mVs	44.2	
5	Unknown	176.2 mVs	48.2	
6	Unknown	158.0 mVs	53.8	
7	Unknown	107.1 mVs	63.1	
8	Unknown	82.62 mVs	73.8	
9	Unknown	225.1 mVs	81.4	
10	Unknown	65.11 mVs	94.4	
11	Unknown	94.77 mVs	106.4	
12	Unknown	97.41 mVs	116.9	
13	Unknown	257.4 mVs	163.2	
14	Unknown	64.03 mVs	249.3	

No Target Compounds Detected

3766 x 3.3 = 12428

12.5 ppm

Notes

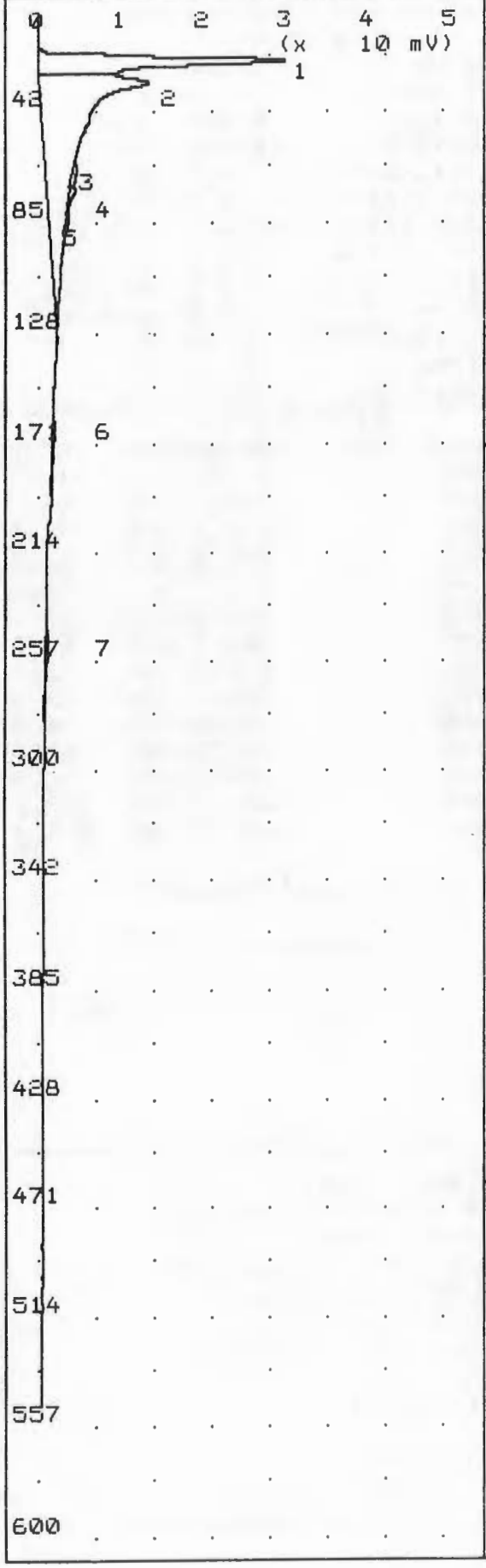
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-166
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank :
Bulb Blank :

Analysis #14 10S+ GC Function Analysis Report



Printed : Oct 9,97 10:43
Run at : Oct 9,97 10:33

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		148.9 mVs	19.7
2	Unknown		352.3 mVs	28.6
3	Unknown		3.832 mVs	61.6
4	Unknown	Benzene	2.913 mVs	70.6
5	Unknown		1.072 mVs	81.6
6	Unknown		2.834 mVs	162.8
7	Unknown		4.931 mVs	248.0

4 ppb

518 x 3.3 = 1709

1.7 ppm

Notes

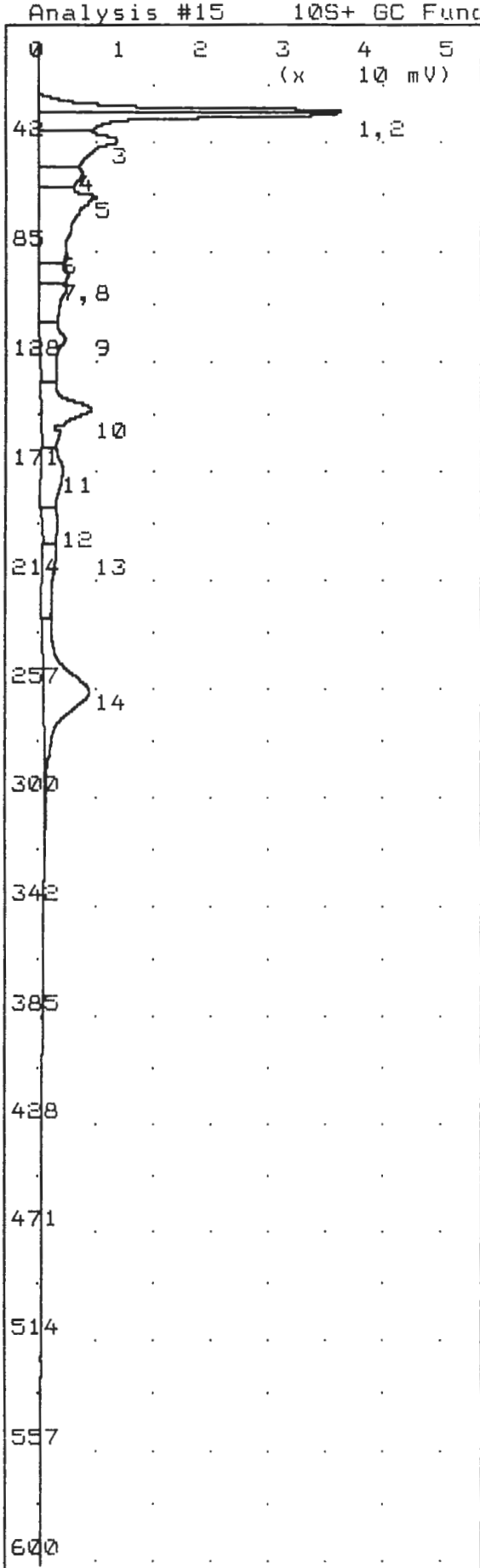
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-133
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 6

Syringe Blank :
Bulb Blank :

Analysis #15 10S+ GC Function Analysis Report



Printed : Oct 9,97 10:55
Run at : Oct 9,97 10:45

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		111.4 mVs	28.2	
2	Unknown		109.6 mVs	29.4	
3	Unknown		107.0 mVs	39.4	
4	Unknown		43.69 mVs	52.7	
5	Unknown		139.9 mVs	61.8	
6	Unknown		0.532 mVs	84.9	RF
7	Unknown		28.41 mVs	92.5	
8	Unknown	TCE	42.04 mVs	98.0	54 ppb
9	Unknown		56.99 mVs	117.3	
10	Unknown	Toluene	83.09 mVs	144.4	281 ppb
11	Unknown		53.94 mVs	168.6	
12	Unknown		27.63 mVs	189.6	
13	Unknown		39.59 mVs	199.6	
14	Unknown		137.3 mVs	255.7	

Response Factor from 100ppb Std Analysis #16

987 x 3.38 = 3336

3.5 ppm

Notes

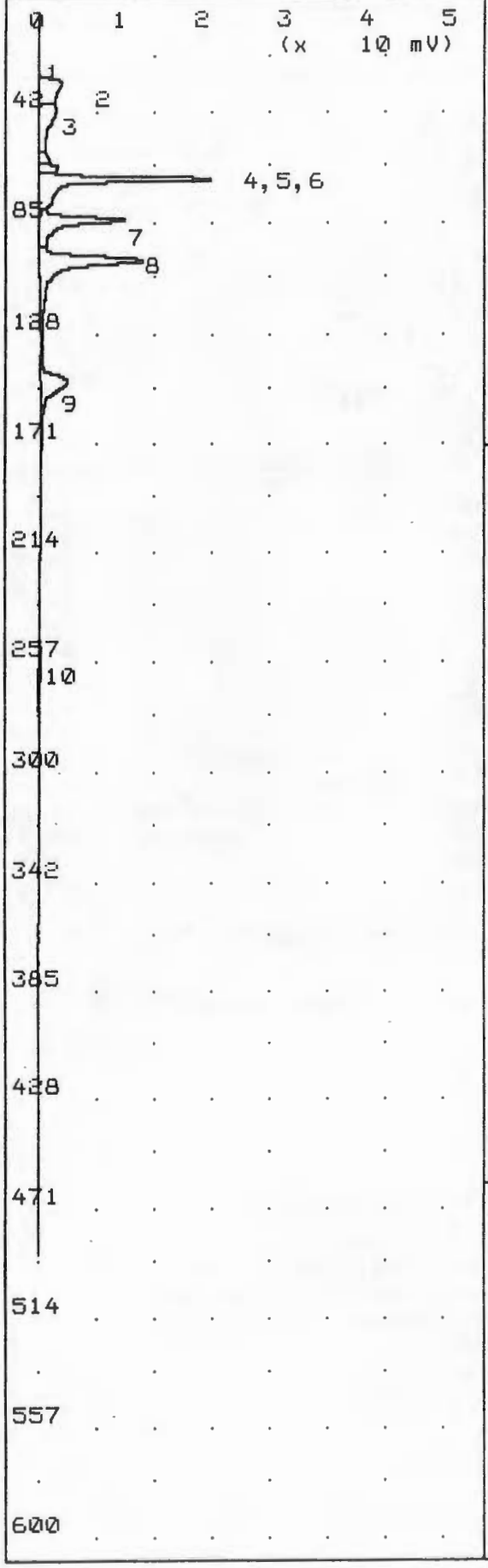
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-136
OVM Reading : 0.5 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank :
Bulb Blank :

Analysis #16 10S+ GC Function Analysis Report



Printed : Oct 9,97 11:07
Run at : Oct 9,97 10:59

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.057	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.	
1	Unknown		0.024	mVs	23.7	
2	Unknown		35.24	mVs	28.4	
3	Unknown		35.94	mVs	39.4	
4	Unknown		6.388	mVs	58.5	
5	Unknown		8.933	mVs	61.0	
6	Unknown	cis 1,2 DCE	72.71	mVs	65.8	RF
7	Unknown	Benzene	46.20	mVs	81.7	
8	Unknown	TCE	77.46	mVs	97.3	1.29
9	Unknown	Toluene	29.58	mVs	144.0	3.38
10	Unknown		2.407	mVs	254.9	

Plumbing Clogged -
to be used to interpret Analysis #15 only

Notes

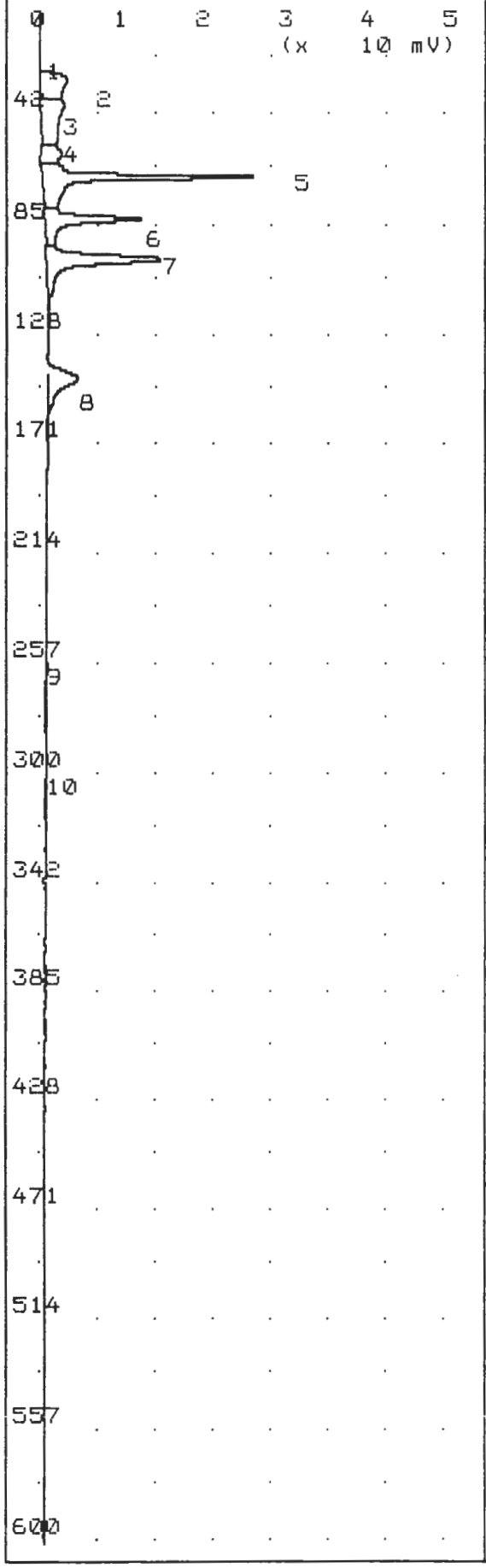
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #17 10S+ GC Function Analysis Report



Printed : Oct 9,97 11:23
Run at : Oct 9,97 11:13

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.103	mVs	22.4
2	Unknown	35.74	mVs	26.9
3	Unknown	46.52	mVs	37.4
4	Unknown	15.96	mVs	56.0
5	Unknown	88.87	mVs	64.8
6	Unknown	49.38	mVs	80.6
7	Unknown	72.90	mVs	96.2
8	Unknown	32.30	mVs	143.2
9	Unknown	2.337	mVs	254.9
10	Unknown	1.763	mVs	300.0

Notes

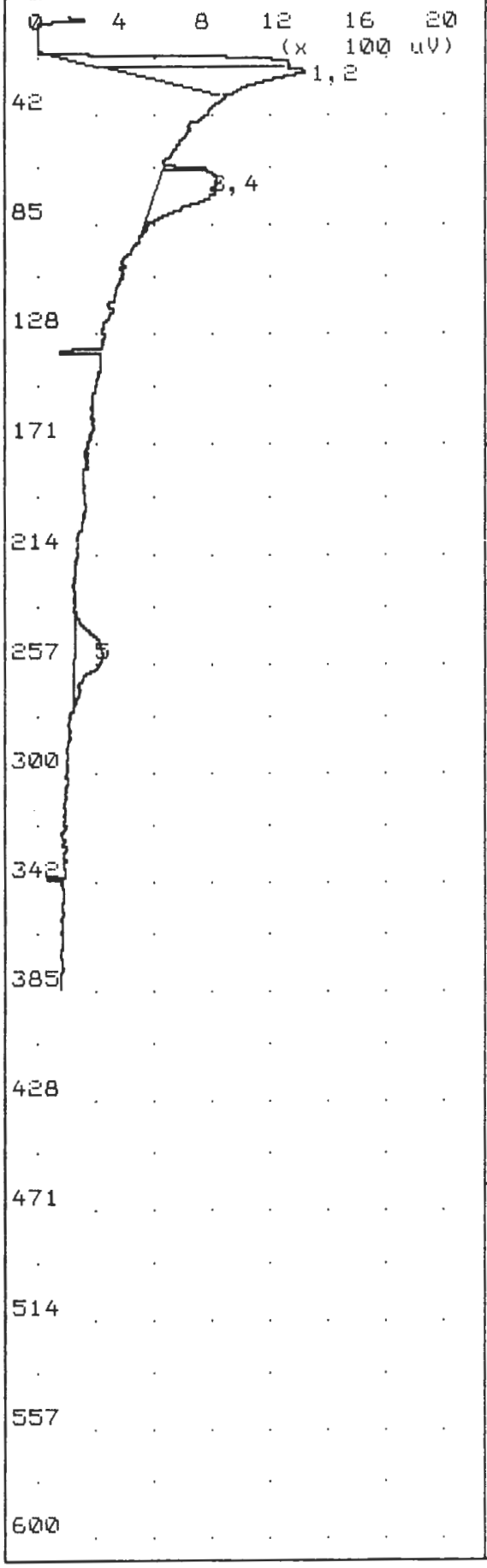
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #18 10S+ GC Function Analysis Report



Printed : Oct 9,97 11:49
Run at : Oct 9,97 11:43

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	5.137 mVs	19.0
2	Unknown	5.383 mVs	23.6
3	Unknown	0.312 mVs	61.4
4	Unknown	4.344 mVs	63.0
5	Unknown	2.327 mVs	248.2

Notes

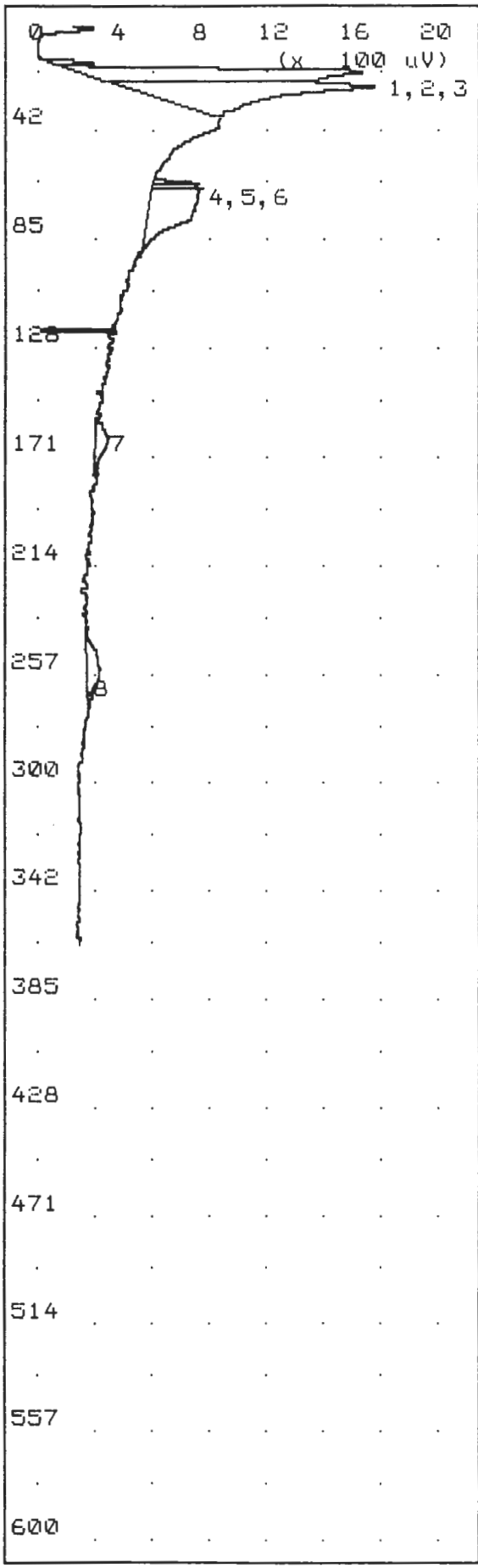
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank : Yes
Bulb Blank :

Analysis #19 10S+ GC Function Analysis Report



Printed : Oct 9,97 12:00
Run at : Oct 9,97 11:54

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.462	mVs	14.4
2	Unknown	7.101	mVs	17.6
3	Unknown	7.872	mVs	23.4
4	Unknown	0.285	mVs	61.9
5	Unknown	0.320	mVs	63.4
6	Unknown	3.702	mVs	66.4
7	Unknown	0.698	mVs	162.6
8	Unknown	1.188	mVs	253.8

Notes

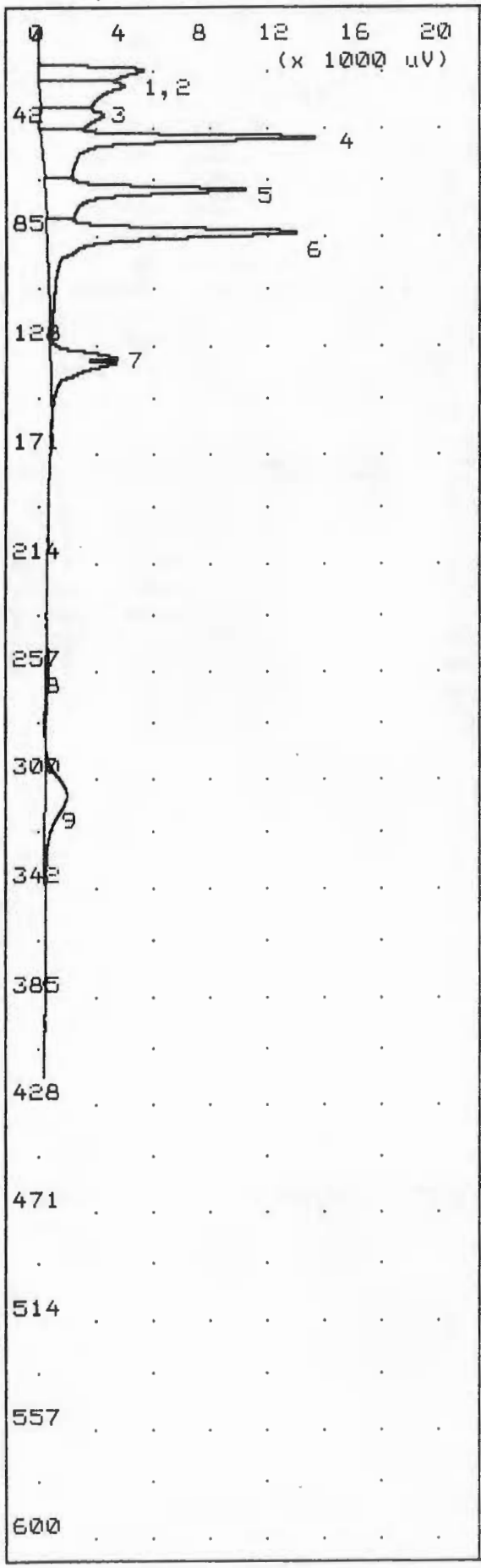
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank : Yes
Bulb Blank :

Analysis #20 10S+ GC Function Analysis Report



Printed : Oct 9,97 12:09
Run at : Oct 9,97 12:02

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.064	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	RT's
1	Unknown		29.86 mVs	17.2	
2	Unknown		36.33 mVs	23.8	
3	Unknown		20.59 mVs	34.8	
4	Unknown	cis 1,2 DCE	71.20 mVs	43.8	1.40
5	Unknown	Benzene	54.70 mVs	64.6	1.83
6	Unknown	TCE	78.32 mVs	81.3	1.28
7	Unknown	Toluene	30.04 mVs	131.4	3.33
8	Unknown		2.616 mVs	256.0	
9	Unknown	p-xylene	19.81 mVs	304.2	5.05

Notes

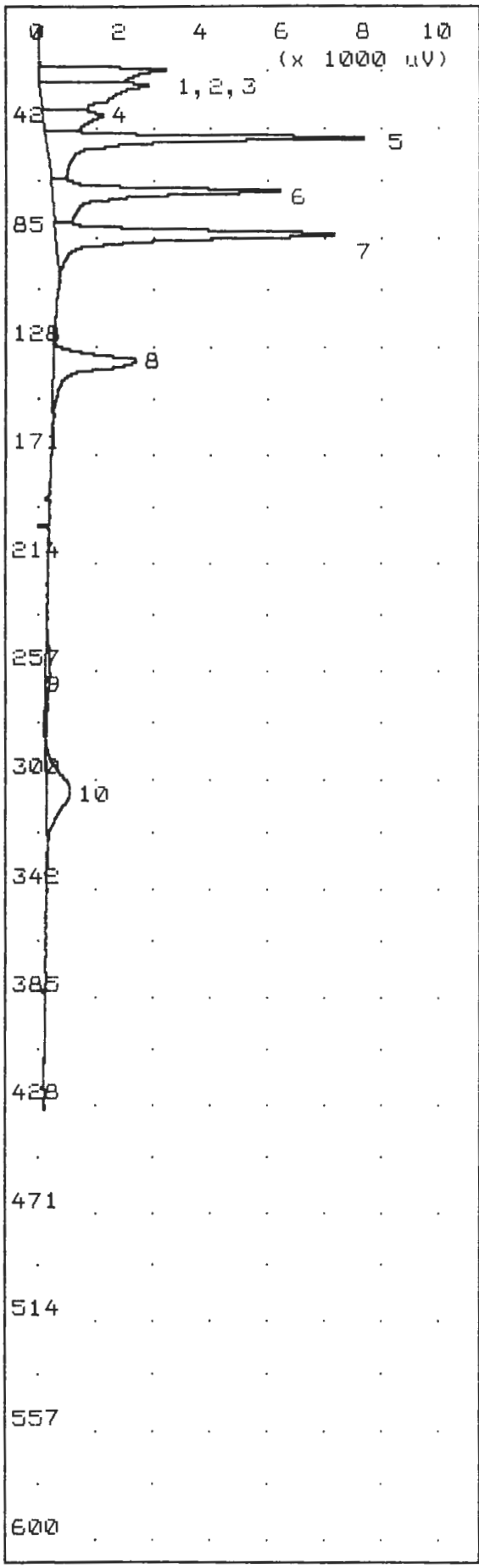
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #21 10S+ GC Function Analysis Report



Printed : Oct 9,97 12:18
Run at : Oct 9,97 12:11

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	RT's
1	Unknown		0.216 mVs	15.0	
2	Unknown		16.15 mVs	17.2	
3	Unknown		20.46 mVs	23.6	
4	Unknown		9.238 mVs	35.3	
5	Unknown	cis 1,2DCE	32.14 mVs	43.9	1.55
6	Unknown	Benzene	26.64 mVs	64.6	1.88
7	Unknown	TCE	33.95 mVs	81.6	1.47
8	Unknown	Toluene	15.10 mVs	131.4	3.31
9	Unknown		1.843 mVs	255.2	
10	Unknown	p-xylene	11.15 mVs	300.0	4.48

Notes

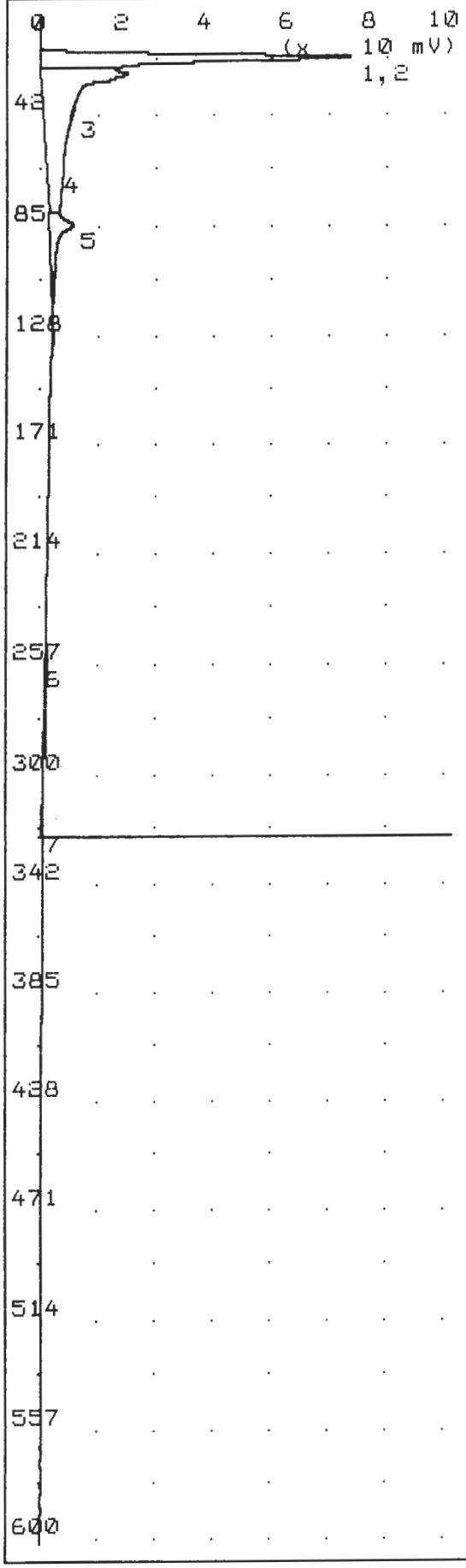
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 50 ppb
Inj. Vol. : 0.25 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #22 10S+ GC Function Analysis Report



Printed : Oct 9,97 12:31
Run at : Oct 9,97 12:21

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.080	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		296.0 mVs	17.6
2	Unknown		379.8 mVs	23.6
3	Unknown		0.619 mVs	37.7
4	Unknown		1.130 mVs	60.6
5	Unknown	TCE	75.89 mVs	82.2
6	Unknown		13.27 mVs	254.1
7	Unknown		0.000 mVs	324.2

97 ppb

769 x 3.33 = 2561

25 ppm

Notes

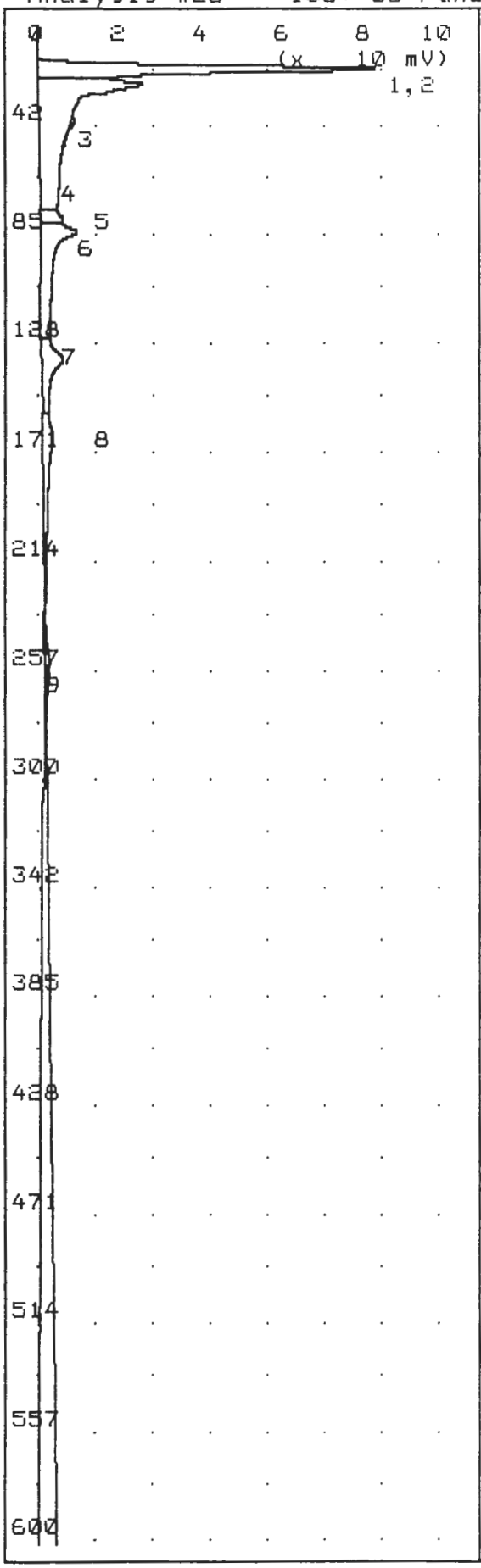
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-135
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank :
Bulb Blank :

Analysis #23 10S+ GC Function Analysis Report



Printed : Oct 9,97 12:47
Run at : Oct 9,97 12:37

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.061	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		318.2 mVs	17.6	
2	Unknown		426.3 mVs	23.8	
3	Unknown		2.540 mVs	38.0	
4	Unknown		1.589 mVs	61.0	
5	Unknown		27.18 mVs	77.2	
6	Unknown	TCE	161.0 mVs	82.1	206 ppb
7	Unknown	Toluene	82.59 mVs	132.1	275 ppb
8	Unknown		103.4 mVs	163.4	
9	Unknown		38.39 mVs	253.3	

1164 × 3.33 = 3876

4 ppm

Notes

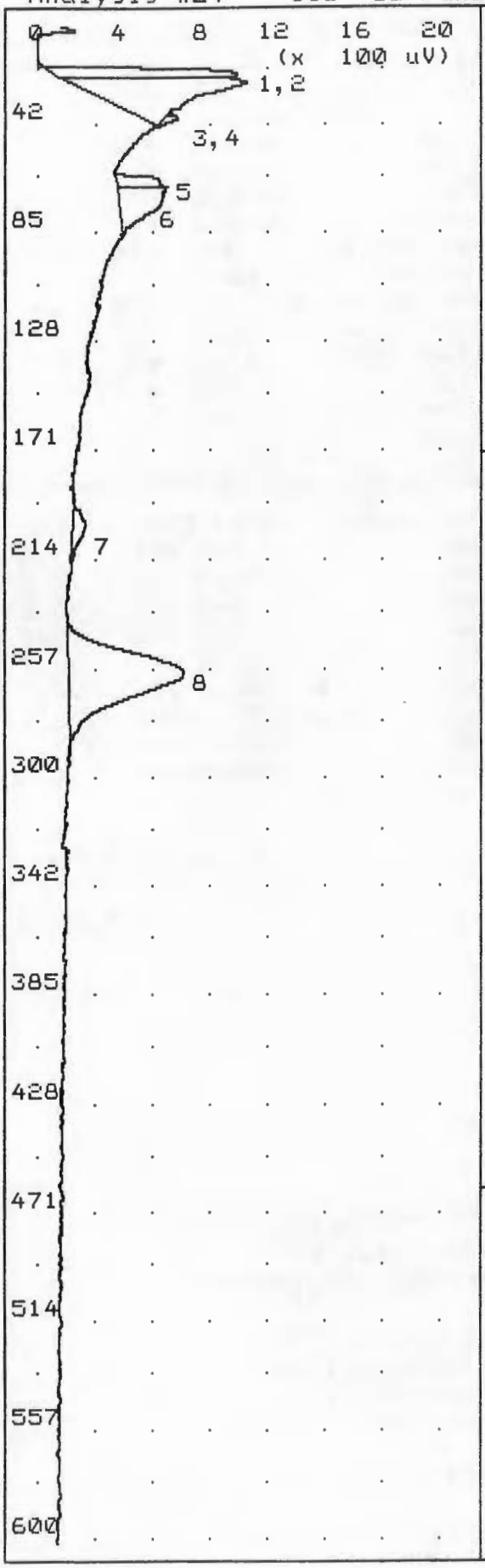
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-140
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank :
Bulb Blank :

Analysis #24 10S+ GC Function Analysis Report



Printed : Oct 9,97 13:10
Run at : Oct 9,97 13:00

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	4.512 mVs	21.2
2	Unknown	7.731 mVs	24.2
3	Unknown	0.037 mVs	36.2
4	Unknown	0.158 mVs	37.2
5	Unknown	1.036 mVs	65.3
6	Unknown	2.744 mVs	70.2
7	Unknown	0.777 mVs	197.6
8	Unknown	11.60 mVs	256.0

Notes

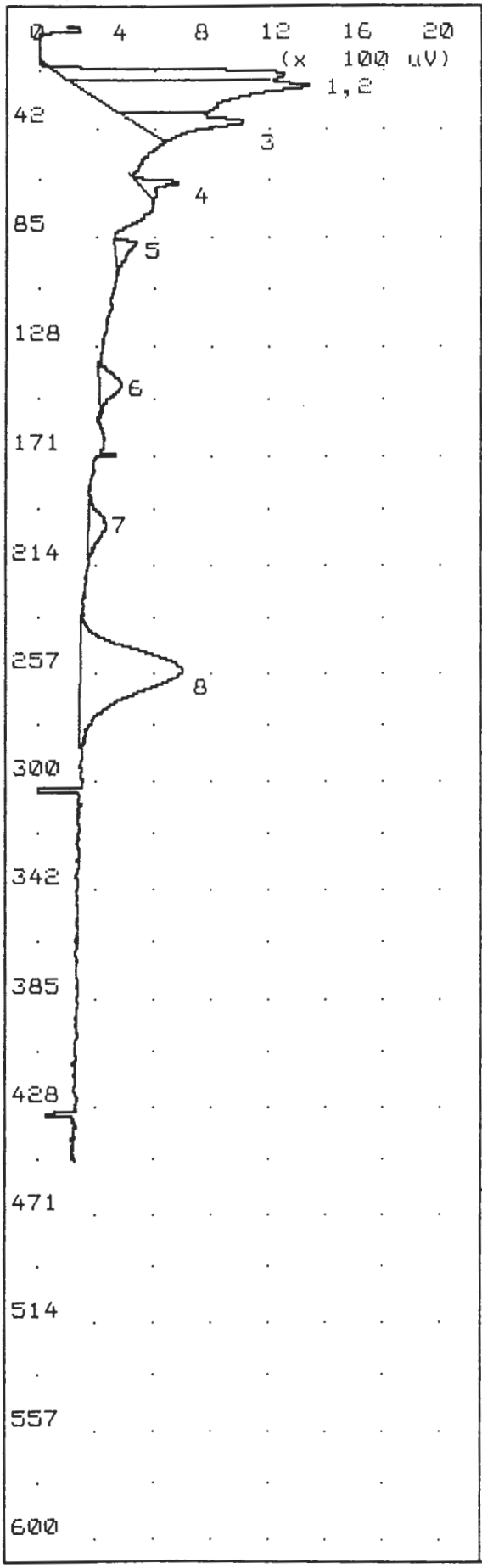
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 6

Syringe Blank : Yes
Bulb Blank :

Analysis #25 10S+ GC Function Analysis Report



Printed : Oct 9,97 13:19
Run at : Oct 9,97 13:12

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	5.696 mVs	19.0
2	Unknown	9.289 mVs	24.0
3	Unknown	3.349 mVs	37.2
4	Unknown	0.816 mVs	61.6
5	Unknown	0.764 mVs	84.4
6	Unknown	1.184 mVs	141.0
7	Unknown	0.961 mVs	194.8
8	Unknown	10.24 mVs	253.8

Notes

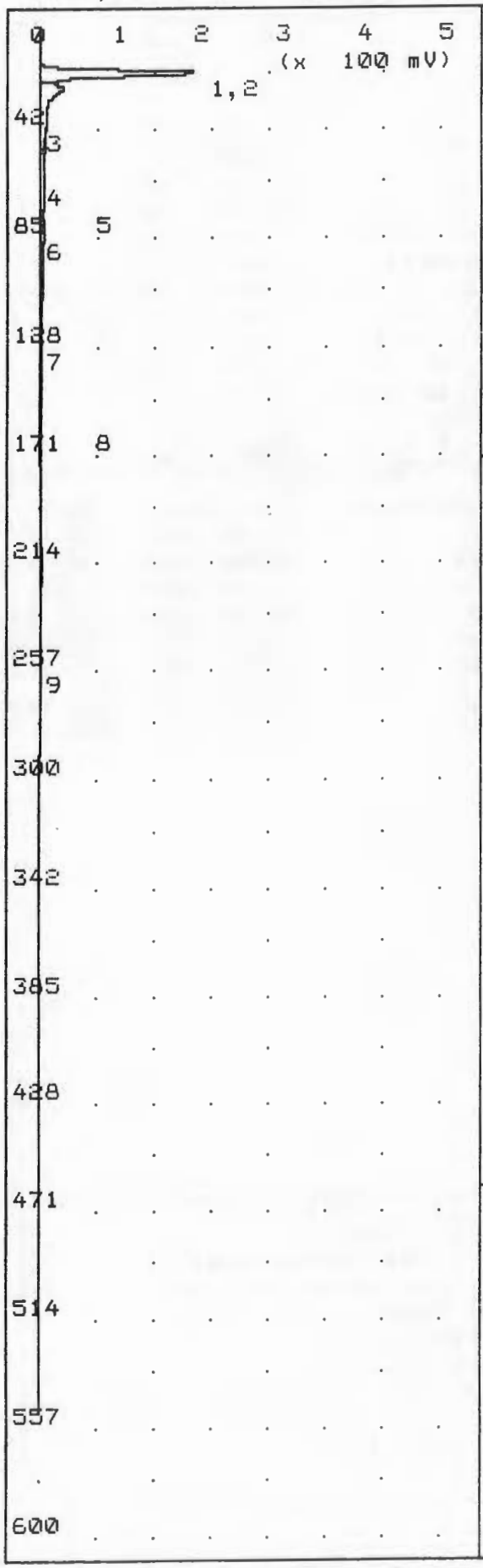
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank : Yes
Bulb Blank :

Analysis #26 10S+ GC Function Analysis Report



Printed : Oct 9,97 13:30
Run at : Oct 9,97 13:21

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.	
1	Unknown	613.1 mVs	17.6	
2	Unknown	463.9 mVs	23.9	
3	Unknown	0.446 mVs	37.5	
4	Unknown	2.063 mVs	61.0	
5	Unknown	0.406 mVs	76.8	
6	Unknown TCE	124.3 mVs	82.1	414 ppb
7	Unknown Toluene	37.50 mVs	131.8	125 ppb
8	Unknown	40.60 mVs	164.0	
9	Unknown	15.54 mVs	254.1	

1301 x 3.33 = 4332

4.5 ppm

Notes

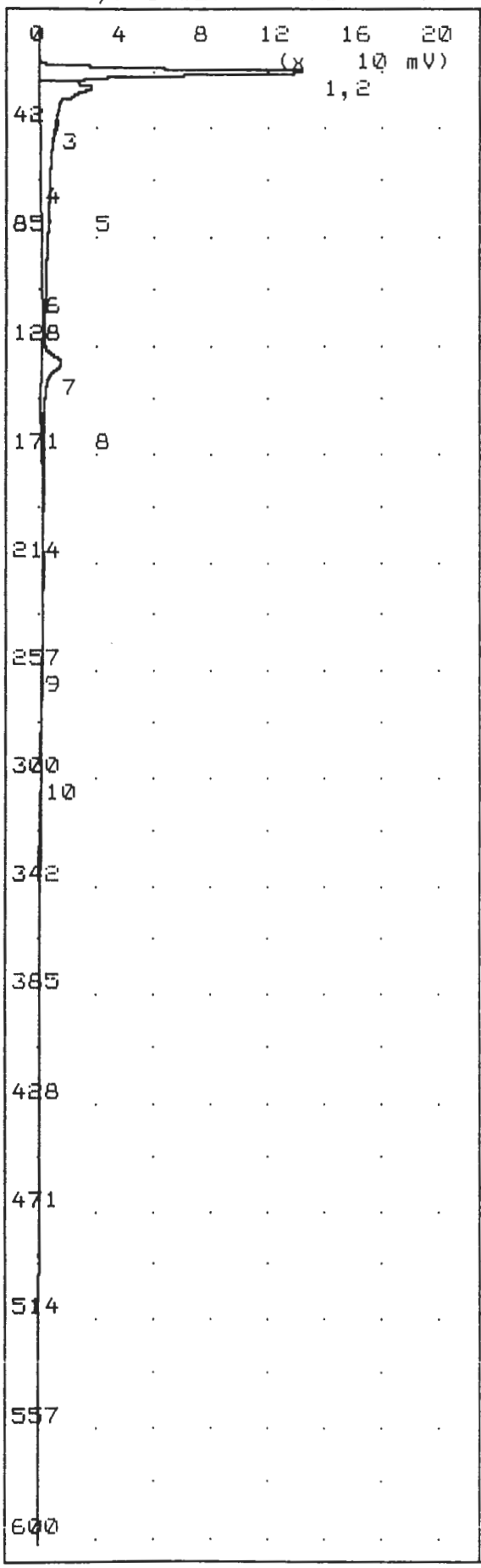
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-139
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank :
Bulb Blank :

Analysis #27 10S+ GC Function Analysis Report



Printed : Oct 9,97 13:42
Run at : Oct 9,97 13:32

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.	
1	Unknown	452.7 mVs	17.8	
2	Unknown	583.4 mVs	24.0	
3	Unknown	3.698 mVs	38.2	
4	Unknown	2.440 mVs	61.0	
5	Unknown	2.954 mVs	77.2	
6	Unknown	1.214 mVs	103.3	
7	Unknown	119.1 mVs	132.8	396 ppb
8	Unknown	50.78 mVs	163.4	
9	Unknown	10.85 mVs	254.6	
10	Unknown	16.29 mVs	301.6	82 ppb

1247 × 3.33 = 4153

4 ppm

Notes

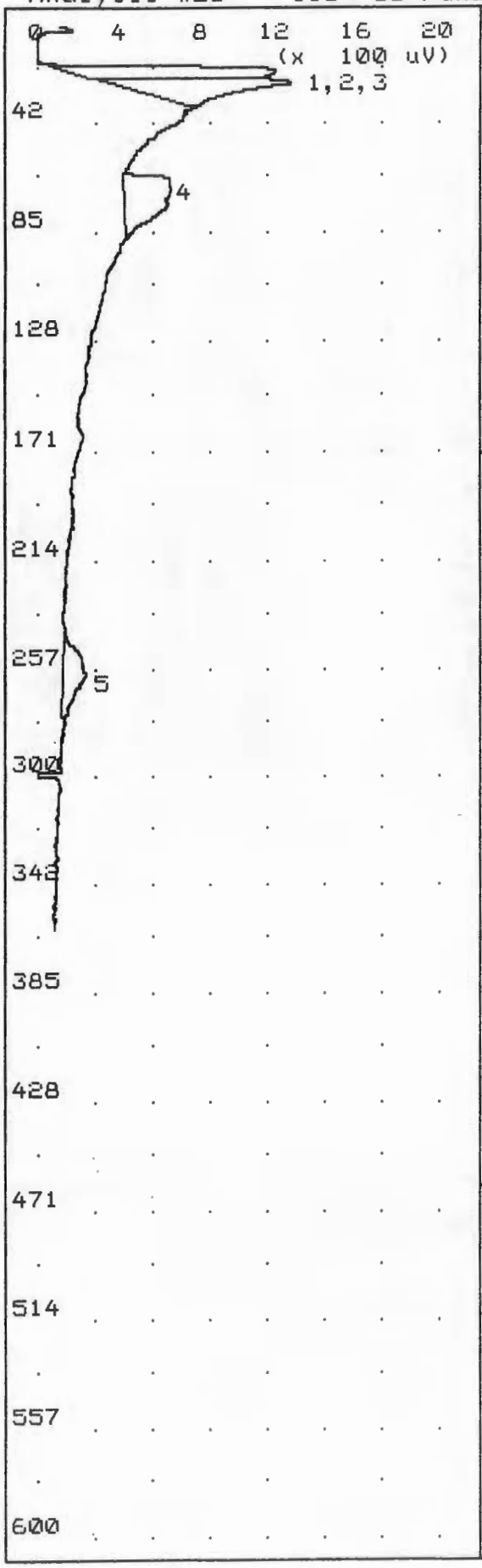
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-127
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank :
Bulb Blank :

Analysis #28 10S+ GC Function Analysis Report



Printed : Oct 9,97 13:56
Run at : Oct 9,97 13:50

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.041 mVs	15.3
2	Unknown	5.617 mVs	19.3
3	Unknown	5.120 mVs	24.1
4	Unknown	4.078 mVs	63.3
5	Unknown	2.098 mVs	255.7

Notes

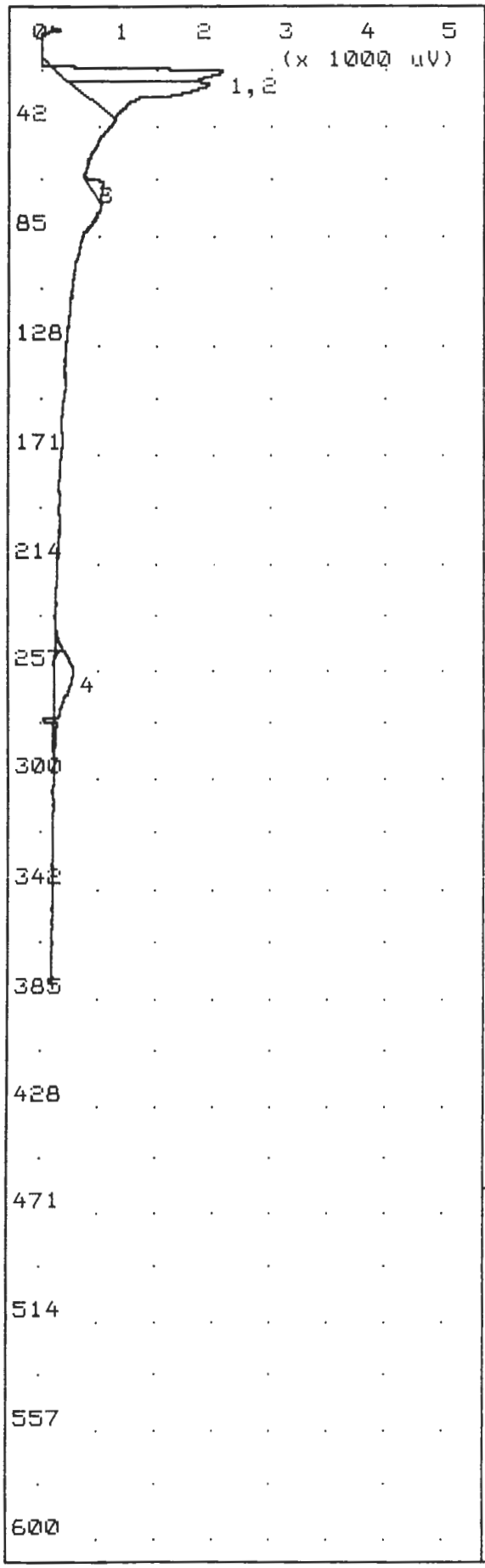
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank : Yes
Bulb Blank :

Analysis #29 10S+ GC Function Analysis Report



Printed : Oct 9,97 14:04
Run at : Oct 9,97 13:57

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	10.70	mVs	18.4
2	Unknown	11.00	mVs	23.8
3	Unknown	1.165	mVs	61.4
4	Unknown	4.443	mVs	255.7

Notes

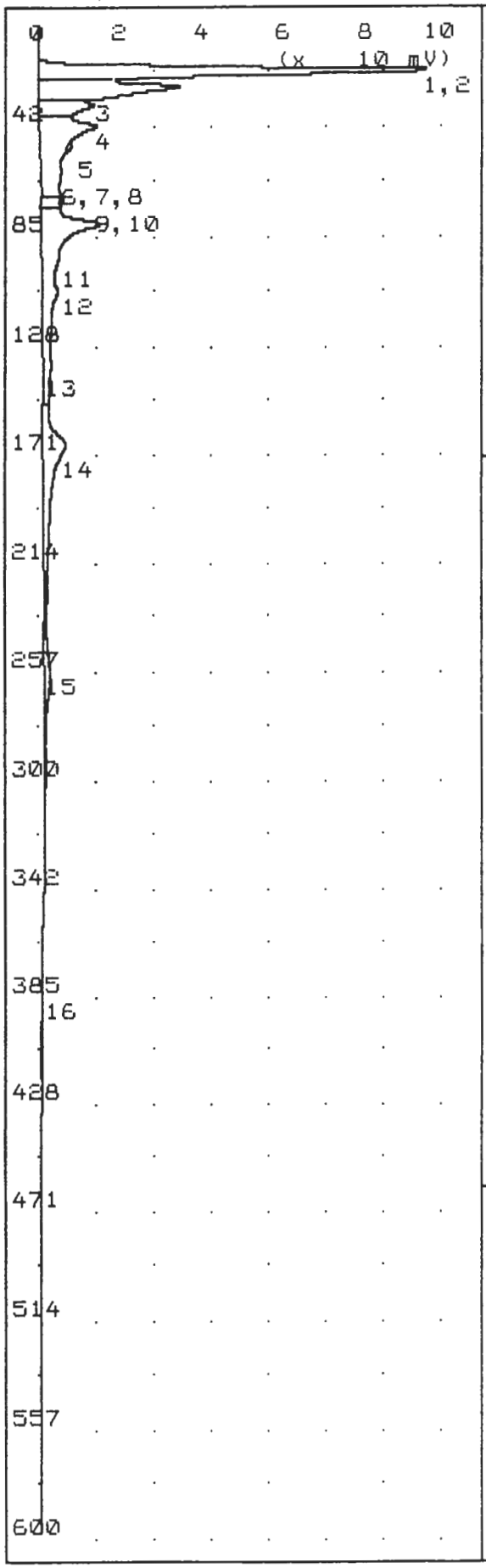
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank : Yes
Bulb Blank :

Analysis #30 10S+ GC Function Analysis Report



Printed : Oct 9,97 14:15
Run at : Oct 9,97 14:05

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		391.7 mVs	17.4
2	Unknown		186.3 mVs	24.4
3	Unknown		69.49 mVs	31.5
4	Unknown		218.9 mVs	39.7
5	Unknown		3.034 mVs	47.4
6	Unknown		0.846 mVs	57.4
7	Unknown		0.377 mVs	60.4
8	Unknown		0.566 mVs	66.4
9	Unknown		22.70 mVs	69.4
10	Unknown		281.6 mVs	77.8
11	Unknown		0.939 mVs	90.5
12	Unknown		5.865 mVs	104.0
13	Unknown	Toluene	2.484 mVs	132.8
14	Unknown		171.5 mVs	164.6
15	Unknown		41.36 mVs	255.7
16	Unknown		2.427 mVs	381.0

8 ppb

Re sample of SG12-169. 10/8 #41
GC plumbing may of been clogged so sampling was repeated.
Results are a fraction of the original sample. Disregard this analysis.

Notes

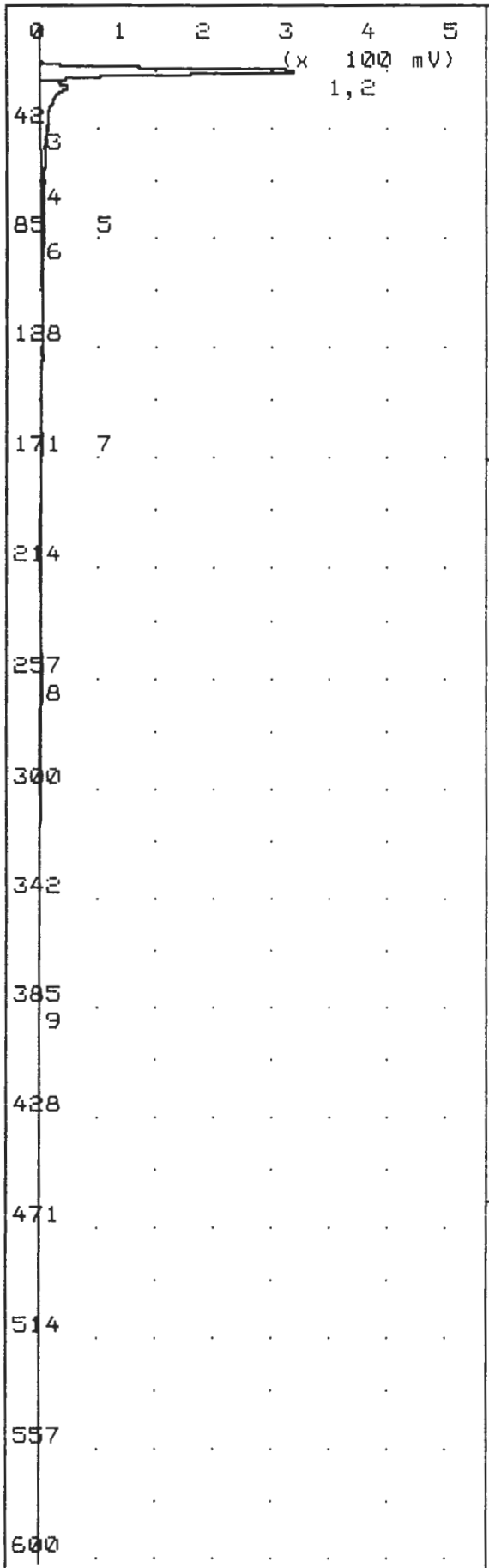
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-169R
OVM Reading : 0.3 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank :
Bulb Blank :

Analysis #31 10S+ GC Function Analysis Report 97oc09be.gc



Printed : Oct 9,97 14:30
Run at : Oct 9,97 14:17

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown	?	985.8 mVs	17.9	3 ppm
2	Unknown		593.6 mVs	24.1	
3	Unknown		5.448 mVs	38.8	
4	Unknown		1.788 mVs	60.8	
5	Unknown		3.059 mVs	76.9	
6	Unknown	TCE	4.240 mVs	82.4	6 ppb
7	Unknown		17.31 mVs	163.0	
8	Unknown		60.78 mVs	253.8	
9	Unknown		3.935 mVs	383.0	

1679 x 3.33 = 5591

6 ppm

Notes

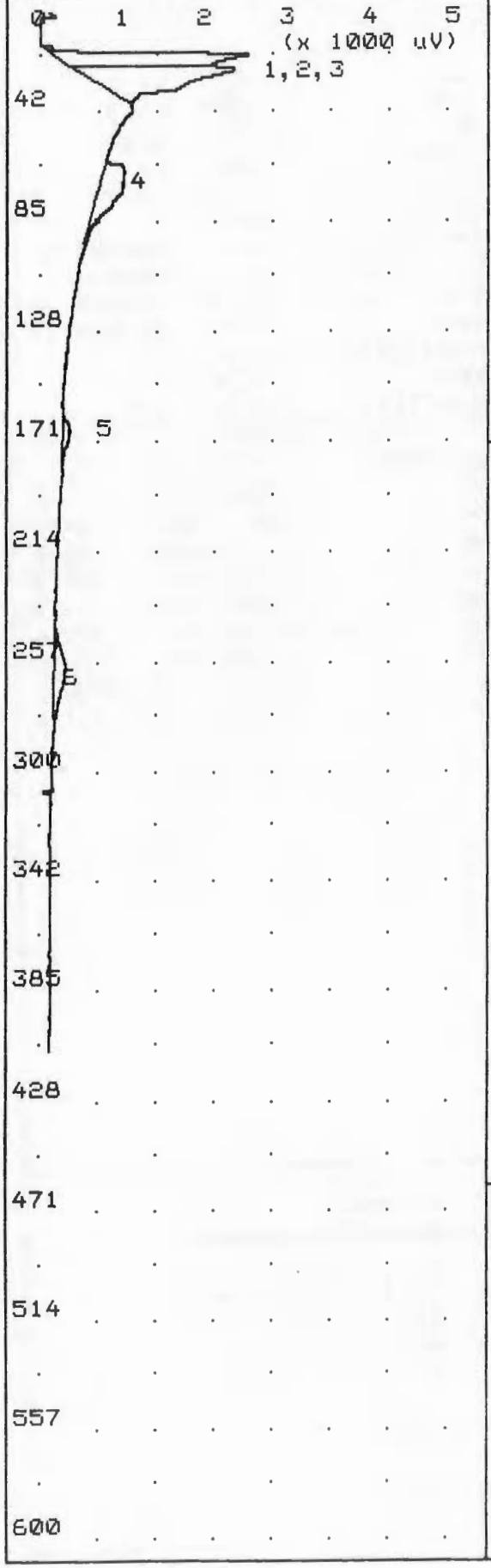
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-117
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank :
Bulb Blank :

Analysis #32 10S+ GC Function Analysis Report



Printed : Oct 9,97 14:40
Run at : Oct 9,97 14:33

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.308 mVs	15.2
2	Unknown	11.70 mVs	18.2
3	Unknown	14.25 mVs	24.2
4	Unknown	5.289 mVs	62.3
5	Unknown	0.909 mVs	163.4
6	Unknown	2.276 mVs	255.7

Notes

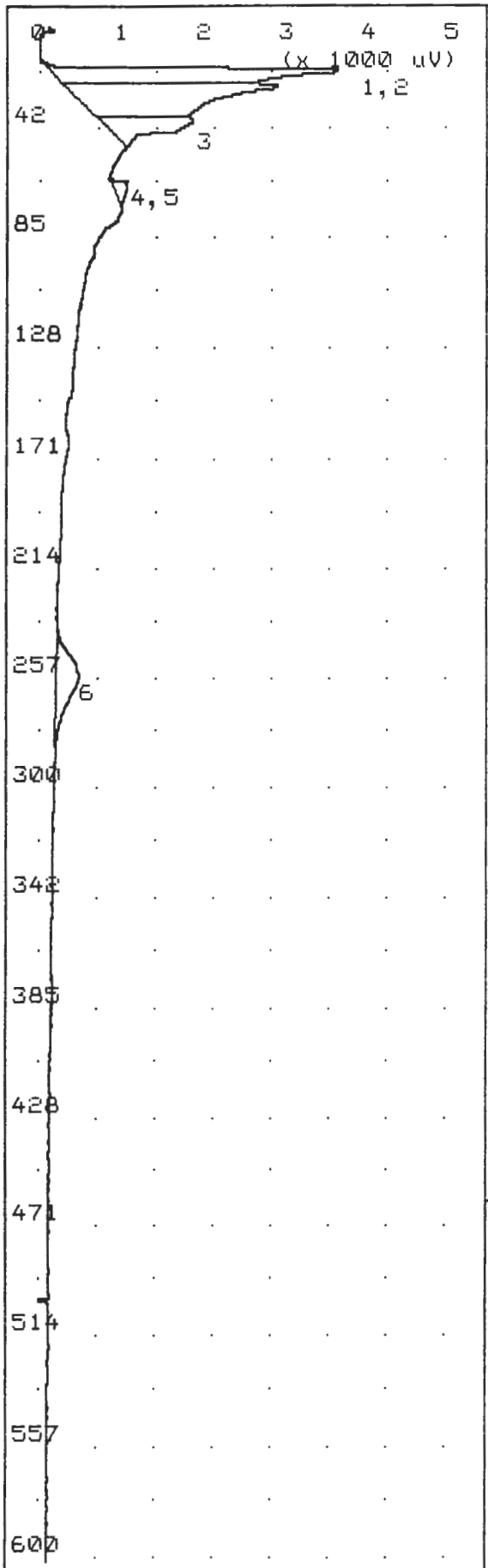
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank : Yes
Bulb Blank :

Analysis #33 10S+ GC Function Analysis Report



Printed : Oct 9,97 14:52
Run at : Oct 9,97 14:42

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	19.11 mVs	17.6
2	Unknown	23.76 mVs	23.8
3	Unknown	7.077 mVs	37.1
4	Unknown	0.118 mVs	61.2
5	Unknown	0.983 mVs	63.2
6	Unknown	5.775 mVs	253.6

Notes

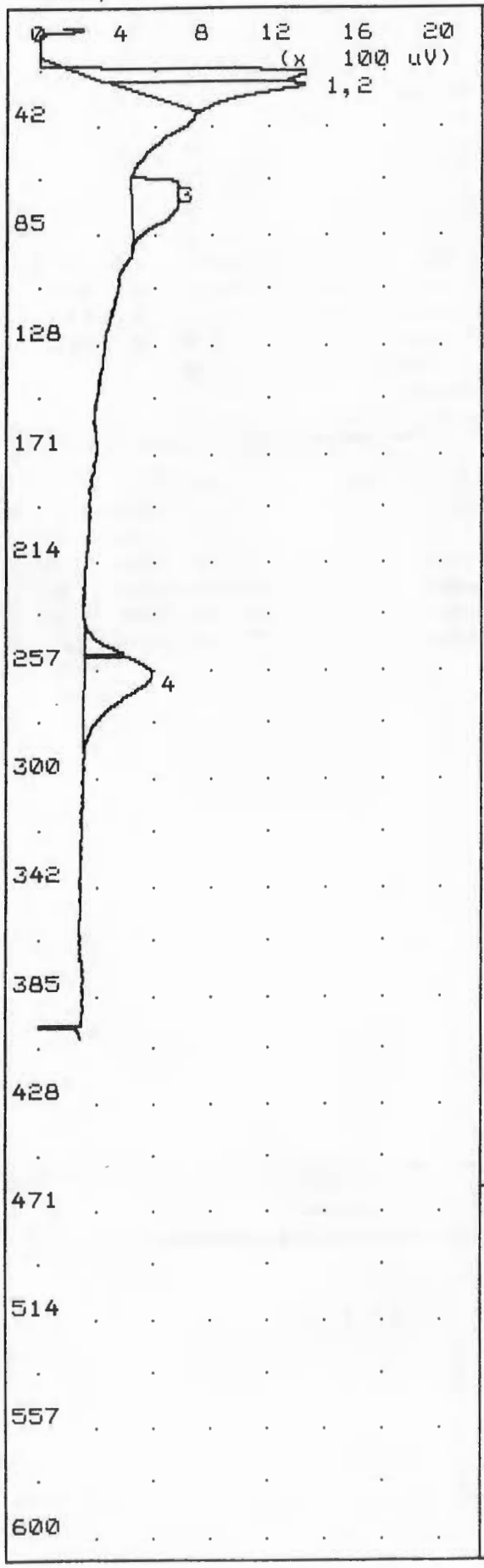
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank : Yes
Bulb Blank :

Analysis #34 10S+ GC Function Analysis Report



Printed : Oct 9,97 15:03
Run at : Oct 9,97 14:57

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	34/35	C
Amb Temp	35 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	6.008 mVs	18.8
2	Unknown	5.536 mVs	23.8
3	Unknown	4.497 mVs	61.8
4	Unknown	6.921 mVs	256.2

Notes

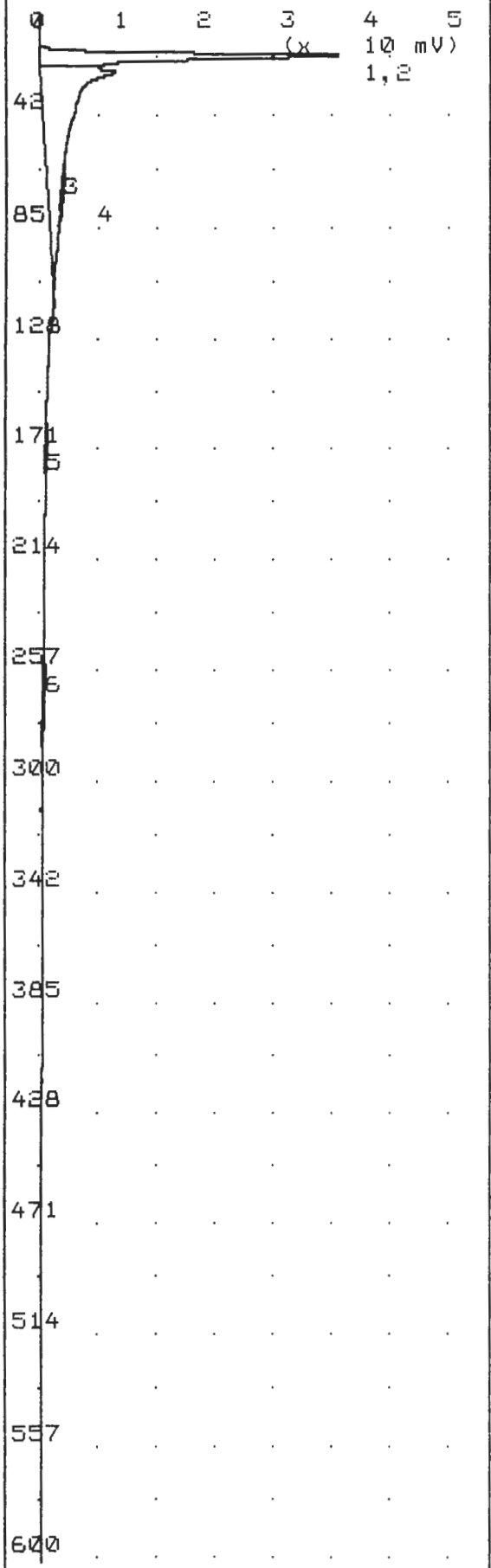
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank : Yes
Bulb Blank :

Analysis #35 10S+ GC Function Analysis Report



Printed : Oct 9,97 15:16
Run at : Oct 9,97 15:06

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	123.7 mVs	17.6
2	Unknown	212.4 mVs	23.9
3	Unknown	3.621 mVs	61.2
4	Unknown	1.084 mVs	76.2
5	Unknown	1.339 mVs	165.4
6	Unknown	4.032 mVs	255.7

Notes

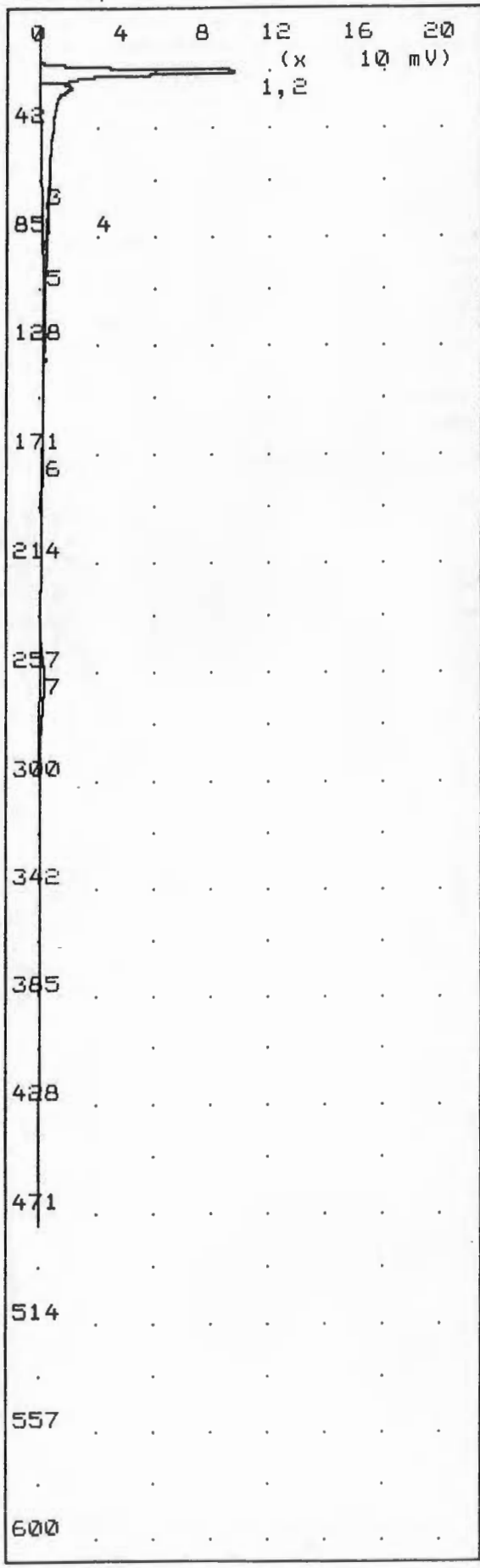
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : Ambient Air
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank :
Bulb Blank :

Analysis #36 10S+ GC Function Analysis Report



Printed : Oct 9,97 15:28
Run at : Oct 9,97 15:20

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	323.2 mVs	17.9
2	Unknown	377.6 mVs	24.2
3	Unknown	2.803 mVs	61.3
4	Unknown	5.213 mVs	77.3
5	Unknown	1.073 mVs	91.3
6	Unknown	3.679 mVs	165.0
7	Unknown	47.09 mVs	256.8

Notes

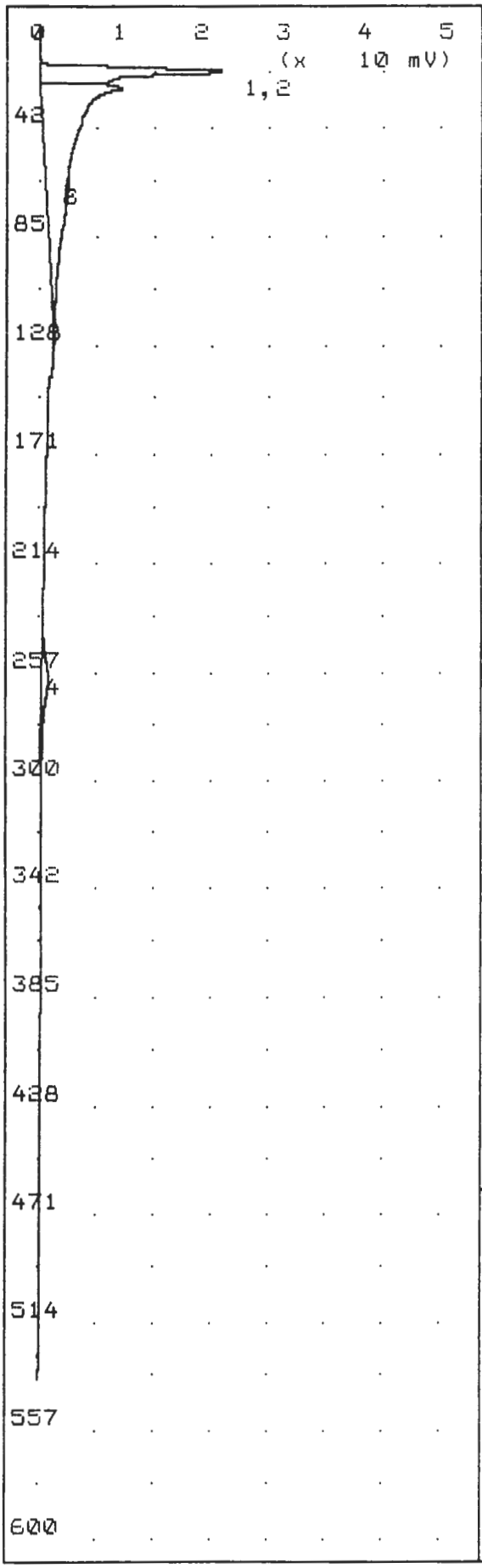
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : Rod Blank
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank :
Bulb Blank :

Analysis #37 10S+ GC Function Analysis Report



Printed : Oct 9,97 15:38
Run at : Oct 9,97 15:29

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	103.0 mVs	17.4
2	Unknown	272.6 mVs	24.2
3	Unknown	1.074 mVs	60.8
4	Unknown	13.36 mVs	256.2

288 × 3.33 = 959

1 ppm

Notes

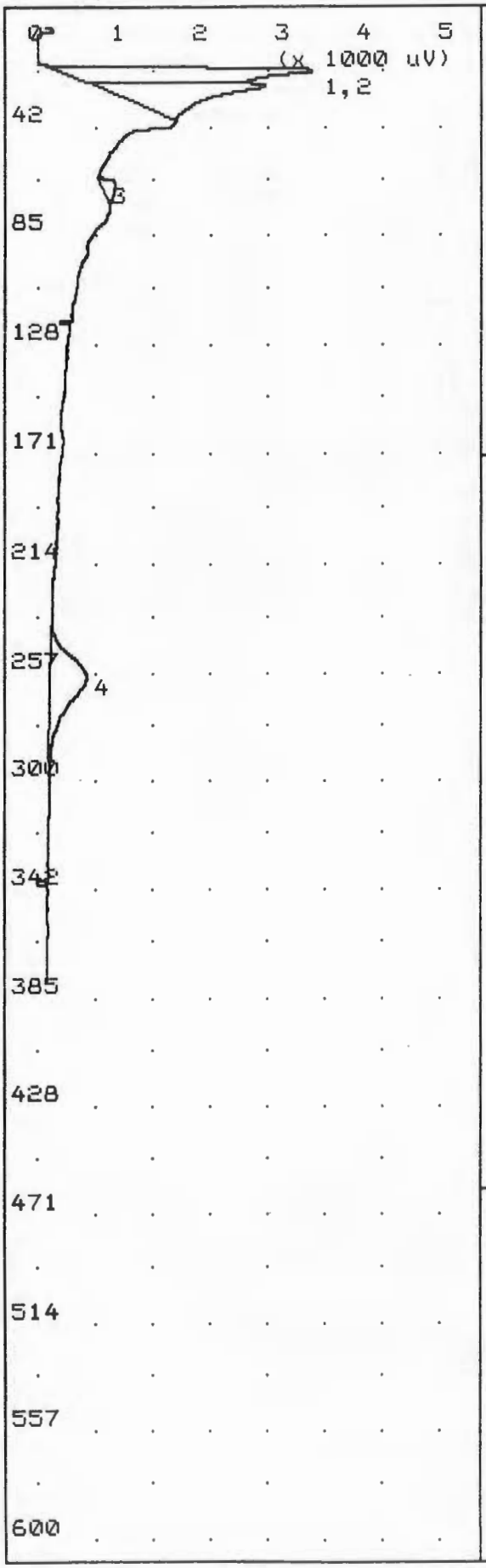
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-170
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank :
Bulb Blank :

Analysis #38 10S+ GC Function Analysis Report



Printed : Oct 9,97 15:47
Run at : Oct 9,97 15:41

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	16.16 mVs	18.1
2	Unknown	14.23 mVs	24.0
3	Unknown	1.227 mVs	62.0
4	Unknown	9.511 mVs	256.5

Notes

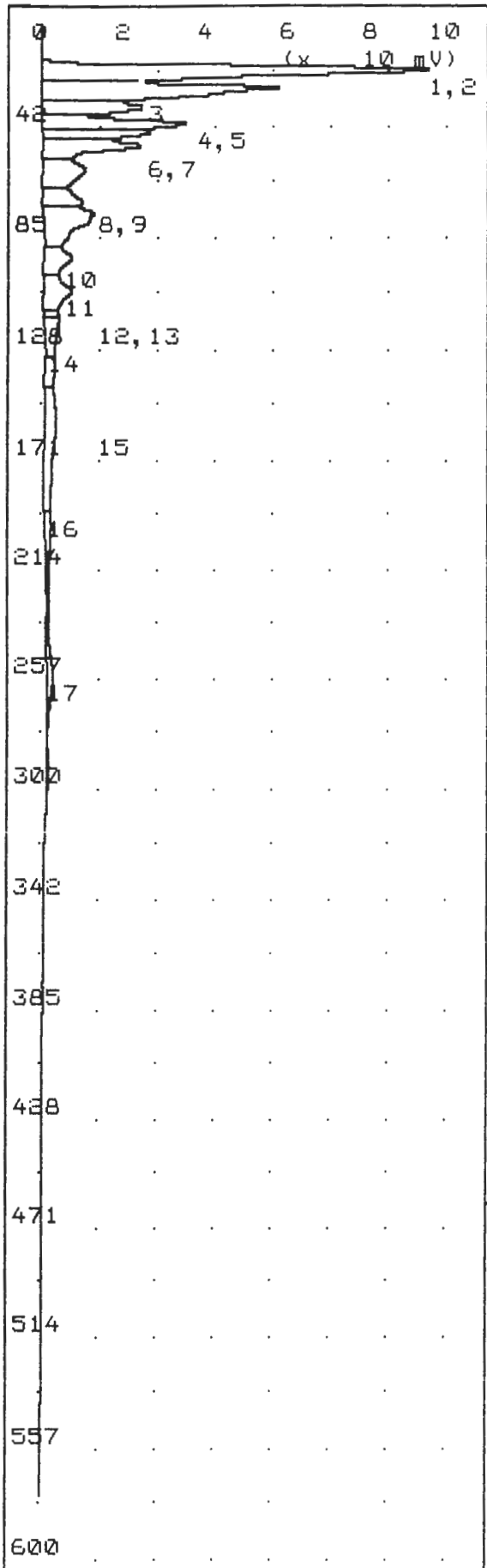
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank : Yes
Bulb Blank :

Analysis #39 10S+ GC Function Analysis Report



Printed : Oct 9,97 16:00
Run at : Oct 9,97 15:50

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.
1	Unknown		452.3 mVs	17.2
2	Unknown		311.3 mVs	24.3
3	Unknown		109.9 mVs	32.1
4	Unknown		141.5 mVs	38.8
5	Unknown		90.24 mVs	42.1
6	Unknown		120.6 mVs	47.3
7	Unknown		89.32 mVs	56.9
8	Unknown		58.92 mVs	68.8
9	Unknown		137.8 mVs	73.6
10	Unknown		57.63 mVs	90.6
11	Unknown		66.57 mVs	103.2
12	Unknown		9.874 mVs	114.2
13	Unknown		44.39 mVs	117.0
14	Unknown	Toluene	27.75 mVs	131.6
15	Unknown		96.33 mVs	156.8
16	Unknown		37.70 mVs	193.8
17	Unknown		45.07 mVs	253.0

93 ppb

1905 × 3.33 = 6344

6.5 ppm

Notes

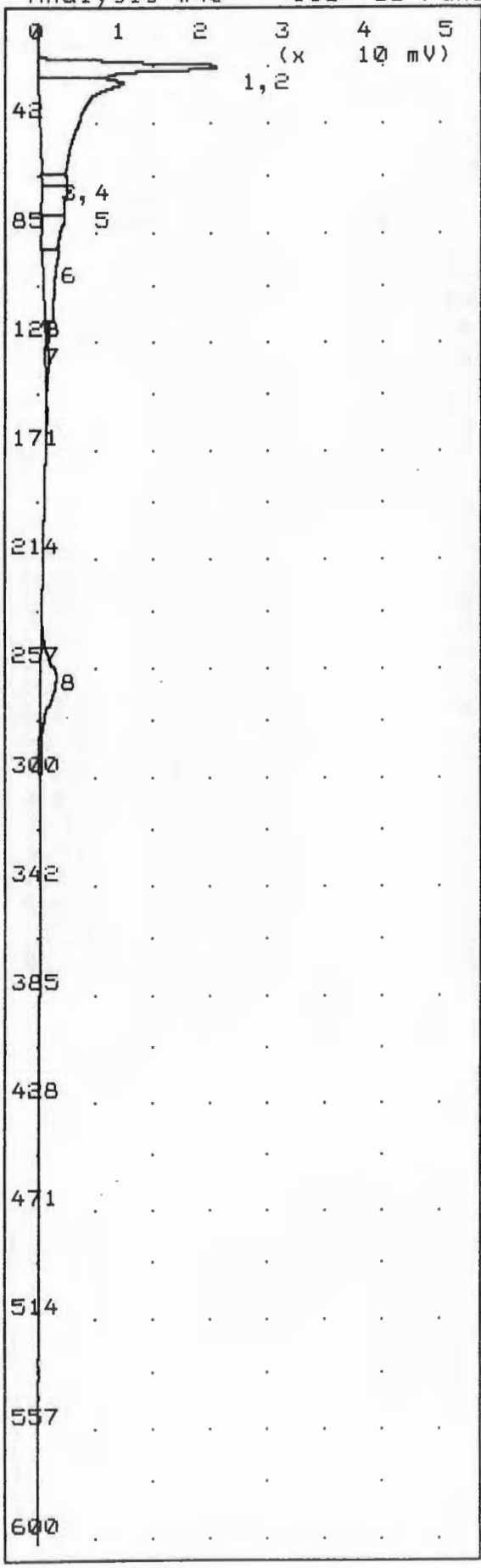
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-168
OVM Reading : 0.1 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank :
Bulb Blank :

Analysis #40 10S+ GC Function Analysis Report



Printed : Oct 9,97 16:11
Run at : Oct 9,97 16:01

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	34/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	108.0 mVs	17.5
2	Unknown	197.7 mVs	24.3
3	Unknown	13.44 mVs	61.0
4	Unknown	35.64 mVs	66.1
5	Unknown	30.28 mVs	77.8
6	Unknown	44.53 mVs	91.7
7	Unknown	8.280 mVs	132.1
8	Unknown	37.53 mVs	257.6

Notes

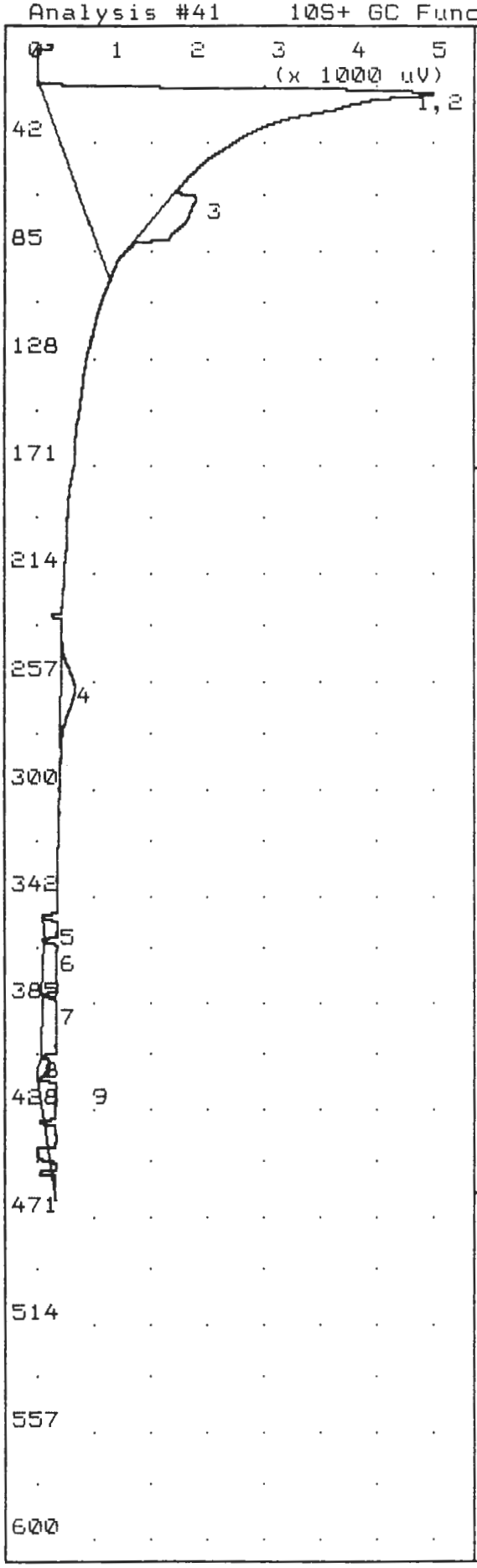
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-168Dup
OVM Reading : 0.1 IU
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 7

Syringe Blank :
Bulb Blank :

Analysis #41 10S+ GC Function Analysis Report



Printed : Oct 9,97 16:44
Run at : Oct 9,97 16:36

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	35	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.142 mVs	14.1
2	Unknown	131.1 mVs	21.0
3	Unknown	7.359 mVs	61.5
4	Unknown	3.343 mVs	258.9
5	Unknown	1.221 mVs	351.3
6	Unknown	3.340 mVs	360.3
7	Unknown	3.847 mVs	384.3
8	Unknown	1.157 mVs	406.3
9	Unknown	5.698 mVs	414.3

Notes

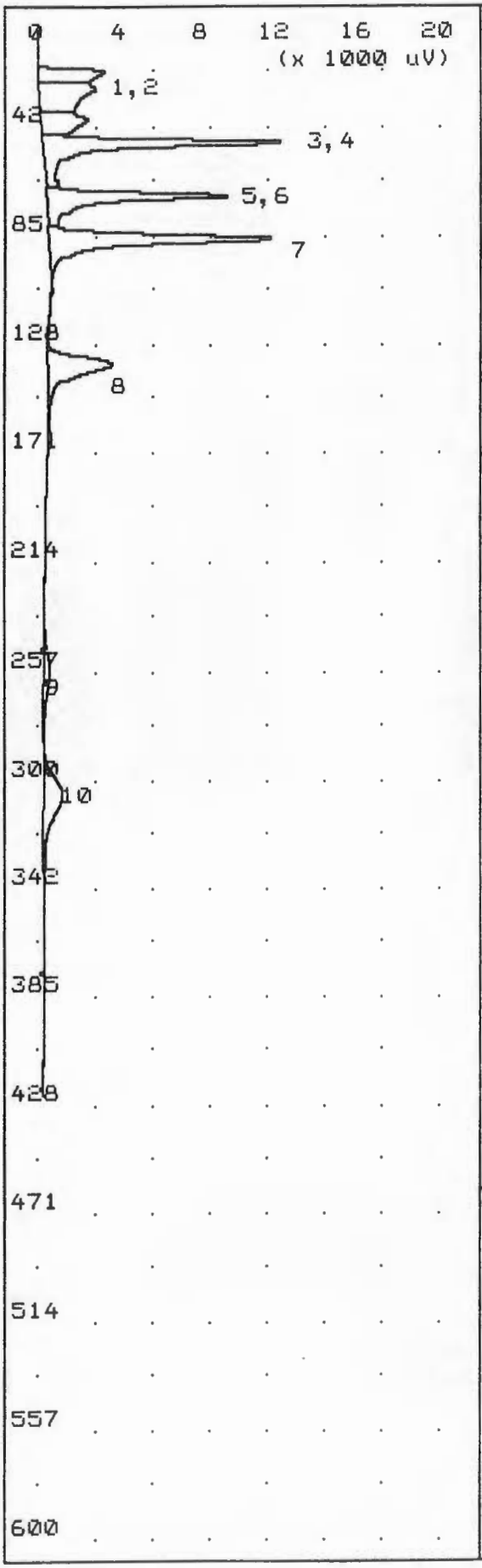
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank : Yes
Bulb Blank :

Analysis #42 10S+ GC Function Analysis Report



Printed : Oct 9,97 16:54
Run at : Oct 9,97 16:47

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	RF's
1	Unknown		18.78 mVs	18.3	
2	Unknown		25.55 mVs	24.9	
3	Unknown		15.12 mVs	36.8	
4	Unknown	DCE	51.78 mVs	46.2	
5	Unknown		0.288 mVs	61.7	
6	Unknown	Benzene	40.04 mVs	67.0	2.50
7	Unknown	TCE	56.64 mVs	83.7	1.76
8	Unknown	Toluene	27.43 mVs	133.3	3.65
9	Unknown		4.822 mVs	253.6	
10	Unknown	p-xylene	16.31 mVs	302.6	

Std Run after cleaning Plumbing

Notes

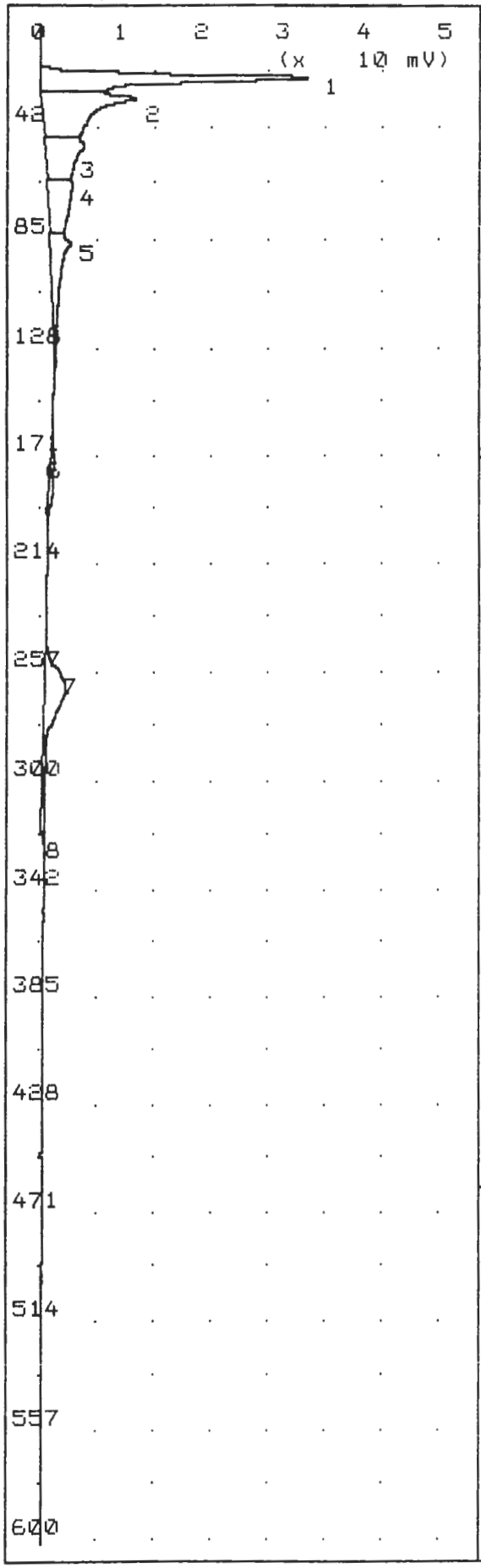
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #43 10S+ GC Function Analysis Report



Printed : Oct 9,97 17:07
Run at : Oct 9,97 16:57

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	34	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	157.3 mVs	20.5
2	Unknown	124.0 mVs	28.6
3	Unknown	62.64 mVs	47.1
4	Unknown	55.18 mVs	61.1
5	Unknown	49.76 mVs	84.5
6	Unknown	8.803 mVs	170.4
7	Unknown	65.94 mVs	260.5
8	Unknown	1.559 mVs	319.4

Notes

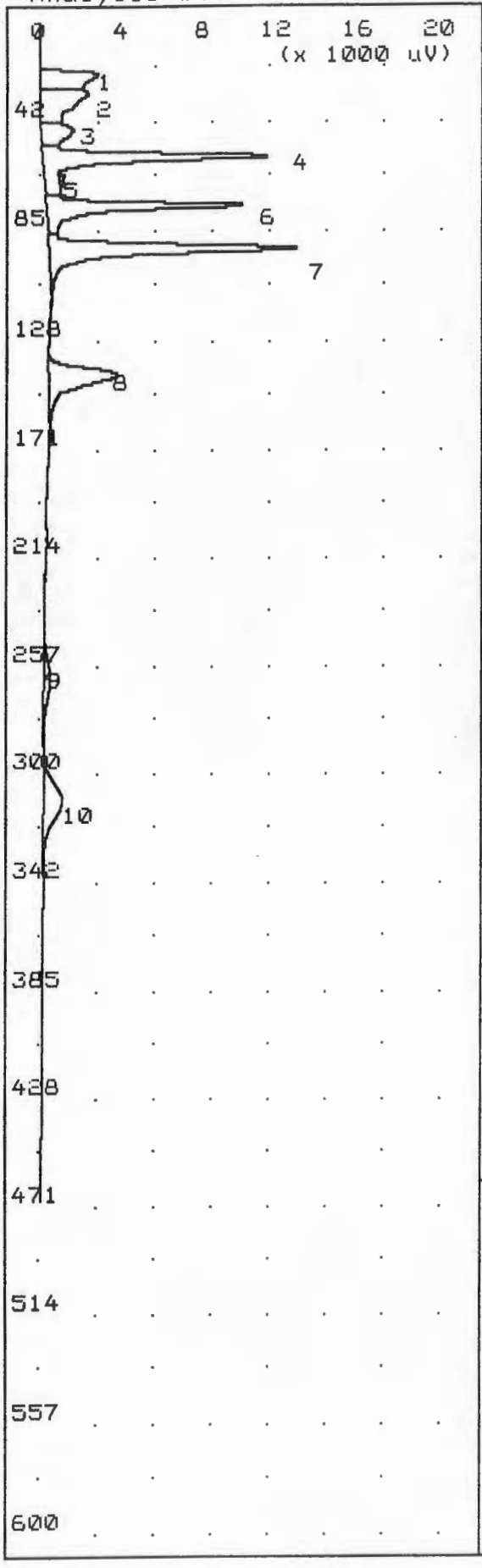
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-158
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank :
Bulb Blank :

Analysis #44 10S+ GC Function Analysis Report



Printed : Oct 9,97 17:21
Run at : Oct 9,97 17:13

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	14.0	ml/min
Backflush Flow	14.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	21.29 mVs	20.6
2	Unknown	24.63 mVs	28.8
3	Unknown	12.36 mVs	43.5
4	Unknown	51.38 mVs	53.6
5	Unknown	1.357 mVs	61.2
6	Unknown	40.02 mVs	73.0
7	Unknown	58.44 mVs	89.6
8	Unknown	28.40 mVs	139.2
9	Unknown	5.754 mVs	257.8
10	Unknown	15.53 mVs	308.0

RT's don't seem right - clean plumbing again - flows not balanced

Notes

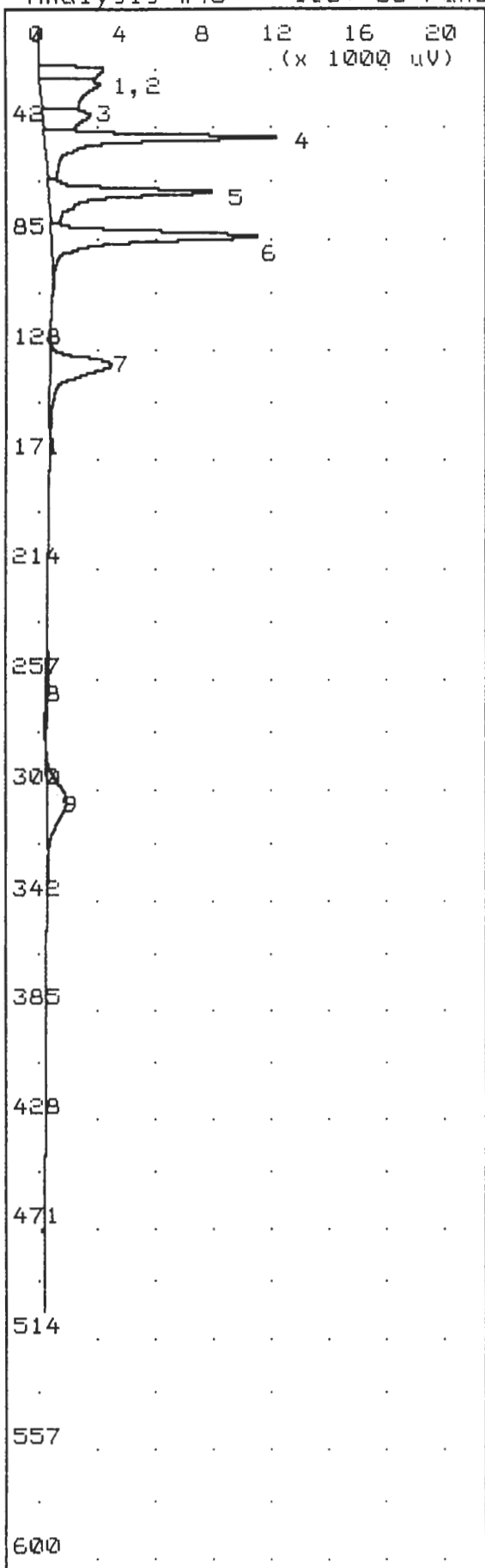
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #45 10S+ GC Function Analysis Report



Printed : Oct 9,97 17:58
Run at : Oct 9,97 17:50

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.	RF
1	Unknown		17.96	mVs	17.8	
2	Unknown		25.31	mVs	23.6	
3	Unknown		15.20	mVs	35.2	
4	Unknown	cis 1,2 DCE	47.72	mVs	44.0	2.1
5	Unknown	Benzene	38.12	mVs	64.8	2.62
6	Unknown	TCE	51.26	mVs	81.6	1.95
7	Unknown	Toluene	25.58	mVs	131.4	3.9
8	Unknown		2.530	mVs	250.9	
9	Unknown	p-xylene	18.15	mVs	301.3	5.51

Notes

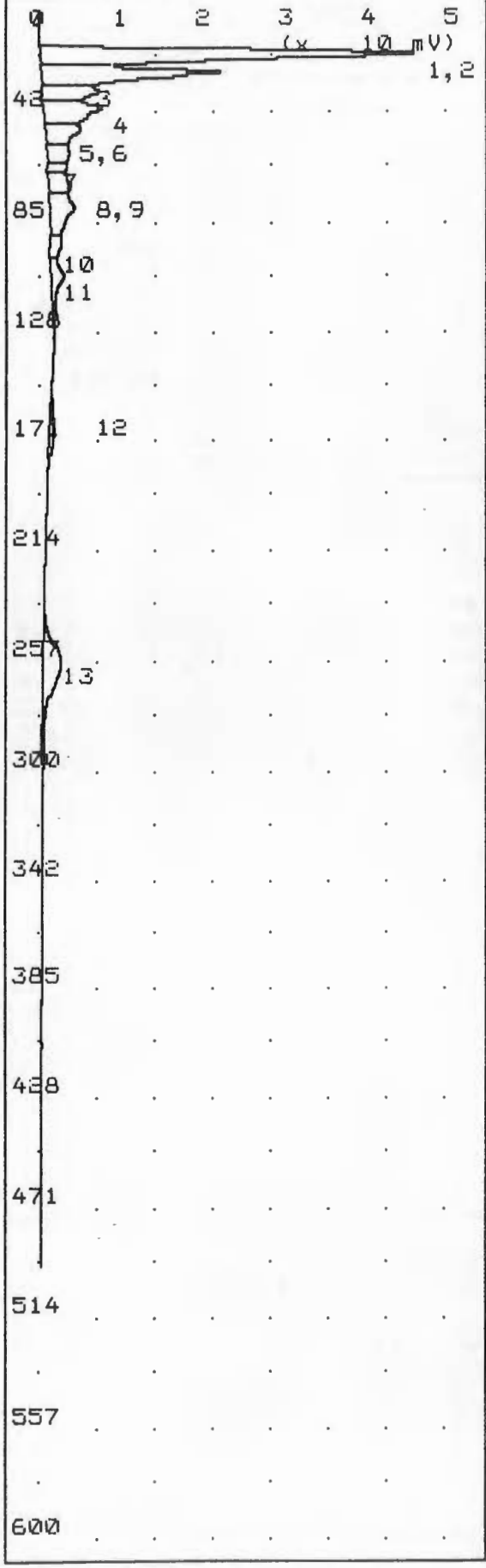
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #46 10S+ GC Function Analysis Report



Printed : Oct 9,97 18:08
Run at : Oct 9,97 18:00

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	210.4 mVs	17.1
2	Unknown	104.5 mVs	24.1
3	Unknown	34.98 mVs	31.8
4	Unknown	52.39 mVs	38.6
5	Unknown	29.13 mVs	46.9
6	Unknown	18.27 mVs	56.6
7	Unknown	9.033 mVs	60.6
8	Unknown	19.62 mVs	68.8
9	Unknown	37.07 mVs	77.0
10	Unknown	10.59 mVs	90.6
11	Unknown	18.57 mVs	103.3
12	Unknown	8.226 mVs	163.0
13	Unknown	41.42 mVs	254.9

600 x 4.37 = 2622

3ppm

Notes

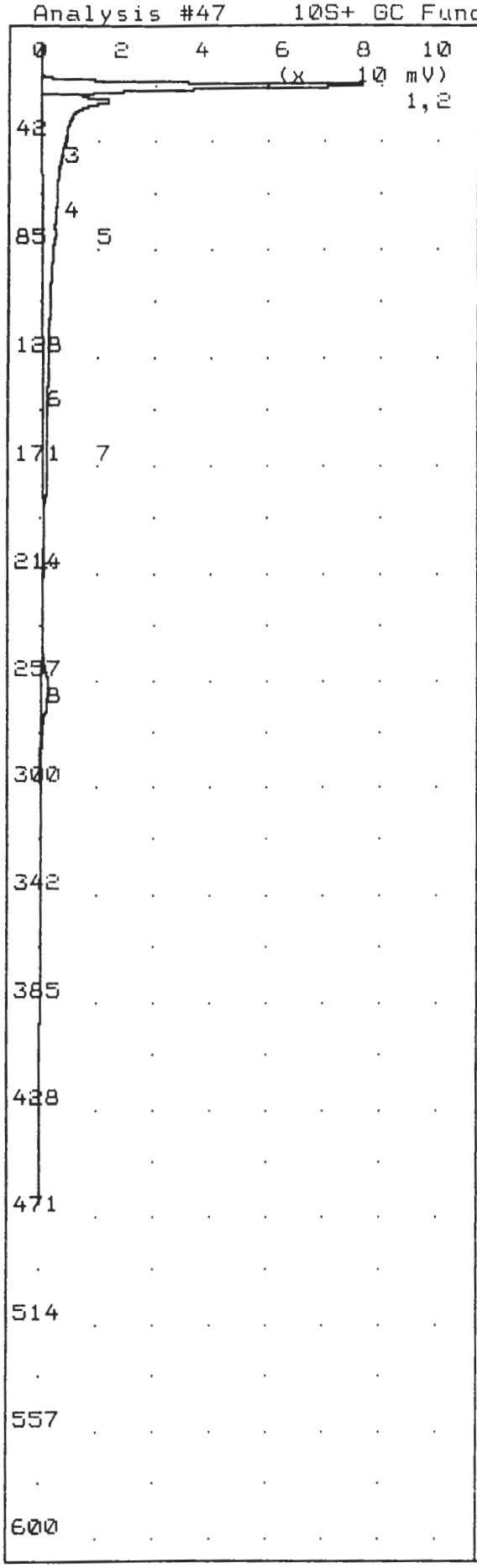
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-159
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank :
Bulb Blank :

Analysis #47 10S+ GC Function Analysis Report



Printed : Oct 9,97 18:17
Run at : Oct 9,97 18:09

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		261.0 mVs	17.7	
2	Unknown		512.0 mVs	24.0	
3	Unknown		1.705 mVs	38.8	
4	Unknown		0.776 mVs	60.9	
5	Unknown		1.221 mVs	76.9	
6	Unknown	Toluene	2.183 mVs	132.4	10 ppb
7	Unknown		1.930 mVs	163.4	
8	Unknown		31.24 mVs	256.2	

813 x 4.37 =
3553

3.5 ppb

Notes

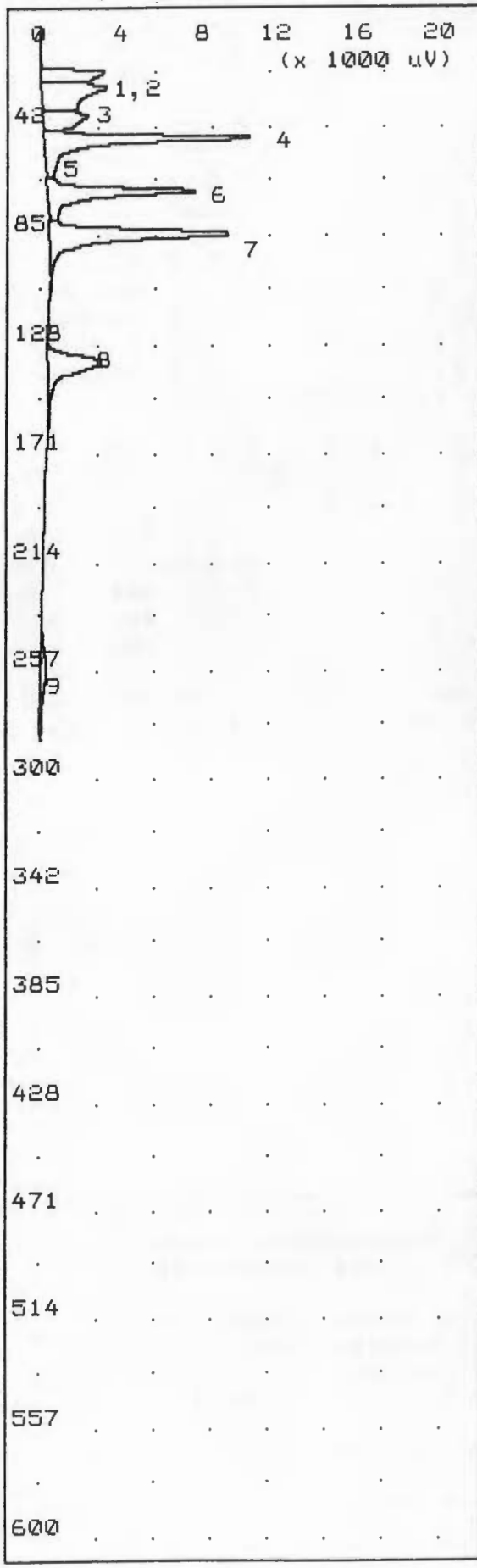
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-157
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank :
Bulb Blank :

Analysis #48 10S+ GC Function Analysis Report



Printed : Oct 9,97 18:24
Run at : Oct 9,97 18:19

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	16.69 mVs	17.4
2	Unknown	26.15 mVs	24.0
3	Unknown	13.22 mVs	35.4
4	Unknown	43.43 mVs	44.4
5	Unknown	0.023 mVs	54.5
6	Unknown	34.93 mVs	65.2
7	Unknown	48.11 mVs	82.1
8	Unknown Toluene	22.84 mVs	132.2
9	Unknown	4.616 mVs	252.0

Notes

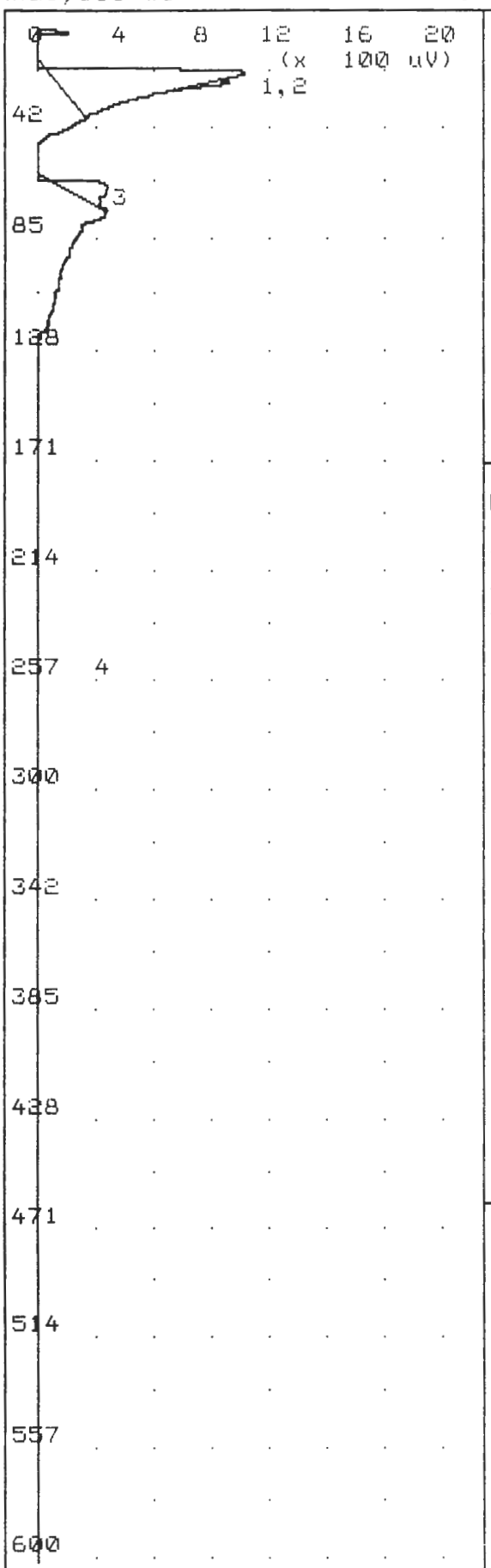
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #1 10S+ GC Function Analysis Report



Printed : Oct 10,97 08:29
Run at : Oct 10,97 08:19

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.5	ml/min
Backflush Flow	13.5	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	25 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	13.26 mVs	18.6
2	Unknown	0.216 mVs	22.6
3	Unknown	2.156 mVs	63.6
4	Unknown	1.940 mVs	244.0

Notes

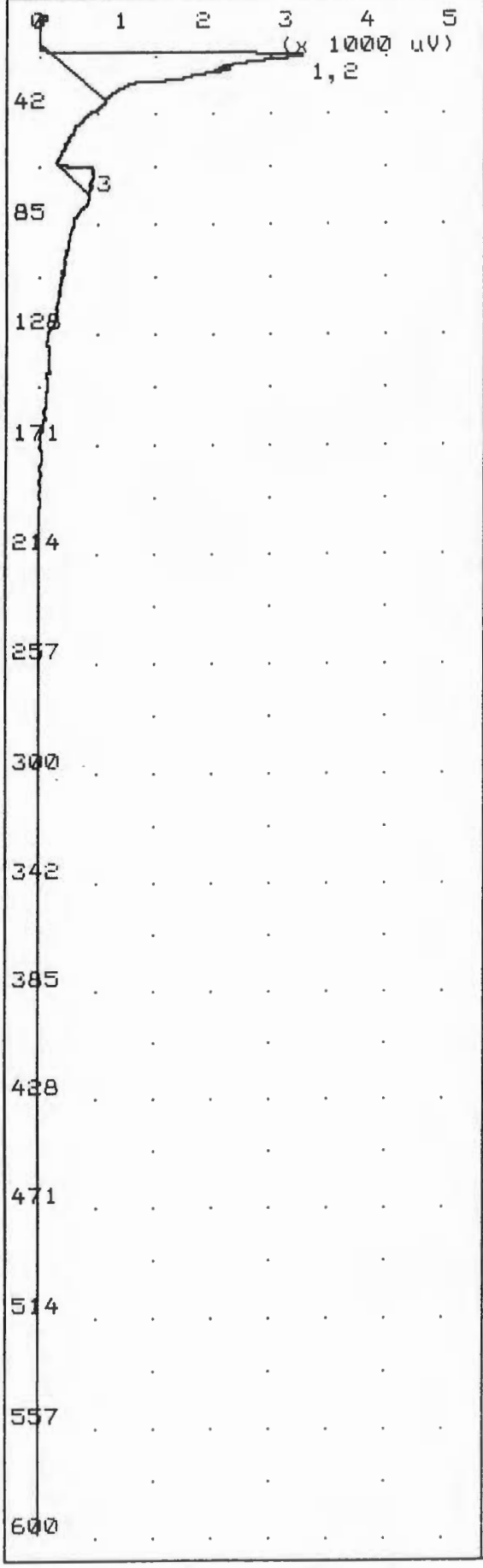
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : ~~100 ppb~~
Inj. Vol. : 0.5 ml

Syringe # : ~~A~~ 2

Syringe Blank : Yes
Bulb Blank :

Analysis #2 10S+ GC Function Analysis Report



Printed : Oct 10,97 08:41
Run at : Oct 10,97 08:31

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.065	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	26 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	29.87 mVs	17.1
2	Unknown	0.222 mVs	22.6
3	Unknown	2.434 mVs	62.2

Notes

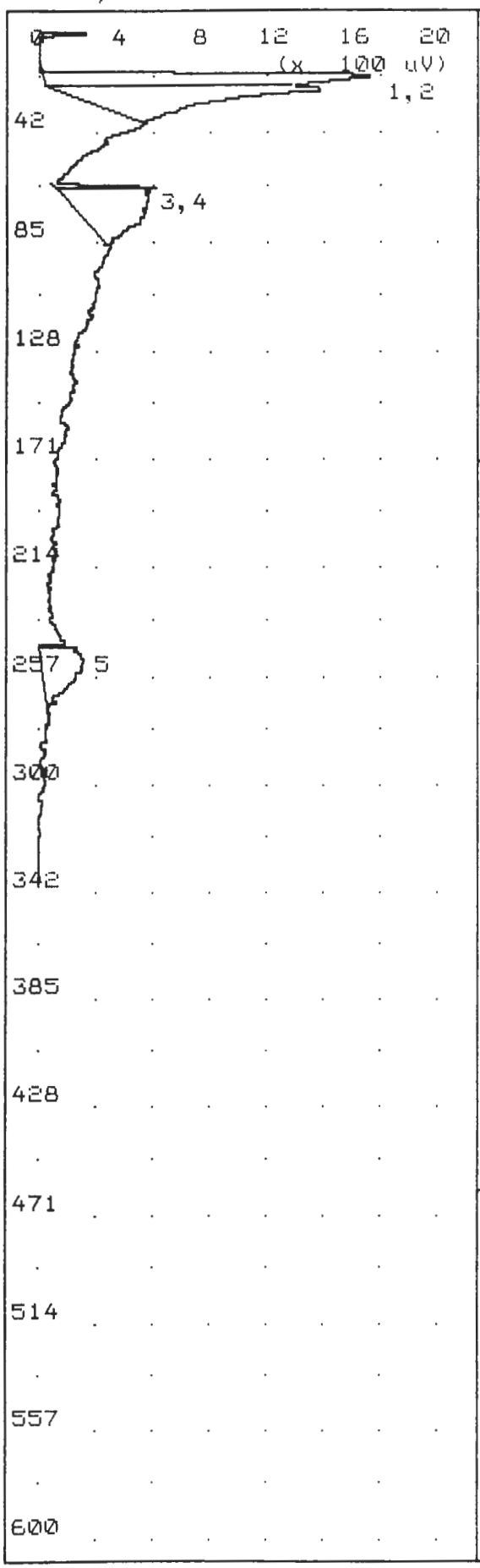
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank : Yes
Bulb Blank :

Analysis #3 10S+ GC Function Analysis Report



Printed : Oct 10,97 08:55
Run at : Oct 10,97 08:49

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	27	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	8.672 mVs	17.6
2	Unknown	8.533 mVs	23.2
3	Unknown	0.587 mVs	61.8
4	Unknown	5.963 mVs	62.6
5	Unknown	3.652 mVs	245.3

Notes

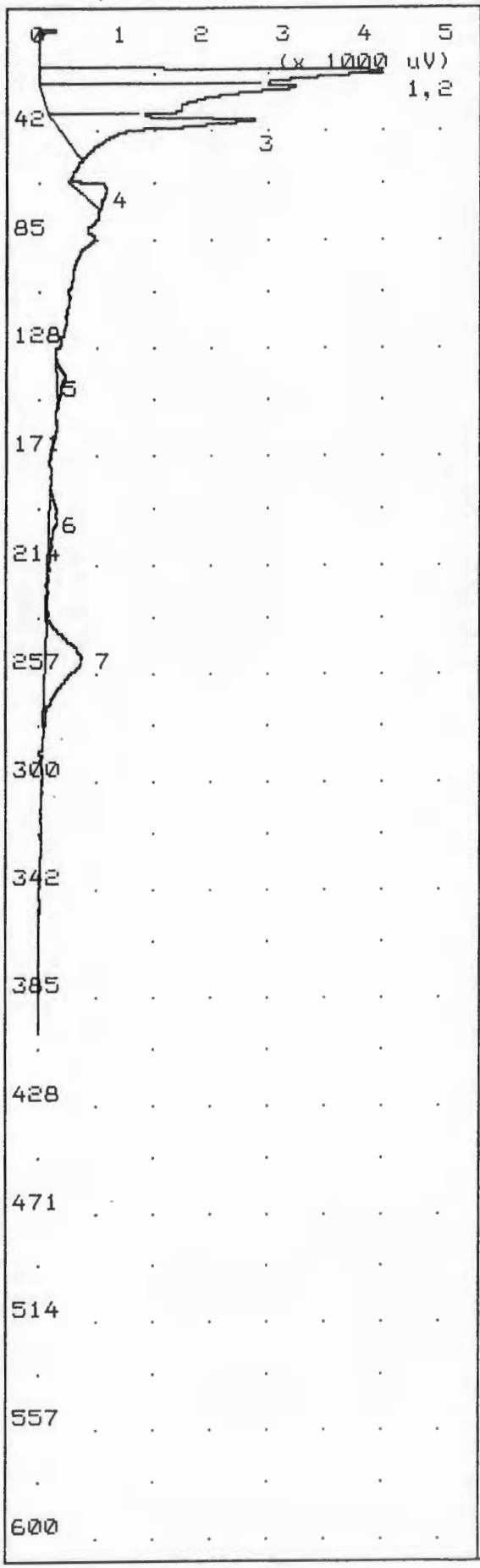
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank : Yes
Bulb Blank :

Analysis #4 10S+ GC Function Analysis Report



Printed : Oct 10,97 09:03
Run at : Oct 10,97 08:56

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.070	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	28	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	23.22 mVs	17.0
2	Unknown	27.18 mVs	23.1
3	Unknown	15.80 mVs	36.1
4	Unknown	2.551 mVs	63.6
5	Unknown	1.035 mVs	138.6
6	Unknown	1.598 mVs	194.8
7	Unknown	8.548 mVs	246.9

May have trace of Sol - reblank

Notes

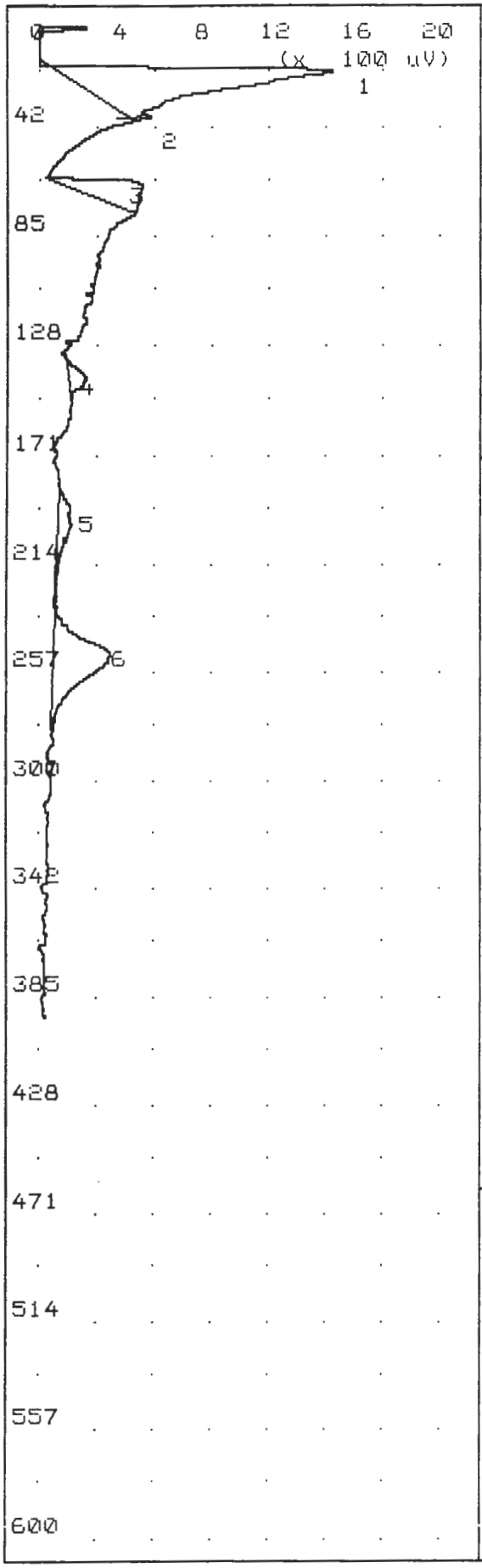
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank : Yes
Bulb Blank : Yes

Analysis #5 105+ GC Function Analysis Report



Printed : Oct 10,97 09:15
Run at : Oct 10,97 09:08

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	29	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	16.39 mVs	18.2
2	Unknown	0.125 mVs	36.2
3	Unknown	3.103 mVs	61.5
4	Unknown	0.762 mVs	138.2
5	Unknown	1.049 mVs	195.4
6	Unknown	5.203 mVs	247.7

Notes

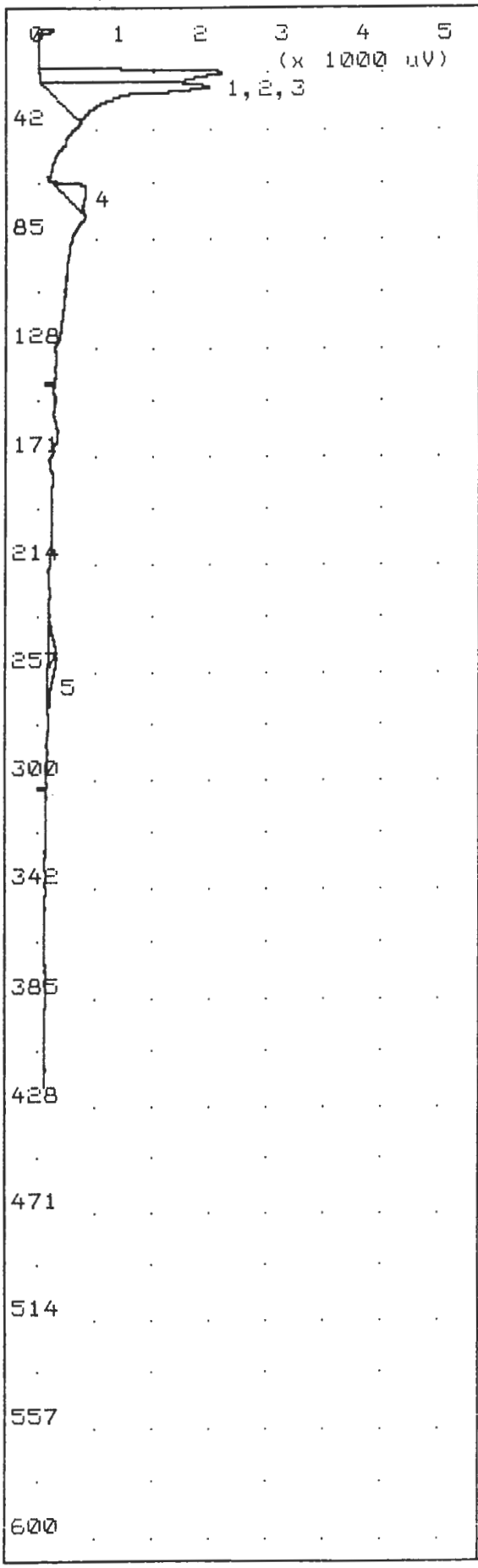
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 7

Syringe Blank : Yes
Bulb Blank :

Analysis #6 10S+ GC Function Analysis Report



Printed : Oct 10,97 09:24
Run at : Oct 10,97 09:16

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	29 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.097 mVs	14.8
2	Unknown	11.60 mVs	17.2
3	Unknown	11.78 mVs	23.4
4	Unknown	2.605 mVs	62.2
5	Unknown	1.401 mVs	250.4

Notes

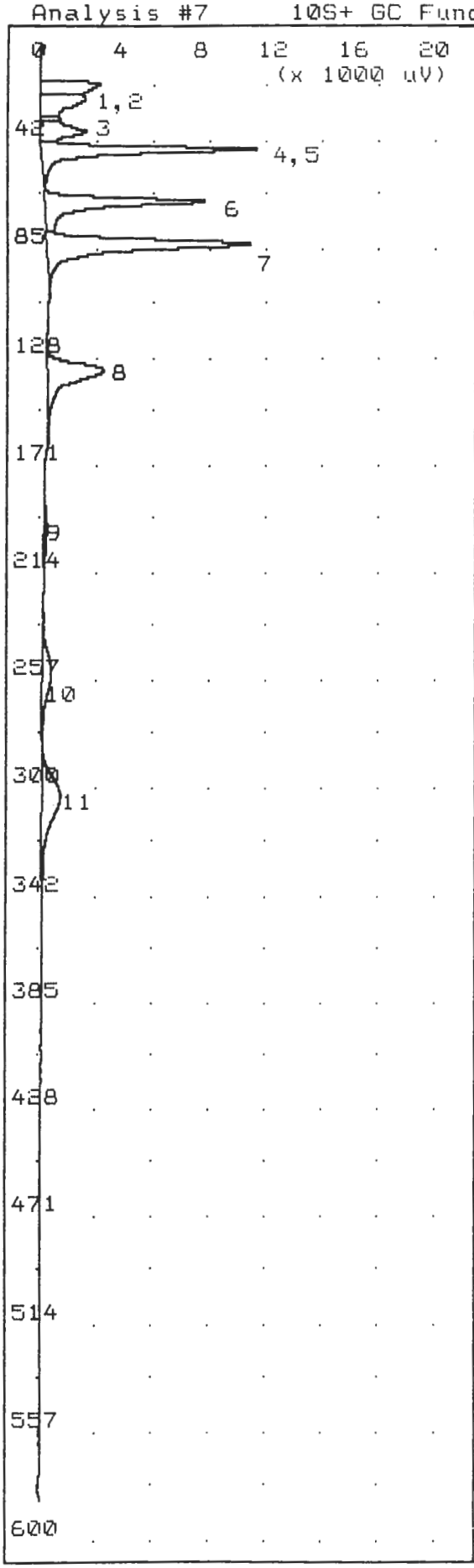
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : X4

Syringe Blank : Yes
Bulb Blank :

Analysis #7 10S+ GC Function Analysis Report



Printed : Oct 10,97 09:37
Run at : Oct 10,97 09:28

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	30 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	17.12 mVs	17.1
2	Unknown	15.50 mVs	23.2
3	Unknown	2.602 mVs	31.6
4	Unknown	12.32 mVs	36.2
5	Unknown	40.68 mVs	43.3
6	Unknown	36.50 mVs	63.9
7	Unknown	53.73 mVs	80.6
8	Unknown	26.13 mVs	130.8
9	Unknown	1.711 mVs	192.0
10	Unknown	7.693 mVs	250.6
11	Unknown	17.83 mVs	301.0

Notes

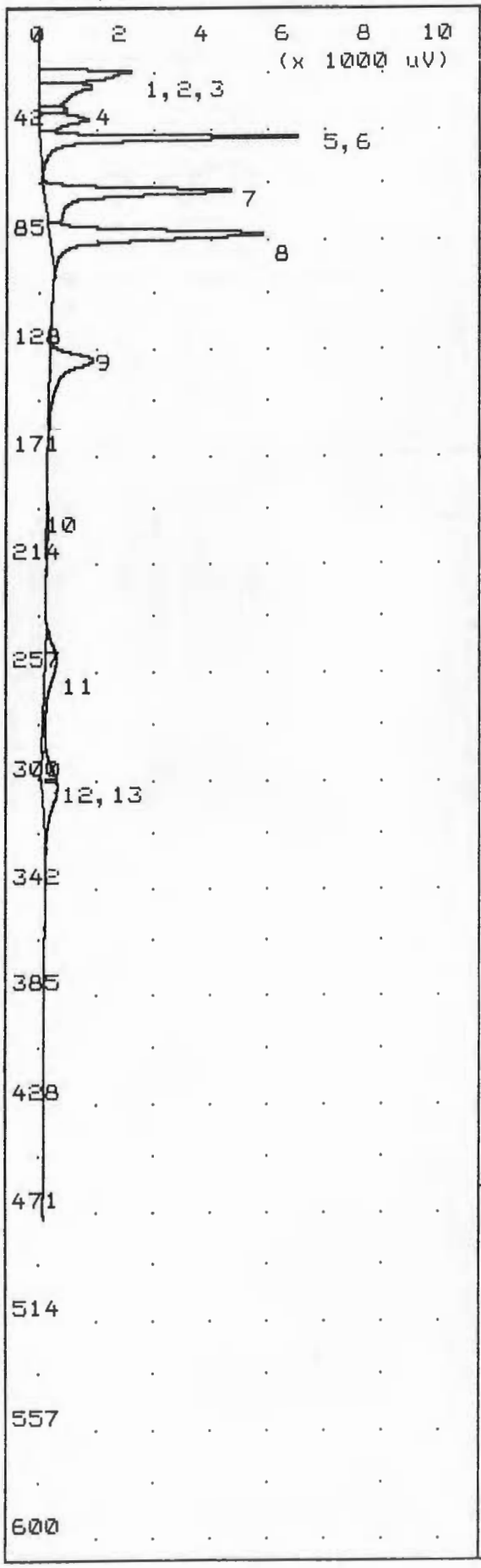
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #8 10S+ GC Function Analysis Report



Printed : Oct 10,97 09:47
Run at : Oct 10,97 09:39

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	30 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.069 mVs	14.7
2	Unknown	11.65 mVs	17.0
3	Unknown	9.235 mVs	23.2
4	Unknown	2.172 mVs	31.6
5	Unknown	7.126 mVs	36.0
6	Unknown	20.26 mVs	43.1
7	Unknown	20.41 mVs	63.8
8	Unknown	25.86 mVs	80.5
9	Unknown	9.696 mVs	130.1
10	Unknown	0.726 mVs	196.0
11	Unknown	6.173 mVs	250.6
12	Unknown	2.266 mVs	296.2
13	Unknown	5.122 mVs	299.2

Notes

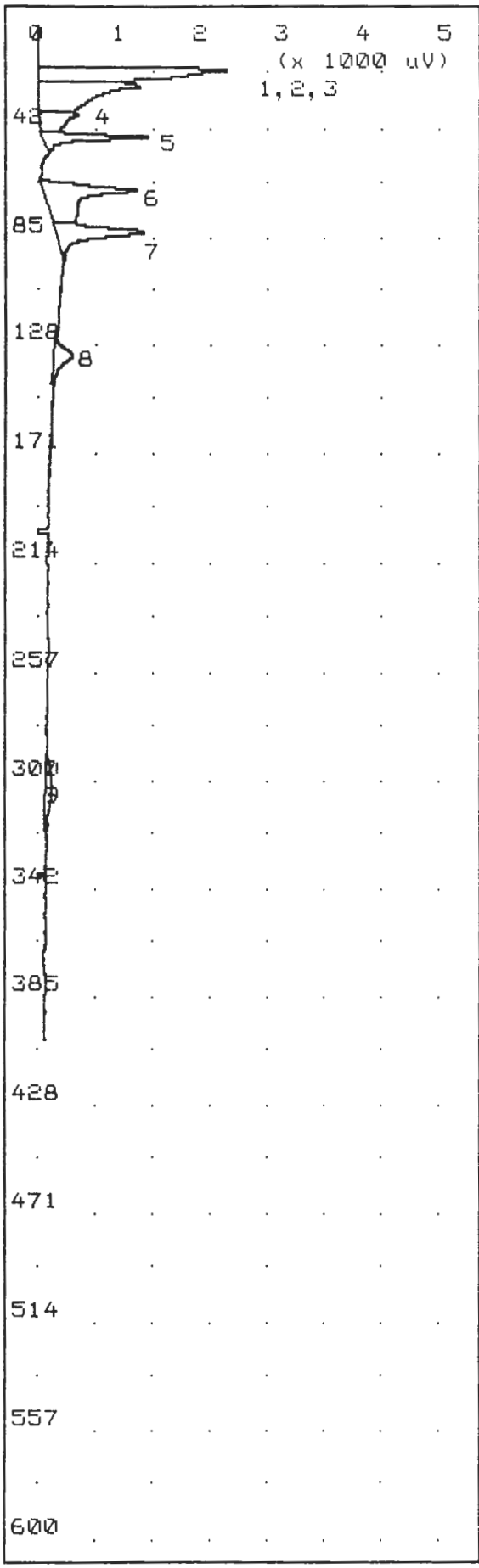
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 50 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #9 10S+ GC Function Analysis Report



Printed : Oct 10,97 10:00
Run at : Oct 10,97 09:53

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	31	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	0.078	mVs	14.4
2	Unknown	12.82	mVs	16.8
3	Unknown	10.71	mVs	23.2
4	Unknown	2.995	mVs	33.9
5	Unknown	3.587	mVs	43.3
6	Unknown	8.605	mVs	63.8
7	Unknown	5.589	mVs	80.5
8	Unknown	1.720	mVs	129.8
9	Unknown	1.259	mVs	301.8

Notes

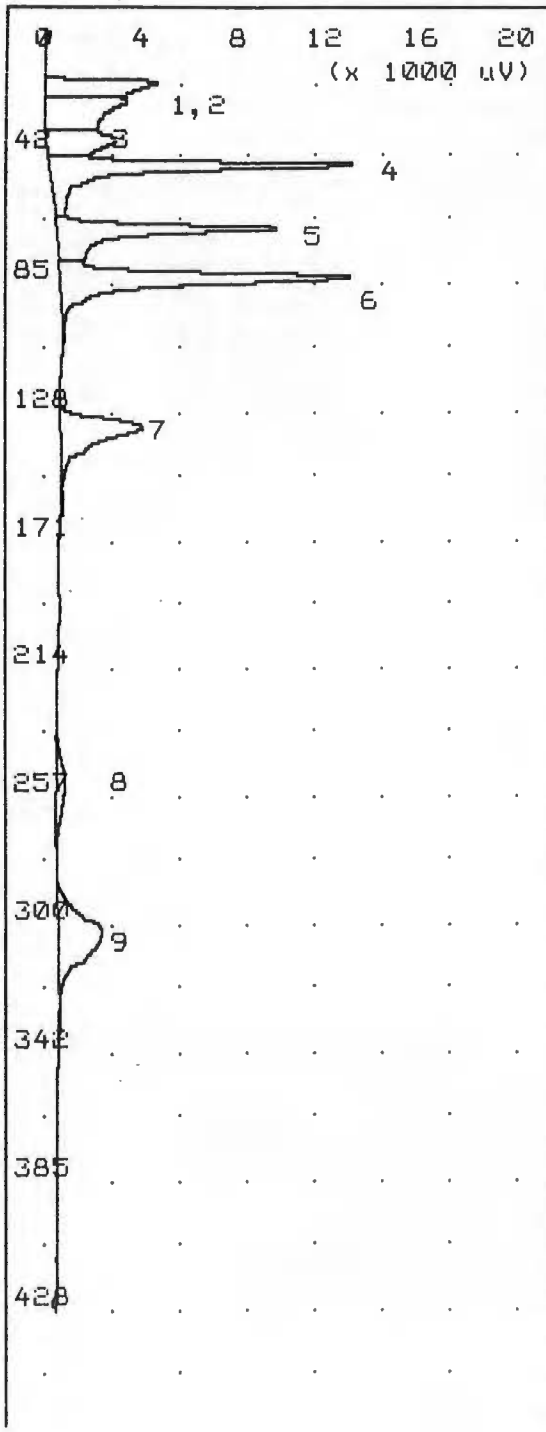
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 50 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #10 10S+ GC Function Analysis Report



Printed : Oct 10,97 10:16
Run at : Oct 10,97 10:08

Method

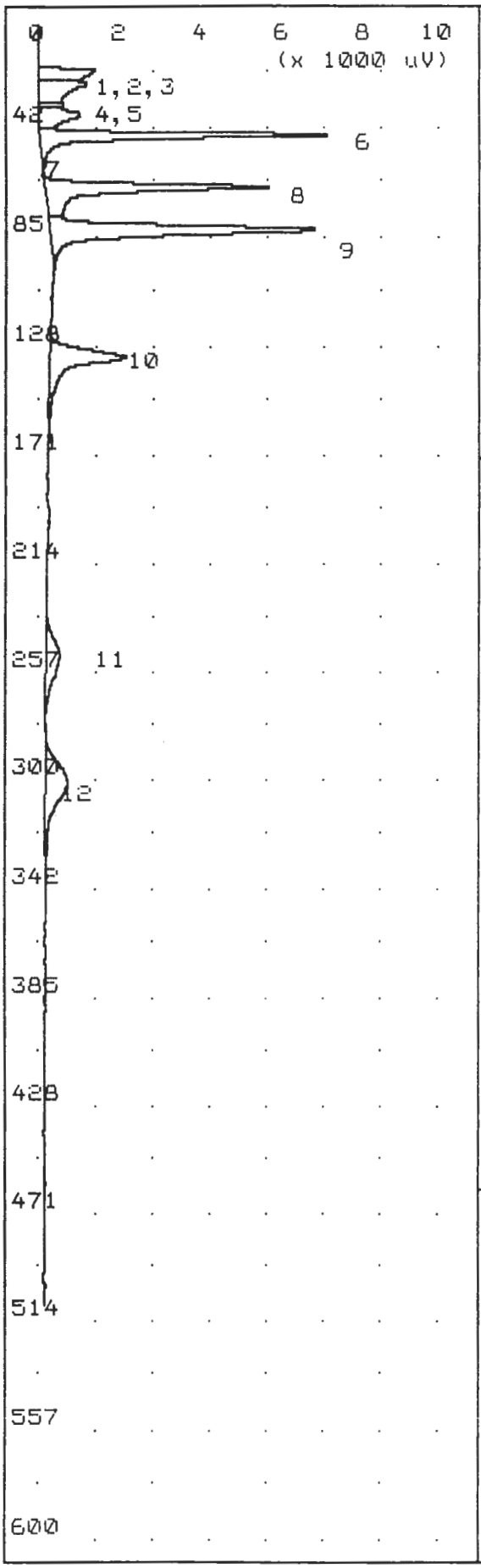
Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	26.66 mVs	17.2
2	Unknown	28.93 mVs	23.6
3	Unknown	18.59 mVs	35.6
4	Unknown	54.80 mVs	43.6
5	Unknown	47.53 mVs	64.1
6	Unknown	64.57 mVs	80.8
7	Unknown	32.44 mVs	130.6
8	Unknown	6.592 mVs	249.0
9	Unknown	33.81 mVs	298.9

100 ppb Std
Syr #A
0.5 ml

Analysis #11 10S+ GC Function Analysis Report 97oc10ak.gc



Printed : Oct 10,97 10:28
Run at : Oct 10,97 10:17

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.
1	Unknown		0.053	mVs	14.9
2	Unknown		8.397	mVs	17.2
3	Unknown		8.750	mVs	23.2
4	Unknown		1.699	mVs	31.0
5	Unknown		6.414	mVs	34.6
6	Unknown	cis 1,2 DCE	22.47	mVs	43.0
7	Unknown		0.048	mVs	54.4
8	Unknown	Benzene	23.04	mVs	63.5
9	Unknown	TCE	30.80	mVs	80.1
10	Unknown	Toluene	13.78	mVs	129.2
11	Unknown		6.067	mVs	248.2
12	Unknown	p-xylene	9.905	mVs	298.4

Notes

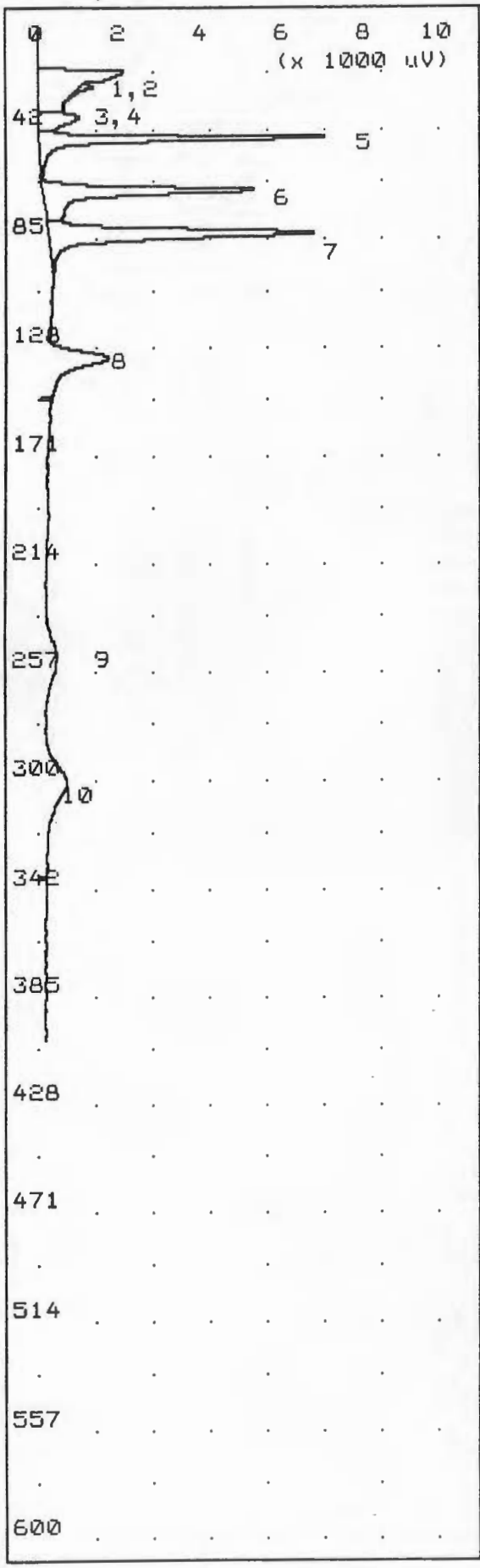
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 50 ppb
Inj. Vol. : 0.25 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #12 10S+ GC Function Analysis Report



Printed : Oct 10,97 10:37
Run at : Oct 10,97 10:30

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	23.74 mVs	17.1
2	Unknown	0.598 mVs	23.4
3	Unknown	0.088 mVs	31.6
4	Unknown	6.627 mVs	34.7
5	Unknown	22.81 mVs	43.4
6	Unknown	23.31 mVs	64.0
7	Unknown	30.49 mVs	80.6
8	Unknown	11.62 mVs	130.1
9	Unknown	5.937 mVs	248.2
10	Unknown	9.358 mVs	298.6

Notes

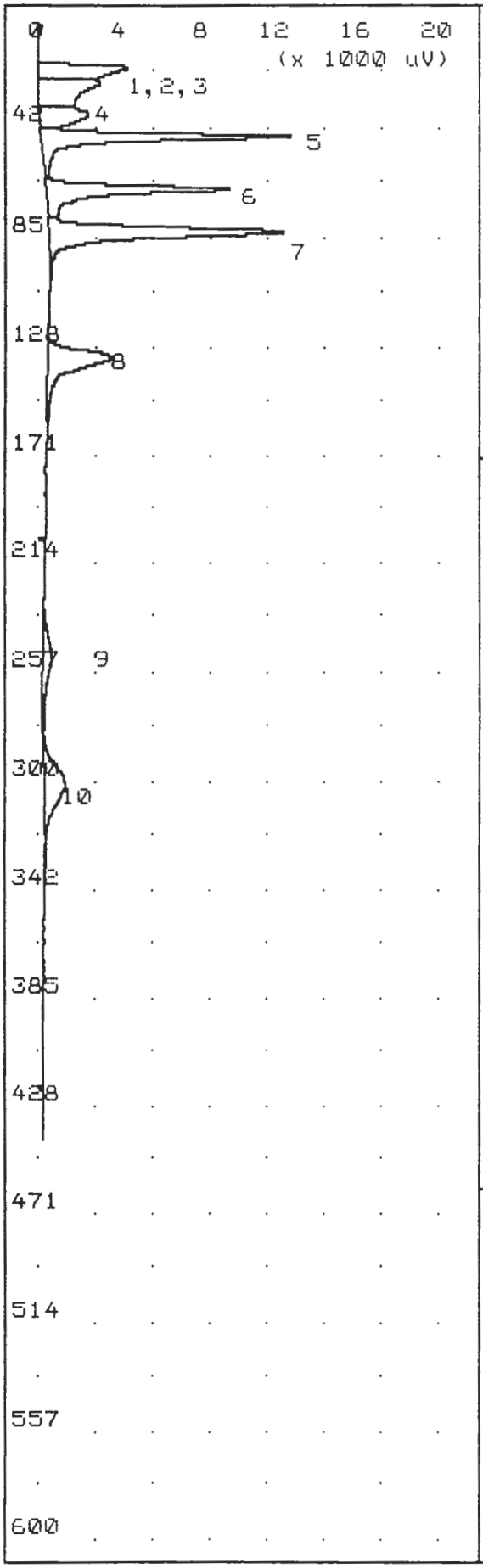
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 50 ppb
Inj. Vol. : 0.25 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #13 10S+ GC Function Analysis Report



Printed : Oct 10,97 10:46
Run at : Oct 10,97 10:38

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.066	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc		R.T.
1	Unknown		0.038	mVs	11.8
2	Unknown		24.76	mVs	17.1
3	Unknown		26.90	mVs	23.2
4	Unknown		15.15	mVs	34.8
5	Unknown	cis 1,2 DCE	47.57	mVs	43.4
6	Unknown	Benzene	40.60	mVs	63.9
7	Unknown	TCE	58.31	mVs	80.5
8	Unknown	Toluene	26.97	mVs	129.8
9	Unknown		7.371	mVs	248.5
10	Unknown	p-xylene	19.43	mVs	298.4

Notes

Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

SOIL GAS 2-POINT CALIBRATION

Parsons Engineering-Science	CLIENT:	DATE: 10/10/97
PROJECT: LOCATION:		GC Operator:

Instrument Specs:		BTEX Calibration Gas Specifications	
Type of GC:		Manfacturer:	Lot#:
Column Type:		Concentration (ppmV):	
Col. Temp. (°C):		Concentration:	cis 1,2-DCE
Chart Speed:		(ppmV)	Benzene
Gain:			TCE
Sensitivity:			Toluene
Gas Flow Rate:			P-Xylene
Tank Pressure:			

Analysis A
Inj. #: 13

A 0.5 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF			
cis 1,2-DCE	43.4	0.1	0.04757	2.10			
Benzene	63.4	↓	0.0406	2.46			
TCE	80.5		0.05831	1.71			
Toluene	125.8		0.02697	3.71			
P-Xylene	298.4		0.01943	5.14			

Comments:
Concentration is normalized to _____ ml.

Analysis B
Inj. #: 11

A 0.25 ml injection of a 0.1 ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF	Delta RF	RF avg.	
cis 1,2-DCE	43.0	0.05	0.02247	2.23			
Benzene	63.5	↓	0.02304	2.17			
TCE	80.1		0.0308	1.62			
Toluene	129.2		0.01378	3.63			
P-Xylene	298.4		0.009905	5.05			

Comments:
Concentration is normalized to _____ ml.
Delta RF = (A-B)/(A+B)/2

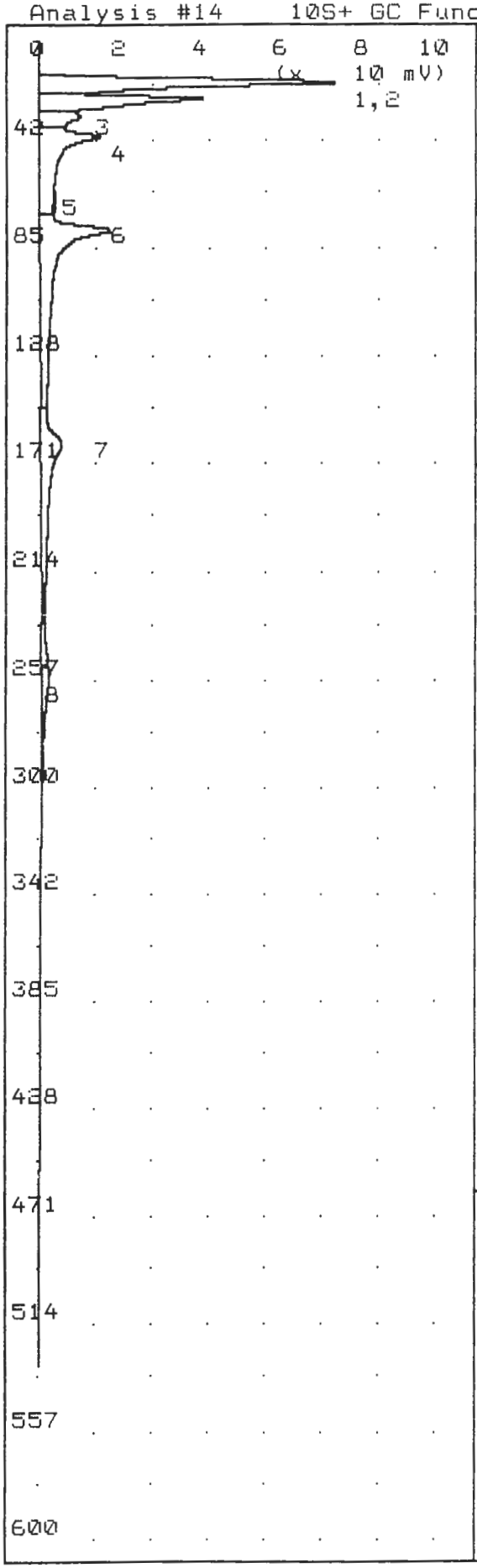
Analysis C (if RF relatative % difference is greater than 50%)
inj. #:

A _____ ml injection of a _____ ppmV standard.

Analyte	Ret. Time (sec)	Concentration	÷ Area (vs)	= RF	Delta RF	RF avg.	
cis 1,2-DCE							
Benzene							
TCE							
Toluene							
P-Xylene							

Comments:
Concentration is normalized to _____ ml.

Analysis #14 10S+ GC Function Analysis Report



Printed : Oct 10,97 10:57
Run at : Oct 10,97 10:48

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	307.5 mVs	16.8
2	Unknown	173.0 mVs	23.6
3	Unknown	57.34 mVs	30.7
4	Unknown	202.7 mVs	38.6
5	Unknown	2.277 mVs	61.1
6	Unknown	299.3 mVs	75.7
7	Unknown	175.4 mVs	161.4
8	Unknown	56.82 mVs	252.5

No Target Compounds detected

978 x 3618

4 ppm

Notes

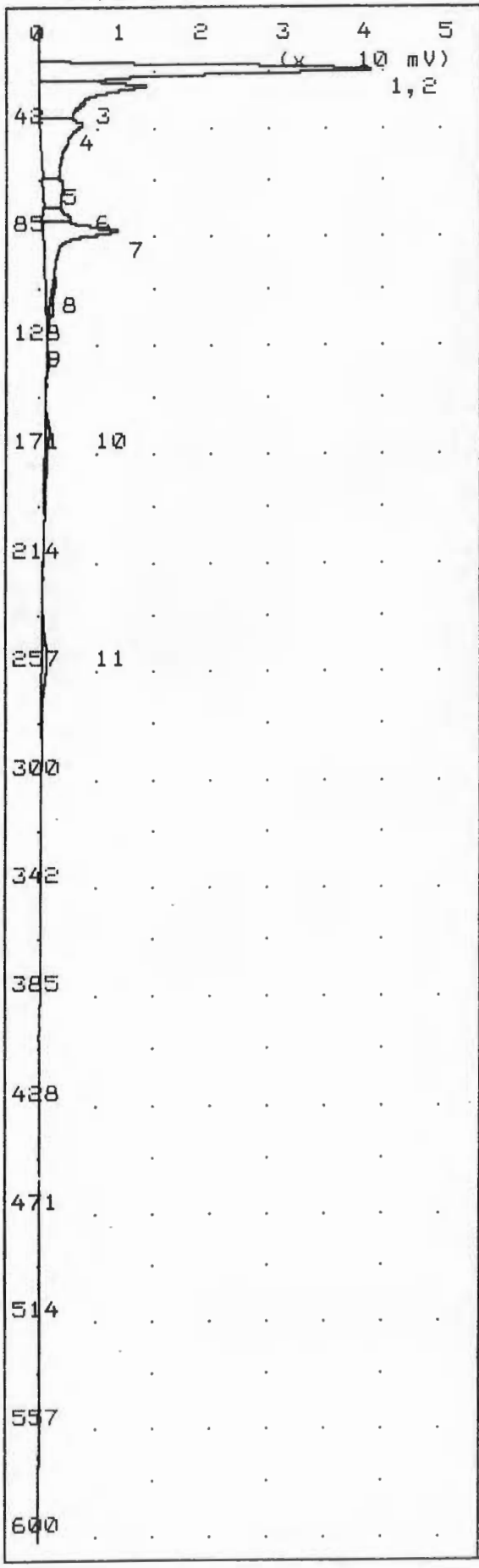
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-146
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 7

Syringe Blank :
Bulb Blank :

Analysis #15 10S+ GC Function Analysis Report



Printed : Oct 10,97 11:09
Run at : Oct 10,97 10:59

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.064	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		180.6 mVs	17.3	
2	Unknown		102.1 mVs	23.6	
3	Unknown		0.699 mVs	30.3	
4	Unknown		77.58 mVs	38.4	
5	Unknown	Benzene	27.87 mVs	63.8	69 ppb
6	Unknown		15.05 mVs	75.7	
7	Unknown	TCE	86.48 mVs	80.6	148 ppb
8	Unknown		3.660 mVs	100.9	
9	Unknown	Toluene	0.365 mVs	130.0	2 ppb
10	Unknown		7.643 mVs	160.4	
11	Unknown		10.45 mVs	249.3	

517 x 3.71 = 1918

2 ppm

Notes

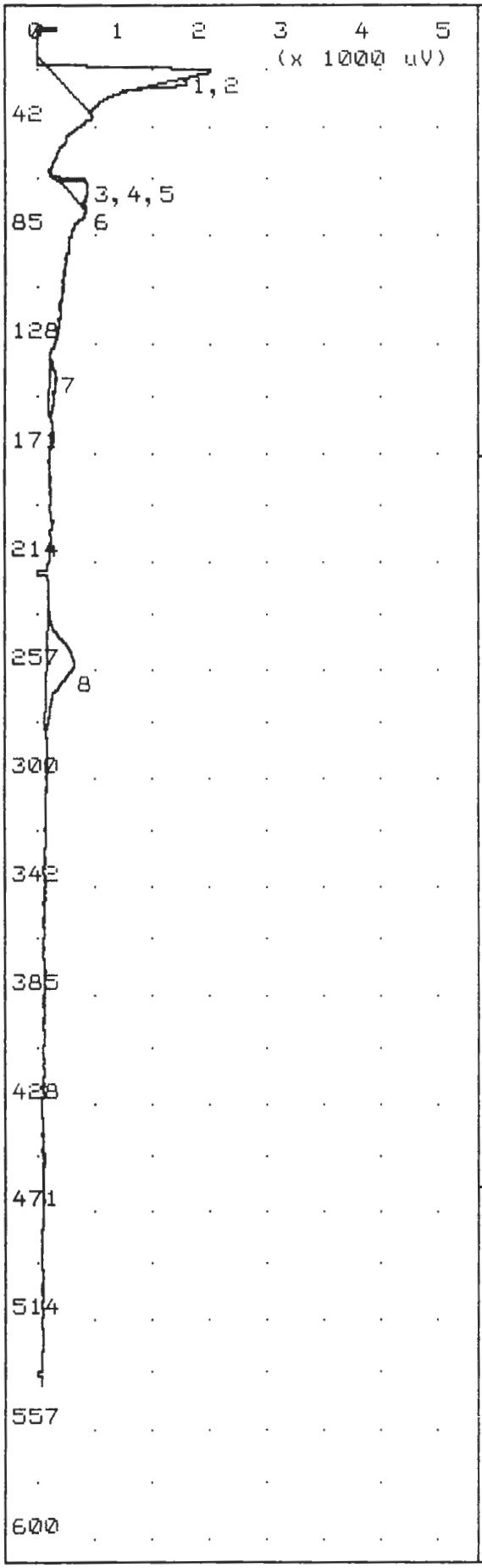
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-158
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 4

Syringe Blank :
Bulb Blank :

Analysis #16 10S+ GC Function Analysis Report



Printed : Oct 10,97 11:22
Run at : Oct 10,97 11:13

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	20.18 mVs	17.9
2	Unknown	0.685 mVs	23.0
3	Unknown	0.037 mVs	57.5
4	Unknown	0.684 mVs	61.7
5	Unknown	1.737 mVs	63.8
6	Unknown	0.098 mVs	71.8
7	Unknown	1.009 mVs	142.8
8	Unknown	6.655 mVs	251.2

Notes

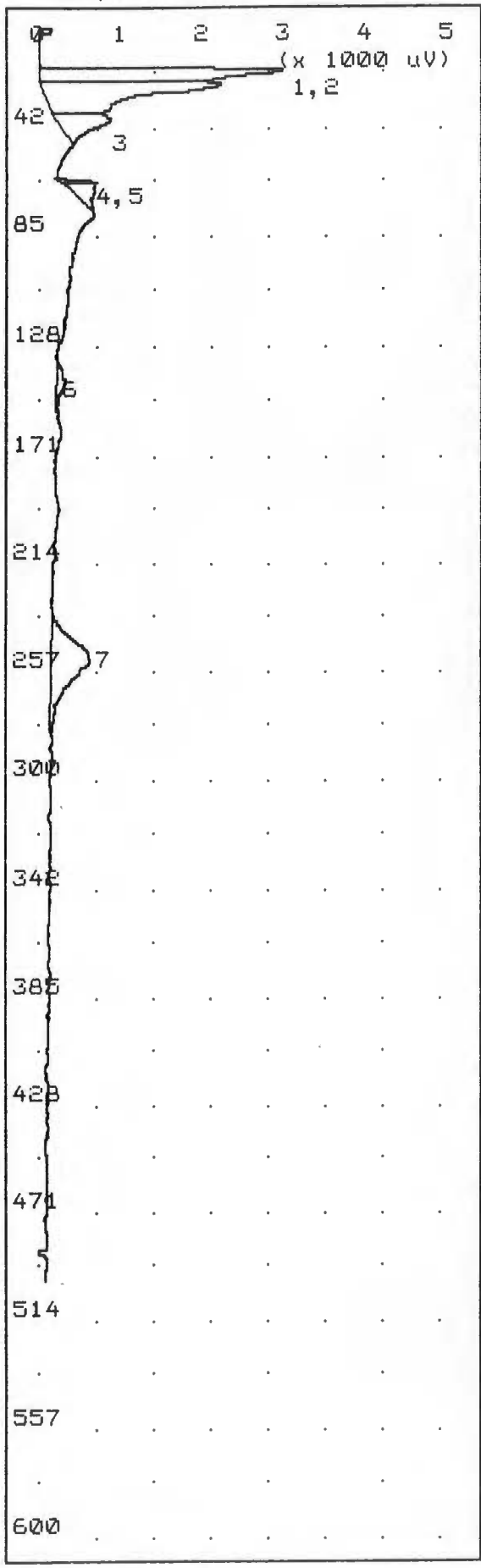
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 3

Syringe Blank : Yes
Bulb Blank :

Analysis #17 10S+ GC Function Analysis Report



Printed : Oct 10,97 11:33
Run at : Oct 10,97 11:24

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc		R.T.
1	Unknown	16.09	mVs	17.4
2	Unknown	16.79	mVs	23.0
3	Unknown	4.160	mVs	36.0
4	Unknown	0.605	mVs	62.0
5	Unknown	1.911	mVs	63.0
6	Unknown	0.864	mVs	139.0
7	Unknown	9.241	mVs	249.8

Notes

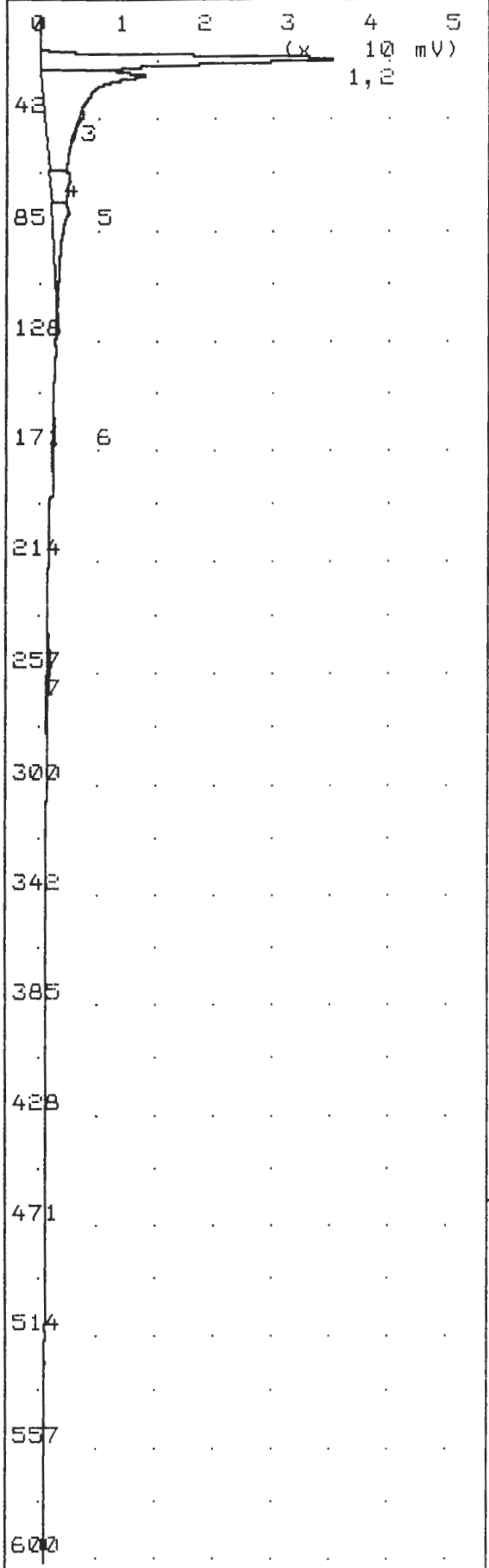
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank : Yes
Bulb Blank :

Analysis #18 10S+ GC Function Analysis Report



Printed : Oct 10,97 11:48
Run at : Oct 10,97 11:38

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33 C	
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	153.4 mVs	16.8
2	Unknown	186.8 mVs	23.6
3	Unknown	1.422 mVs	38.2
4	Unknown	29.25 mVs	61.2
5	Unknown	38.84 mVs	76.2
6	Unknown	1.872 mVs	162.4
7	Unknown	6.262 mVs	250.6

No Target Compounds detected

420 × 3.71 = 1558

1.5

Notes

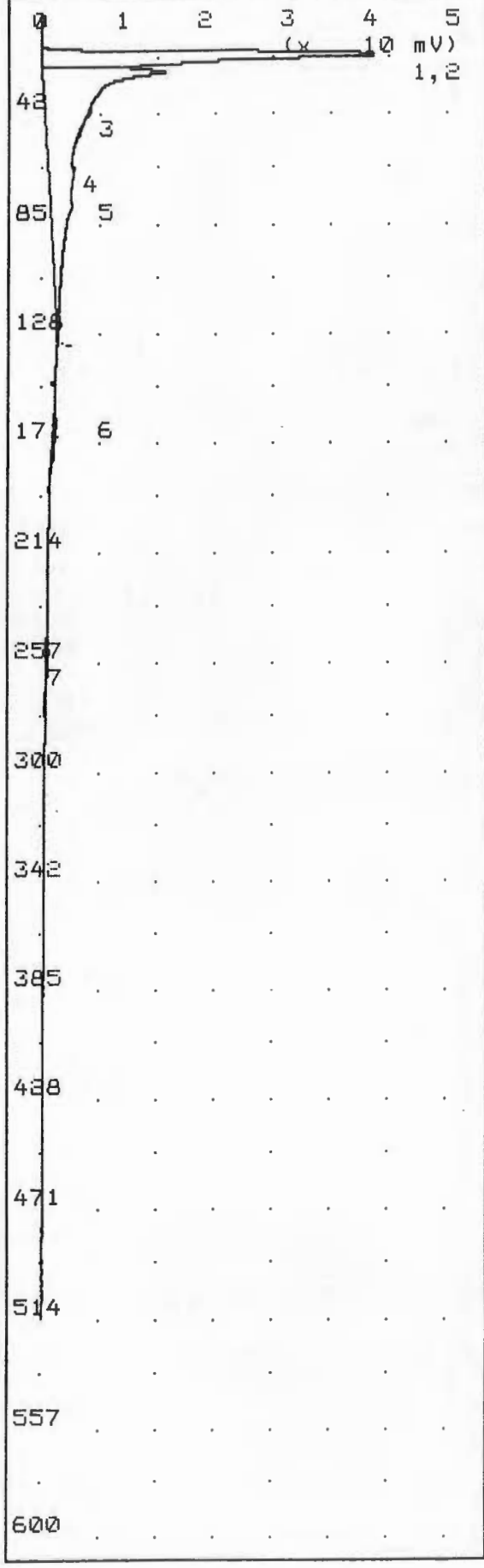
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-156
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 5

Syringe Blank :
Bulb Blank :

Analysis #19 10S+ GC Function Analysis Report



Printed : Oct 10,97 12:00
Run at : Oct 10,97 11:51

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	184.6 mVs	16.8
2	Unknown	327.6 mVs	23.4
3	Unknown	0.653 mVs	38.0
4	Unknown	5.105 mVs	61.0
5	Unknown	4.560 mVs	75.6
6	Unknown	4.211 mVs	159.4
7	Unknown	3.998 mVs	250.4

No Target Compounds detected

Notes

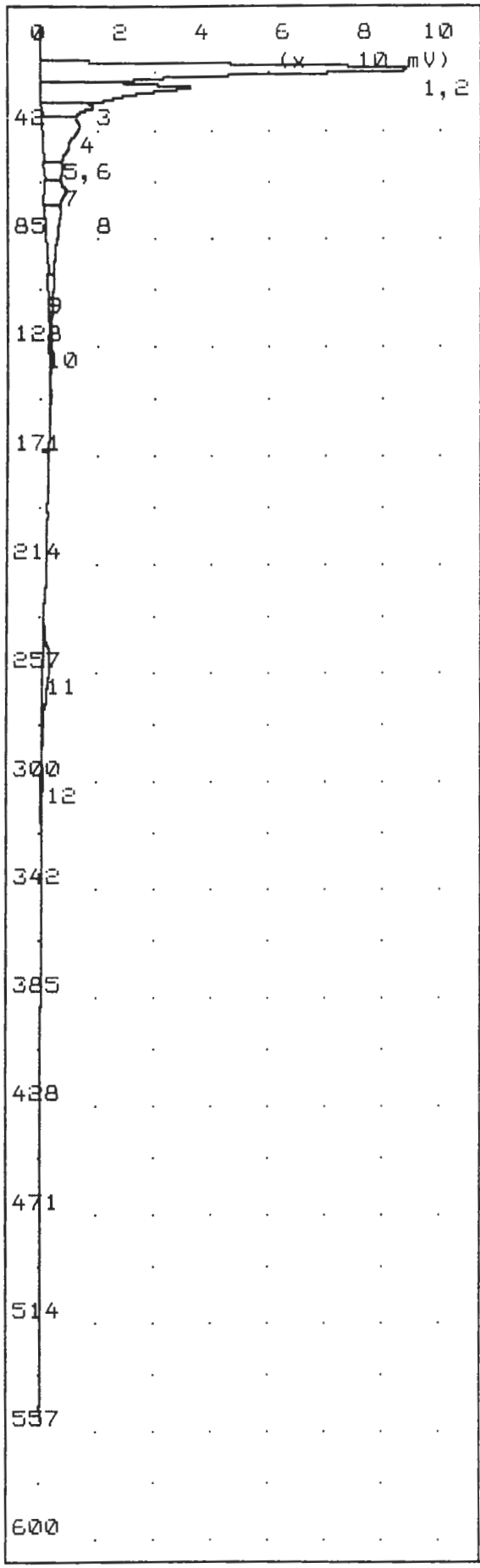
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-156Dup
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 8

Syringe Blank :
Bulb Blank :

Analysis #20 10S+ GC Function Analysis Report



Printed : Oct 10,97 12:11
Run at : Oct 10,97 12:01

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		456.4 mVs	16.6	
2	Unknown		196.8 mVs	23.6	
3	Unknown		65.77 mVs	31.2	
4	Unknown		125.4 mVs	38.2	
5	Unknown		0.033 mVs	52.2	
6	Unknown		33.43 mVs	53.0	
7	Unknown	Benzene	48.11 mVs	63.9	118 ppb
8	Unknown		77.56 mVs	72.0	
9	Unknown		31.29 mVs	101.3	
10	Unknown	Toluene	12.96 mVs	130.1	48 ppb
11	Unknown		30.34 mVs	250.6	
12	Unknown		0.270 mVs	294.9	

1163 x 3.71 = 4315

45 ppm

Notes

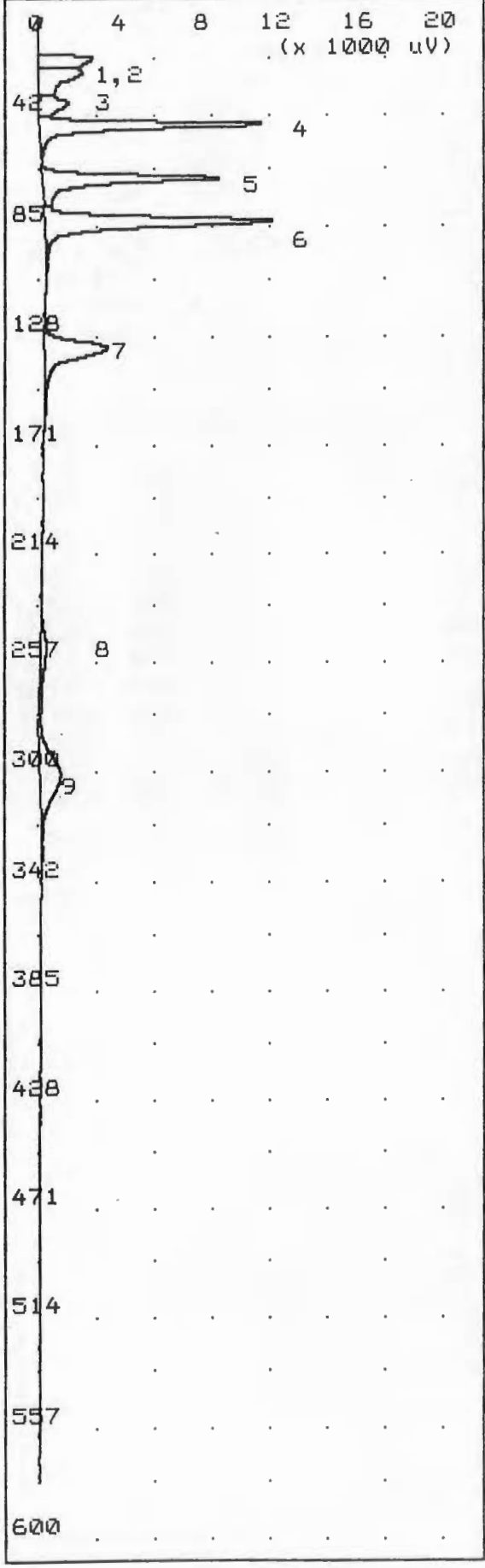
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-145
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 9

Syringe Blank :
Bulb Blank :

Analysis #22 10S+ GC Function Analysis Report



Printed : Oct 10,97 12:36
Run at : Oct 10,97 12:27

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	15.59 mVs	17.0
2	Unknown	16.77 mVs	23.3
3	Unknown	9.162 mVs	35.1
4	Unknown	39.54 mVs	43.5
5	Unknown	36.48 mVs	64.2
6	Unknown	54.04 mVs	80.8
7	Unknown	25.11 mVs	130.2
8	Unknown	4.199 mVs	249.6
9	Unknown	21.34 mVs	297.6

Notes

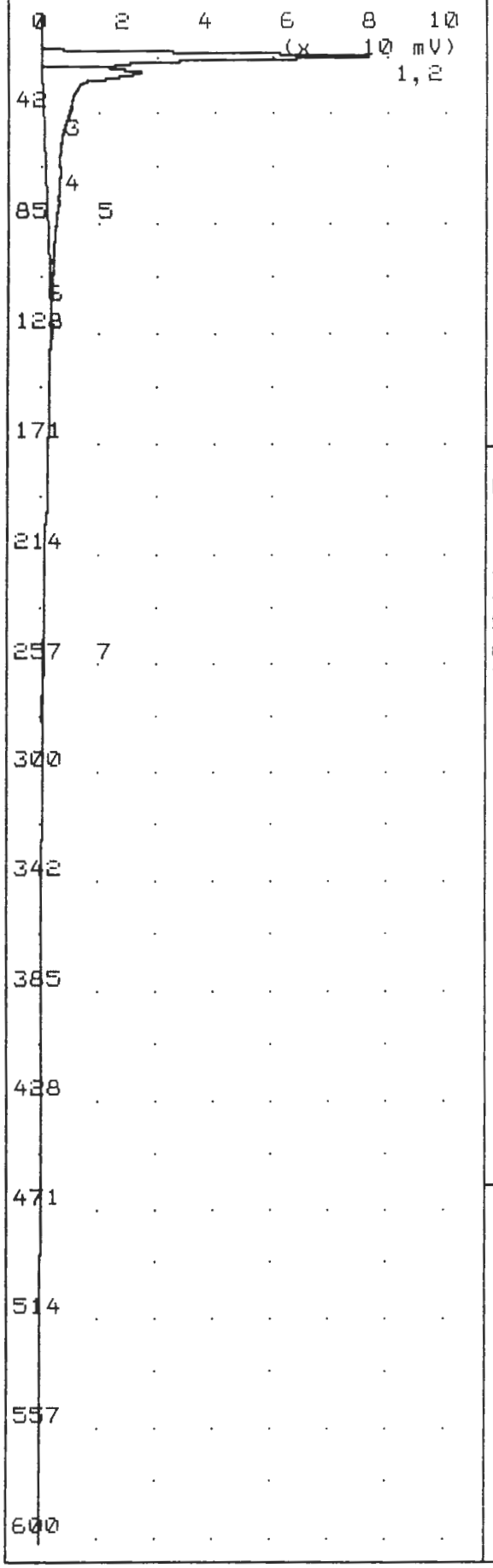
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point :
OVM Reading :
Cal. Gas Std. : 100 ppb
Inj. Vol. : 0.5 ml

Syringe # : A

Syringe Blank :
Bulb Blank :

Analysis #21 10S+ GC Function Analysis Report



Printed : Oct 10,97 12:23
Run at : Oct 10,97 12:13

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume		500.0 uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	32	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	295.3 mVs	17.4
2	Unknown	419.1 mVs	23.7
3	Unknown	2.035 mVs	37.8
4	Unknown	5.682 mVs	60.9
5	Unknown	4.386 mVs	75.3
6	Unknown	0.262 mVs	101.0
7	Unknown	3.404 mVs	248.2

733 x 3.71 = 2719

3 ppm

Notes

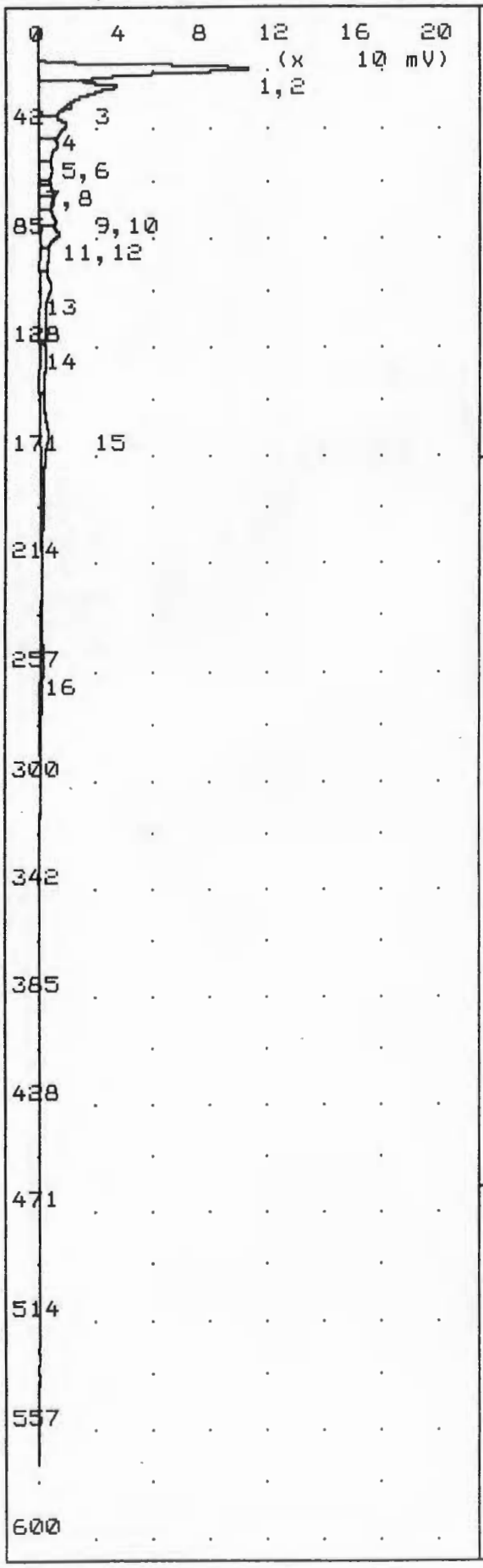
Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-149
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 2

Syringe Blank :
Bulb Blank :

Analysis #23 10S+ GC Function Analysis Report



Printed : Oct 10,97 12:48
Run at : Oct 10,97 12:38

Method

Slope Up	0.500	mV/s
Slope Down	1.500	mV/s
Min Area	0.000	mVs
Min Height	0.050	mV
Analysis Delay	0.0	sec
Window Size	20.0	%
Syringe Inject Volume	500.0	uL
Detector Flow	13.0	ml/min
Backflush Flow	13.0	ml/min
Aux Flow	0.0	ml/min
Oven Temp/SetPt	35/35	C
Amb Temp	33	C
Analysis Time	600.0	sec

Peak Report

Pk	Compound Name		Area/Conc	R.T.	
1	Unknown		464.0 mVs	16.9	
2	Unknown		288.4 mVs	23.9	
3	Unknown		5.238 mVs	30.8	
4	Unknown		103.8 mVs	38.4	
5	Unknown		63.78 mVs	46.6	
6	Unknown		44.83 mVs	55.7	
7	Unknown		10.65 mVs	60.7	
8	Unknown	Benzene	29.87 mVs	64.6	74 ppb
9	Unknown		35.90 mVs	68.2	
10	Unknown		51.18 mVs	76.1	
11	Unknown	TCE	63.84 mVs	81.2	110 ppb
12	Unknown		37.75 mVs	89.2	
13	Unknown		99.07 mVs	102.0	
14	Unknown	Toluene	45.62 mVs	130.2	171 ppb
15	Unknown		143.0 mVs	160.4	
16	Unknown		35.51 mVs	250.6	

1527 x 3.71 = 5665

6 ppm

Notes

Seneca Army Depot
SEAD 59 - Soil Gas Survey

Soil Gas Point : SG12-148
OVM Reading : Bkgd
Cal. Gas Std. :
Inj. Vol. : 0.5 ml

Syringe # : 1

Syringe Blank :
Bulb Blank :

Appendix L

Human Heath Risk Assessment Calculation Tables

TABLE L-1A (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	Air EPC* from Surface Soil (mg/m3)	Air EPC* from Total Soils (mg/m3)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Future Construction Worker Intake (mg/kg-day) (Car)	Future Construction Worker Hazard Quotient	Future Construction Worker Cancer Risk
Volatile Organics												
Acetone	NA	NA	2.06E-10	1.48E-09								
Benzene	1.71E-03	2.73E-02	ND	8.28E-10					8.43E-11	1.20E-12	5E-08	3E-14
Ethyl benzene	2.86E-01	NA	ND	1.24E-09					1.26E-10		4E-10	
Methyl butyl ketone	NA	NA	1.70E-11	1.38E-10								
Methylene chloride	8.57E-01	1.65E-03	ND	4.14E-10					4.21E-11	6.02E-13	5E-11	1E-15
Styrene	2.86E-01	NA	ND	1.01E-09					1.03E-10		4E-10	
Toluene	1.14E-01	NA	6.80E-11	9.88E-10	1.51E-12		1E-11		1.01E-10		9E-10	
Total Xylenes	NA	NA	ND	1.99E-09								
Trichloroethene	NA	6.00E-03	ND	1.01E-09						1.47E-12		9E-15
Semivolatile Organics												
2,4-Dimethylphenol	NA	NA	ND	3.45E-09								
2-Methylnaphthalene	NA	NA	ND	6.90E-09								
4-Methylphenol	NA	NA	ND	1.07E-08								
Acenaphthene	NA	NA	ND	3.17E-09								
Acenaphthylene	NA	NA	ND	4.55E-09								
Anthracene	NA	NA	ND	1.11E-08								
Benzo(a)anthracene	NA	NA	4.59E-10	1.17E-08								
Benzo(a)pyrene	NA	NA	4.59E-10	1.11E-08								
Benzo(b)fluoranthene	NA	NA	6.12E-10	1.13E-08								
Benzo(ghi)perylene	NA	NA	5.27E-10	1.22E-08								
Benzo(k)fluoranthene	NA	NA	4.42E-10	1.08E-08								
Bis(2-Ethylhexyl)phthalate	NA	NA	1.24E-09	2.29E-08								
Butylbenzylphthalate	NA	NA	3.89E-10	3.16E-09								
Carbazole	NA	NA	4.68E-10	3.80E-09								
Chrysene	NA	NA	8.67E-10	1.24E-08								
Di-n-butylphthalate	NA	NA	9.10E-10	1.52E-08								
Di-n-octylphthalate	NA	NA	3.98E-10	7.45E-09								
Dibenz(a,h)anthracene	NA	NA	4.68E-10	7.26E-09								
Dibenzofuran	NA	NA	3.79E-10	3.08E-09								
Fluoranthene	NA	NA	4.15E-10	1.32E-08								
Fluorene	NA	NA	3.77E-10	6.87E-09								
Indeno(1,2,3-cd)pyrene	NA	NA	4.85E-10	1.19E-08								
Naphthalene	8.60E-04	NA	ND	1.35E-08					1.37E-09		2E-06	
Phenanthrene	NA	NA	4.05E-10	1.33E-08								
Phenol	NA	NA	ND	1.06E-08								
Pyrene	NA	NA	3.74E-10	1.41E-08								
Pesticides/PCBs												
4,4'-DDE	NA	NA	6.94E-11	5.33E-10								
4,4'-DDT	NA	3.40E-01	1.04E-10	4.02E-10		1.65E-13		6E-14		5.84E-13		2E-13
Aldrin	NA	1.72E+01	ND	1.09E-10						1.58E-13		3E-12
Alpha-BHC	NA	6.30E+00	ND	2.19E-10						3.19E-13		2E-12
Alpha-Chlordane	2.00E-04	3.50E-01	ND	1.74E-10					1.77E-11	2.53E-13	9E-08	9E-14
Aroclor-1254	NA	4.00E-01	3.23E-09	2.88E-08		5.13E-12		2E-12		4.19E-11		2E-11
Aroclor-1260	NA	4.00E-01	ND	3.45E-09						5.02E-12		2E-12
Beta-BHC	NA	1.86E+00	ND	1.63E-10						2.37E-13		4E-13
Dieldrin	NA	1.61E+01	7.02E-11	5.27E-10		1.12E-13		2E-12		7.66E-13		1E-11
Endosulfan I	NA	NA	1.99E-11	1.60E-10								
Endosulfan II	NA	NA	ND	3.75E-10								
Endrin	NA	NA	4.13E-11	4.35E-10								
Endrin aldehyde	NA	NA	4.68E-11	3.27E-10								
Gamma-Chlordane	2.00E-04	3.50E-01	6.39E-11	4.40E-10	1.42E-12	1.02E-13	7E-09	4E-14	4.48E-11	6.40E-13	2E-07	2E-13
Heptachlor	NA	4.55E+00	ND	2.00E-10						2.91E-13		1E-12
Heptachlor epoxide	NA	9.10E+00	3.15E-11	2.26E-10		5.00E-14		5E-13		3.29E-13		3E-12
Metals												
Copper	NA	NA	3.83E-07	4.60E-06								
Cyanide	NA	NA	1.06E-08	5.95E-08								
Selenium	NA	NA	1.26E-08	8.25E-08								
Thallium	NA	NA	1.82E-08	1.17E-07								
Total Hazard Quotient and Cancer Risk:							7E-09	4E-12			2E-06	4E-11

Assumptions for Future Recreational Visitor (Child)			Assumptions for Future Construction Worker		
CA =	EPC Surface Only		CA =	EPC Surface and Sub-Surface	
BW =	15	kg	BW =	70	kg
IR =	8.7	m3/day	IR =	10.4	m3/day
EF =	14	days/year	EF =	250	days/year
ED =	5	years	ED =	1	years
AT (Nc) =	1,825	days	AT (Nc) =	365	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5A for calculation of Air EPC
NA= Information not available.
ND = Compound not detected

TABLE L-1A (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Contribution to Lifetime Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC* from Surface Soil	Future Resident (Adult)				Future Resident (Child)				Resident
				Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Total Lifetime Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)			
Volatile Organics												
Acetone	NA	NA	2.06E-10									
Benzene	1.71E-03	2.73E-02	ND									
Ethyl benzene	2.86E-01	NA	ND									
Methyl butyl ketone	NA	NA	1.70E-11									
Methylene chloride	8.57E-01	1.65E-03	ND									
Styrene	2.86E-01	NA	ND									
Toluene	1.14E-01	NA	6.80E-11	1.86E-11		2E-10		3.78E-11		3E-10		
Total Xylenes	NA	NA	ND									
Trichloroethene	NA	6.00E-03	ND									
Semivolatile Organics												
2,4-Dimethylphenol	NA	NA	ND									
2-Methylnaphthalene	NA	NA	ND									
4-Methylphenol	NA	NA	ND									
Acenaphthene	NA	NA	ND									
Acenaphthylene	NA	NA	ND									
Anthracene	NA	NA	ND									
Benzo(a)anthracene	NA	NA	4.59E-10									
Benzo(a)pyrene	NA	NA	4.59E-10									
Benzo(b)fluoranthene	NA	NA	6.12E-10									
Benzo(ghi)perylene	NA	NA	5.27E-10									
Benzo(k)fluoranthene	NA	NA	4.42E-10									
Bis(2-Ethylhexyl)phthalate	NA	NA	1.24E-09									
Butylbenzylphthalate	NA	NA	3.89E-10									
Carbazole	NA	NA	4.68E-10									
Chrysene	NA	NA	8.67E-10									
Di-n-butylphthalate	NA	NA	9.10E-10									
Di-n-octylphthalate	NA	NA	3.98E-10									
Dibenz(a,h)anthracene	NA	NA	4.68E-10									
Dibenzofuran	NA	NA	3.79E-10									
Fluoranthene	NA	NA	4.15E-10									
Fluorene	NA	NA	3.77E-10									
Indeno(1,2,3-cd)pyrene	NA	NA	4.85E-10									
Naphthalene	8.60E-04	NA	ND									
Phenanthrene	NA	NA	4.05E-10									
Phenol	NA	NA	ND									
Pyrene	NA	NA	3.74E-10									
Pesticides/PCBs												
4,4'-DDE	NA	NA	6.94E-11									
4,4'-DDT	NA	3.40E-01	1.04E-10		9.72E-12		3E-12		4.94E-12		2E-12	5E-12
Aldrin	NA	1.72E+01	ND									
Alpha-BHC	NA	6.30E+00	ND									
Alpha-Chlordane	2.00E-04	3.50E-01	ND									
Aroclor-1254	NA	4.00E-01	3.23E-09		3.03E-10		1E-10		1.54E-10		6E-11	2E-10
Aroclor-1260	NA	4.00E-01	ND									
Beta-BHC	NA	1.86E+00	ND									
Dieldrin	NA	1.61E+01	7.02E-11		6.60E-12		1E-10		3.35E-12		5E-11	2E-10
Endosulfan I	NA	NA	1.99E-11									
Endosulfan II	NA	NA	ND									
Endrin	NA	NA	4.13E-11									
Endrin aldehyde	NA	NA	4.68E-11									
Gamma-Chlordane	2.00E-04	3.50E-01	6.39E-11	1.75E-11	6.00E-12	9E-08	2E-12	3.56E-11	3.05E-12	2E-07	1E-12	3E-12
Heptachlor	NA	4.55E+00	ND									
Heptachlor epoxide	NA	9.10E+00	3.15E-11		2.95E-12		3E-11		1.50E-12		1E-11	4E-11
Metals												
Copper	NA	NA	3.83E-07									
Cyanide	NA	NA	1.06E-08									
Selenium	NA	NA	1.26E-08									
Thallium	NA	NA	1.82E-08									
Total Hazard Quotient and Cancer Risk:						9E-08				2E-07		4E-10

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CA =	EPC Surface Only	CA =	EPC Surface Only
BW =	70 kg	BW =	15 kg
IR =	20 m3/day	IR =	8.7 m3/day
EF =	350 days/year	EF =	350 days/year
ED =	24 years	ED =	6 years
AT (Nc) =	8,760 days	AT (Nc) =	2,190 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5A for calculation of Air EPC
NA= Information not available.
ND = Compound not detected.

TABLE L-1B (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC* from Surface Soil	Air EPC* from Total Soils	Current Site Worker				Future Outdoor Park Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	NA	NA	1.69E-10	1.24E-09								
Chlorobenzene	5.70E-03	NA	ND	7.15E-10								
Methylene chloride	8.57E-01	1.65E-03	ND	1.12E-09								
Tetrachloroethene	NA	2.00E-03	ND	2.86E-10								
Toluene	1.14E-01	NA	ND	1.05E-09								
Total Xylenes	NA	NA	ND	9.04E-10								
Trichloroethene	NA	6.00E-03	ND	2.86E-10								
Semivolatile Organics												
2-Methylnaphthalene	NA	NA	ND	3.15E-09								
Acenaphthene	NA	NA	ND	6.29E-09								
Anthracene	NA	NA	7.82E-11	9.01E-09								
Benzo(a)anthracene	NA	NA	4.42E-10	1.54E-08								
Benzo(a)pyrene	NA	NA	3.40E-10	1.23E-08								
Benzo(b)fluoranthene	NA	NA	4.76E-10	1.53E-08								
Benzo(ghi)perylene	NA	NA	4.51E-10	1.15E-08								
Benzo(k)fluoranthene	NA	NA	4.68E-10	1.50E-08								
Bis(2-Ethylhexyl)phthalate	NA	NA	9.86E-11	2.29E-09								
Butylbenzylphthalate	NA	NA	ND	4.29E-09								
Carbazole	NA	NA	4.03E-10	5.72E-09								
Chrysene	NA	NA	3.79E-10	1.62E-08								
Di-n-butylphthalate	NA	NA	7.65E-11	7.44E-09								
Di-n-octylphthalate	NA	NA	1.24E-10	2.86E-09								
Dibenz(a,h)anthracene	NA	NA	3.96E-10	1.24E-08								
Fluoranthene	NA	NA	6.14E-10	1.52E-08								
Fluorene	NA	NA	ND	5.01E-09								
Indeno(1,2,3-cd)pyrene	NA	NA	4.51E-10	1.33E-08								
N-Nitrosodiphenylamine	NA	NA	ND	2.13E-08								
Naphthalene	8.60E-04	NA	ND	1.86E-09								
Phenanthrene	NA	NA	3.57E-10	1.52E-08								
Pyrene	NA	NA	6.12E-10	1.47E-08								
Dibenzofuran	NA	NA	ND	5.86E-10								
Pesticides/PCBs												
4,4'-DDD	NA	NA	7.53E-11	3.66E-10								
4,4'-DDE	NA	NA	ND	3.23E-10								
4,4'-DDT	NA	3.40E-01	3.62E-11	3.33E-10		9.72E-14		3E-14		7.09E-13		2E-13
Alpha-BHC	NA	6.30E+00	ND	1.66E-10								
Alpha-Chlordane	2.00E-04	3.50E-01	ND	1.53E-10								
Aroclor-1254	NA	4.00E-01	ND	2.90E-09								
Aroclor-1260	NA	4.00E-01	ND	2.90E-09								
Beta-BHC	NA	1.86E+00	ND	1.52E-10								
Gamma-Chlordane	2.00E-04	3.50E-01	ND	1.53E-10								
Heptachlor	NA	4.55E+00	ND	1.73E-10								
Heptachlor epoxide	NA	9.10E+00	ND	1.53E-10								
Metals												
Calcium	NA	NA	1.29E-06	1.37E-02								
Selenium	NA	NA	1.28E-11	1.03E-07								
Thallium	NA	NA	2.84E-11	1.25E-07								
Cyanide	NA	NA		5.05E-08								
Total Hazard Quotient and Cancer Risk:								**3E-14**				**2E-13**

Assumptions for Current Site Worker		Assumptions for Future Outdoor Park Worker	
CA =	EPC Surface Only	CA =	EPC Surface Only
BW =	70 kg	BW =	70 kg
IR =	9.6 m3/day	IR =	8 m3/day
EF =	20 days/year	EF =	175 days/year
ED =	25 years	ED =	25 years
AT (Nc) =	9,125 days	AT (Nc) =	9,125 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5B for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

TABLE L-1B (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	Air EPC* from Surface Soil (mg/m3)	Air EPC* from Total Soils (mg/m3)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Future Construction Worker Intake (mg/kg-day) (Car)	Future Construction Worker Hazard Quotient	Future Construction Worker Cancer Risk
Volatile Organics												
Acetone	NA	NA	1.69E-10	1.24E-09								
Chlorobenzene	5.70E-03	NA	ND	7.15E-10					7.28E-11		1E-08	
Methylene chloride	8.57E-01	1.65E-03	ND	1.12E-09					1.14E-10	1.63E-12	1E-10	3E-15
Tetrachloroethene	NA	2.00E-03	ND	2.86E-10						4.16E-13		8E-16
Toluene	1.14E-01	NA	ND	1.05E-09					1.07E-10		9E-10	
Total Xylenes	NA	NA	ND	9.04E-10								
Trichloroethene	NA	6.00E-03	ND	2.86E-10						4.16E-13		2E-15
Semivolatile Organics												
2-Methylnaphthalene	NA	NA	ND	3.15E-09								
Acenaphthene	NA	NA	ND	6.29E-09								
Anthracene	NA	NA	7.82E-11	9.01E-09								
Benzo(a)anthracene	NA	NA	4.42E-10	1.54E-08								
Benzo(a)pyrene	NA	NA	3.40E-10	1.23E-08								
Benzo(b)fluoranthene	NA	NA	4.76E-10	1.53E-08								
Benzo(ghi)perylene	NA	NA	4.51E-10	1.15E-08								
Benzo(k)fluoranthene	NA	NA	4.68E-10	1.50E-08								
Bis(2-Ethylhexyl)phthalate	NA	NA	9.86E-11	2.29E-09								
Butylbenzylphthalate	NA	NA	ND	4.29E-09								
Carbazole	NA	NA	4.03E-10	5.72E-09								
Chrysene	NA	NA	3.79E-10	1.62E-08								
Di-n-butylphthalate	NA	NA	7.65E-11	7.44E-09								
Di-n-octylphthalate	NA	NA	1.24E-10	2.86E-09								
Dibenz(a,h)anthracene	NA	NA	3.96E-10	1.24E-08								
Fluoranthene	NA	NA	6.14E-10	1.52E-08								
Fluorene	NA	NA	ND	5.01E-09								
Indeno(1,2,3-cd)pyrene	NA	NA	4.51E-10	1.33E-08								
N-Nitrosodiphenylamine	NA	NA	ND	2.13E-08								
Naphthalene	8.60E-04	NA	ND	1.86E-09					1.89E-10		2E-07	
Phenanthrene	NA	NA	3.57E-10	1.52E-08								
Pyrene	NA	NA	6.12E-10	1.47E-08								
Dibenzofuran	NA	NA	ND	5.86E-10								
Pesticides/PCBs												
4,4'-DDD	NA	NA	7.53E-11	3.66E-10								
4,4'-DDE	NA	NA	ND	3.23E-10								
4,4'-DDT	NA	3.40E-01	3.62E-11	3.33E-10		5.75E-14		2E-14		4.84E-13		2E-13
Alpha-BHC	NA	6.30E+00	ND	1.66E-10						2.41E-13		2E-12
Alpha-Chlordane	2.00E-04	3.50E-01	ND	1.53E-10					1.56E-11	2.22E-13	8E-08	8E-14
Aroclor-1254	NA	4.00E-01	ND	2.90E-09						4.22E-12		2E-12
Aroclor-1260	NA	4.00E-01	ND	2.90E-09						4.22E-12		2E-12
Beta-BHC	NA	1.86E+00	ND	1.52E-10						2.20E-13		4E-13
Gamma-Chlordane	2.00E-04	3.50E-01	ND	1.53E-10					1.56E-11	2.22E-13	8E-08	8E-14
Heptachlor	NA	4.55E+00	ND	1.73E-10						2.52E-13		1E-12
Heptachlor epoxide	NA	9.10E+00	ND	1.53E-10						2.22E-13		2E-12
Metals												
Calcium	NA	NA	1.29E-06	1.37E-02								
Selenium	NA	NA	1.28E-11	1.03E-07								
Thallium	NA	NA	2.84E-11	1.25E-07								
Cyanide	NA	NA		5.05E-08								
Total Hazard Quotient and Cancer Risk:								**2E-14**			**4E-07**	**9E-12**

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CA =	EPC Surface Only	CA =	EPC Surface and Sub-Surface
BW =	15 kg	BW =	70 kg
IR =	8.7 m3/day	IR =	10.4 m3/day
EF =	14 days/year	EF =	250 days/year
ED =	5 years	ED =	1 years
AT (Nc) =	1,825 days	AT (Nc) =	365 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5B for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

TABLE L-1B (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Contribution to Lifetime Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC* from Surface Soil	Future Resident (Adult)				Future Resident (Child)				Resident
				Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Total Lifetime Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)			
Volatile Organics												
Acetone	NA	NA	1.69E-10									
Chlorobenzene	5.70E-03	NA	ND									
Methylene chloride	8.57E-01	1.65E-03	ND									
Tetrachloroethene	NA	2.00E-03	ND									
Toluene	1.14E-01	NA	ND									
Total Xylenes	NA	NA	ND									
Trichloroethene	NA	6.00E-03	ND									
Semivolatile Organics												
2-Methylnaphthalene	NA	NA	ND									
Acenaphthene	NA	NA	ND									
Anthracene	NA	NA	7.82E-11									
Benzo(a)anthracene	NA	NA	4.42E-10									
Benzo(a)pyrene	NA	NA	3.40E-10									
Benzo(b)fluoranthene	NA	NA	4.76E-10									
Benzo(ghi)perylene	NA	NA	4.51E-10									
Benzo(k)fluoranthene	NA	NA	4.68E-10									
Bis(2-Ethylhexyl)phthalate	NA	NA	9.86E-11									
Butylbenzylphthalate	NA	NA	ND									
Carbazole	NA	NA	4.03E-10									
Chrysene	NA	NA	3.79E-10									
Di-n-butylphthalate	NA	NA	7.65E-11									
Di-n-octylphthalate	NA	NA	1.24E-10									
Dibenz(a,h)anthracene	NA	NA	3.96E-10									
Fluoranthene	NA	NA	6.14E-10									
Fluorene	NA	NA	ND									
Indeno(1,2,3-cd)pyrene	NA	NA	4.51E-10									
N-Nitrosodiphenylamine	NA	NA	ND									
Naphthalene	8.60E-04	NA	ND									
Phenanthrene	NA	NA	3.57E-10									
Pyrene	NA	NA	6.12E-10									
Dibenzofuran	NA	NA	ND									
Pesticides/PCBs												
4,4'-DDD	NA	NA	7.53E-11									
4,4'-DDE	NA	NA	ND									
4,4'-DDT	NA	3.40E-01	3.62E-11		3.40E-12		1E-12		1.73E-12		6E-13	2E-12
Alpha-BHC	NA	6.30E+00	ND									
Alpha-Chlordane	2.00E-04	3.50E-01	ND									
Aroclor-1254	NA	4.00E-01	ND									
Aroclor-1260	NA	4.00E-01	ND									
Beta-BHC	NA	1.86E+00	ND									
Gamma-Chlordane	2.00E-04	3.50E-01	ND									
Heptachlor	NA	4.55E+00	ND									
Heptachlor epoxide	NA	9.10E+00	ND									
Metals												
Calcium	NA	NA	1.29E-06									
Selenium	NA	NA	1.28E-11									
Thallium	NA	NA	2.84E-11									
Cyanide	NA	NA										
Total Hazard Quotient and Cancer Risk:												2E-12

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CA =	EPC Surface Only	CA =	EPC Surface Only
BW =	70 kg	BW =	15 kg
IR =	20 m3/day	IR =	8.7 m3/day
EF =	350 days/year	EF =	350 days/year
ED =	24 years	ED =	6 years
AT (Nc) =	8,760 days	AT (Nc) =	2,190 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5B for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

TABLE L-1C (Former Dry Waste Disposal Pit)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC* from Surface Soil	Air EPC* from Total Soils	Current Site Worker				Future Outdoor Park Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	NA	NA	1.06E-10	1.57E-09								
Benzene	1.71E-03	2.73E-02	ND	2.86E-10								
Carbon disulfide	2.00E-01	NA	ND	4.29E-10								
Methyl ethyl ketone	2.86E-01	NA	ND	4.29E-10								
Methylene chloride	8.57E-01	1.65E-03	ND	2.86E-10								
Toluene	1.14E-01	NA	1.36E-10	8.84E-10	1.02E-12		9E-12		7.47E-12		7E-11	
Semivolatile Organics												
1,2,4-Trichlorobenzene	NA	NA	4.00E-10	3.36E-09								
2-Methylnaphthalene	NA	NA	9.35E-11	7.87E-10								
Benzo(a)anthracene	NA	NA	4.42E-10	3.72E-09								
Benzo(a)pyrene	NA	NA	3.40E-10	2.86E-09								
Benzo(b)fluoranthene	NA	NA	5.78E-10	4.86E-09								
Benzo(ghi)perylene	NA	NA	4.00E-10	3.36E-09								
Benzo(k)fluoranthene	NA	NA	3.40E-10	2.86E-09								
Bis(2-Ethylhexyl)phthalate	NA	NA	6.12E-10	1.00E-08								
Butylbenzylphthalate	NA	NA	1.00E-10	1.03E-09								
Chrysene	NA	NA	5.44E-10	4.58E-09								
Di-n-butylphthalate	NA	NA	3.42E-10	1.70E-08								
Di-n-octylphthalate	NA	NA	2.55E-10	4.86E-09								
Diethyl phthalate	NA	NA	1.87E-10	1.57E-09								
Fluoranthene	NA	NA	9.44E-10	9.15E-09								
Indeno(1,2,3-cd)pyrene	NA	NA	1.05E-10	8.72E-10								
Naphthalene	8.60E-04	NA	9.18E-11	7.72E-10	6.90E-13		8E-10		5.03E-12		6E-09	
Phenanthrene	NA	NA	5.78E-10	4.86E-09								
Pyrene	NA	NA	5.22E-10	7.29E-09								
Pesticides/PCBs												
4,4'-DDE	NA	NA	3.40E-11	2.75E-10								
4,4'-DDT	NA	3.40E-01	4.32E-11	2.83E-10		1.16E-13		4E-14		8.45E-13		3E-13
Aroclor-1242	NA	NA	2.89E-10	2.43E-09								
Aroclor-1254	NA	4.00E-01	3.54E-10	2.76E-09		9.49E-13		4E-13		6.92E-12		3E-12
Aroclor-1260	NA	4.00E-01	3.62E-10	2.76E-09		9.72E-13		4E-13		7.09E-12		3E-12
Endrin aldehyde	NA	NA	3.50E-11	2.76E-10								
Metals												
Calcium	NA	NA	1.37E-03	1.59E-02								
Copper	NA	NA	3.96E-07	3.30E-06								
Magnesium	NA	NA	2.33E-04	2.17E-03								
Selenium	NA	NA	1.29E-08	8.84E-08								
Thallium	NA	NA	1.97E-08	1.20E-07								
Total Hazard Quotient and Cancer Risk:							**8E-10**	**8E-13**			**6E-09**	**6E-12**

Assumptions for Current Site Worker		Assumptions for Future Outdoor Park Worker	
CA =	EPC Surface Only	CA =	EPC Surface Only
BW =	70 kg	BW =	70 kg
IR =	9.6 m3/day	IR =	8 m3/day
EF =	20 days/year	EF =	175 days/year
ED =	25 years	ED =	25 years
AT (Nc) =	9,125 days	AT (Nc) =	9,125 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5C for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

TABLE L-1C (Former Dry Waste Disposal Pit)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC* from Surface Soil	Air EPC* from Total Soils	Future Recreational Visitor (Child)				Future Construction Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	NA	NA	1.06E-10	1.57E-09								
Benzene	1.71E-03	2.73E-02	ND	2.86E-10					2.91E-11	4.16E-13	2E-08	1E-14
Carbon disulfide	2.00E-01	NA	ND	4.29E-10					4.37E-11		2E-10	
Methyl ethyl ketone	2.86E-01	NA	ND	4.29E-10					4.37E-11		2E-10	
Methylene chloride	8.57E-01	1.65E-03	ND	2.86E-10					2.91E-11	4.16E-13	3E-11	7E-16
Toluene	1.14E-01	NA	1.36E-10	8.84E-10	3.03E-12		3E-11		8.99E-11		8E-10	
Semivolatile Organics												
1,2,4-Trichlorobenzene	NA	NA	4.00E-10	3.36E-09								
2-Methylnaphthalene	NA	NA	9.35E-11	7.87E-10								
Benzo(a)anthracene	NA	NA	4.42E-10	3.72E-09								
Benzo(a)pyrene	NA	NA	3.40E-10	2.86E-09								
Benzo(b)fluoranthene	NA	NA	5.78E-10	4.86E-09								
Benzo(ghi)perylene	NA	NA	4.00E-10	3.36E-09								
Benzo(k)fluoranthene	NA	NA	3.40E-10	2.86E-09								
Bis(2-Ethylhexyl)phthalate	NA	NA	6.12E-10	1.00E-08								
Butylbenzylphthalate	NA	NA	1.00E-10	1.03E-09								
Chrysene	NA	NA	5.44E-10	4.58E-09								
Di-n-butylphthalate	NA	NA	3.42E-10	1.70E-08								
Di-n-octylphthalate	NA	NA	2.55E-10	4.86E-09								
Diethyl phthalate	NA	NA	1.87E-10	1.57E-09								
Fluoranthene	NA	NA	9.44E-10	9.15E-09								
Indeno(1,2,3-cd)pyrene	NA	NA	1.05E-10	8.72E-10								
Naphthalene	8.60E-04	NA	9.18E-11	7.72E-10	2.04E-12		2E-09		7.86E-11		9E-08	
Phenanthrene	NA	NA	5.78E-10	4.86E-09								
Pyrene	NA	NA	5.22E-10	7.29E-09								
Pesticides/PCBs												
4,4'-DDE	NA	NA	3.40E-11	2.75E-10								
4,4'-DDT	NA	3.40E-01	4.32E-11	2.83E-10		6.86E-14		2E-14		4.12E-13		1E-13
Aroclor-1242	NA	NA	2.89E-10	2.43E-09								
Aroclor-1254	NA	4.00E-01	3.54E-10	2.76E-09		5.62E-13		2E-13		4.01E-12		2E-12
Aroclor-1260	NA	4.00E-01	3.62E-10	2.76E-09		5.75E-13		2E-13		4.01E-12		2E-12
Endrin aldehyde	NA	NA	3.50E-11	2.76E-10								
Metals												
Calcium	NA	NA	1.37E-03	1.59E-02								
Copper	NA	NA	3.96E-07	3.30E-06								
Magnesium	NA	NA	2.33E-04	2.17E-03								
Selenium	NA	NA	1.29E-08	8.84E-08								
Thallium	NA	NA	1.97E-08	1.20E-07								
Total Hazard Quotient and Cancer Risk:							**2E-09**	**5E-13**			**1E-07**	**3E-12**

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CA =	EPC Surface Only	CA =	EPC Surface and Sub-Surface
BW =	15 kg	BW =	70 kg
IR =	8.7 m3/day	IR =	10.4 m3/day
EF =	14 days/year	EF =	250 days/year
ED =	5 years	ED =	1 years
AT (Nc) =	1,825 days	AT (Nc) =	365 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5C for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

TABLE L-1C (Former Dry Waste Disposal Pit)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Contribution to Lifetime Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	Air EPC* from Surface Soil (mg/m3)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics												
Acetone	NA	NA	1.06E-10									
Benzene	1.71E-03	2.73E-02	ND									
Carbon disulfide	2.00E-01	NA	ND									
Methyl ethyl ketone	2.86E-01	NA	ND									
Methylene chloride	8.57E-01	1.65E-03	ND									
Toluene	1.14E-01	NA	1.36E-10	3.74E-11		3E-10		7.58E-11		7E-10		
Semivolatile Organics												
1,2,4-Trichlorobenzene	NA	NA	4.00E-10									
2-Methylnaphthalene	NA	NA	9.35E-11									
Benzo(a)anthracene	NA	NA	4.42E-10									
Benzo(a)pyrene	NA	NA	3.40E-10									
Benzo(b)fluoranthene	NA	NA	5.78E-10									
Benzo(ghi)perylene	NA	NA	4.00E-10									
Benzo(k)fluoranthene	NA	NA	3.40E-10									
Bis(2-Ethylhexyl)phthalate	NA	NA	6.12E-10									
Butylbenzylphthalate	NA	NA	1.00E-10									
Chrysene	NA	NA	5.44E-10									
Di-n-butylphthalate	NA	NA	3.42E-10									
Di-n-octylphthalate	NA	NA	2.55E-10									
Diethyl phthalate	NA	NA	1.87E-10									
Fluoranthene	NA	NA	9.44E-10									
Indeno(1,2,3-cd)pyrene	NA	NA	1.05E-10									
Naphthalene	8.60E-04	NA	9.18E-11	2.52E-11		3E-08		5.11E-11		6E-08		
Phenanthrene	NA	NA	5.78E-10									
Pyrene	NA	NA	5.22E-10									
Pesticides/PCBs												
4,4'-DDE	NA	NA	3.40E-11									
4,4'-DDT	NA	3.40E-01	4.32E-11		4.06E-12		1E-12		2.06E-12		7E-13	2E-12
Aroclor-1242	NA	NA	2.89E-10									
Aroclor-1254	NA	4.00E-01	3.54E-10		3.32E-11		1E-11		1.69E-11		7E-12	2E-11
Aroclor-1260	NA	4.00E-01	3.62E-10		3.40E-11		1E-11		1.73E-11		7E-12	2E-11
Endrin aldehyde	NA	NA	3.50E-11									
Metals												
Calcium	NA	NA	1.37E-03									
Copper	NA	NA	3.96E-07									
Magnesium	NA	NA	2.33E-04									
Selenium	NA	NA	1.29E-08									
Thallium	NA	NA	1.97E-08									
Total Hazard Quotient and Cancer Risk:						**3E-08**				**6E-08**		**4E-11**

Assumptions for Future Resident (Adult)

CA =	EPC Surface Only
BW =	70 kg
IR =	20 m3/day
EF =	350 days/year
ED =	24 years
AT (Nc) =	8,760 days
AT (Car) =	25,550 days

Assumptions for Future Resident (Child)

CA =	EPC Surface Only
BW =	15 kg
IR =	8.7 m3/day
EF =	350 days/year
ED =	6 years
AT (Nc) =	2,190 days
AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5C for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

TABLE L-2A (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
CENTRAL TENDENCY(CT) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC* from Surface Soil	Air EPC* from Total Soils	Current Site Worker				Future Outdoor Park Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	NA	NA	2.06E-10	1.48E-09								
Benzene	1.71E-03	2.73E-02	ND	8.28E-10								
Ethyl benzene	2.86E-01	NA	ND	1.24E-09								
Methyl butyl ketone	NA	NA	1.70E-11	1.38E-10								
Methylene chloride	8.57E-01	1.65E-03	ND	4.14E-10								
Styrene	2.86E-01	NA	ND	1.01E-09								
Toluene	1.14E-01	NA	6.80E-11	9.88E-10	2.55E-13		2E-12		3.26E-12		3E-11	
Total Xylenes	NA	NA	ND	1.99E-09								
Trichloroethene	NA	6.00E-03	ND	1.01E-09								
Semivolatile Organics												
2,4-Dimethylphenol	NA	NA	ND	3.45E-09								
2-Methylnaphthalene	NA	NA	ND	6.90E-09								
4-Methylphenol	NA	NA	ND	1.07E-08								
Acenaphthene	NA	NA	ND	3.17E-09								
Acenaphthylene	NA	NA	ND	4.55E-09								
Anthracene	NA	NA	ND	1.11E-08								
Benzo(a)anthracene	NA	NA	4.59E-10	1.17E-08								
Benzo(a)pyrene	NA	NA	4.59E-10	1.11E-08								
Benzo(b)fluoranthene	NA	NA	6.12E-10	1.13E-08								
Benzo(ghi)perylene	NA	NA	5.27E-10	1.22E-08								
Benzo(k)fluoranthene	NA	NA	4.42E-10	1.08E-08								
Bis(2-Ethylhexyl)phthalate	NA	NA	1.24E-09	2.29E-08								
Butylbenzylphthalate	NA	NA	3.89E-10	3.16E-09								
Carbazole	NA	NA	4.68E-10	3.80E-09								
Chrysene	NA	NA	8.67E-10	1.24E-08								
Di-n-butylphthalate	NA	NA	9.10E-10	1.52E-08								
Di-n-octylphthalate	NA	NA	3.98E-10	7.45E-09								
Dibenz(a,h)anthracene	NA	NA	4.68E-10	7.26E-09								
Dibenzofuran	NA	NA	3.79E-10	3.08E-09								
Fluoranthene	NA	NA	4.15E-10	1.32E-08								
Fluorene	NA	NA	3.77E-10	6.87E-09								
Indeno(1,2,3-cd)pyrene	NA	NA	4.85E-10	1.19E-08								
Naphthalene	8.60E-04	NA	ND	1.35E-08								
Phenanthrene	NA	NA	4.05E-10	1.33E-08								
Phenol	NA	NA	ND	1.06E-08								
Pyrene	NA	NA	3.74E-10	1.41E-08								
Pesticides/PCBs												
4,4'-DDE	NA	NA	6.94E-11	5.33E-10								
4,4'-DDT	NA	3.40E-01	1.04E-10	4.02E-10		3.89E-14		1E-14		4.96E-13		2E-13
Aldrin	NA	1.72E+01	ND	1.09E-10								
Alpha-BHC	NA	6.30E+00	ND	2.19E-10								
Alpha-Chlordane	2.00E-04	3.50E-01	ND	1.74E-10								
Aroclor-1254	NA	4.00E-01	3.23E-09	2.88E-08		1.21E-12		5E-13		1.55E-11		6E-12
Aroclor-1260	NA	4.00E-01	ND	3.45E-09								
Beta-BHC	NA	1.86E+00	ND	1.63E-10								
Dieldrin	NA	1.61E+01	7.02E-11	5.27E-10		2.64E-14		4E-13		3.36E-13		5E-12
Endosulfan I	NA	NA	1.99E-11	1.60E-10								
Endosulfan II	NA	NA	ND	3.75E-10								
Endrin	NA	NA	4.13E-11	4.35E-10								
Endrin aldehyde	NA	NA	4.68E-11	3.27E-10								
Gamma-Chlordane	2.00E-04	3.50E-01	6.39E-11	4.40E-10	2.40E-13	2.40E-14	1E-09	8E-15	3.06E-12	3.06E-13	2E-08	1E-13
Heptachlor	NA	4.55E+00	ND	2.00E-10								
Heptachlor epoxide	NA	9.10E+00	3.15E-11	2.26E-10		1.18E-14		1E-13		1.51E-13		1E-12
Metals												
Copper	NA	NA	3.83E-07	4.60E-06								
Cyanide	NA	NA	1.06E-08	5.95E-08								
Selenium	NA	NA	1.26E-08	8.25E-08								
Thallium	NA	NA	1.82E-08	1.17E-07								
Total Hazard Quotient and Cancer Risk:							1E-09	1E-12			2E-08	1E-11

Assumptions for Future Current Site Worker			Assumptions for Future Outdoor Park Worker		
CA =	EPC Surface Only		CA =	EPC Surface Only	
BW =	70	kg	BW =	70	kg
IR =	9.6	m3/day	IR =	8	m3/day
EF =	10	days/year	EF =	153	days/year
ED =	7	years	ED =	7	years
AT (Nc) =	2555	days	AT (Nc) =	2555	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5A for calculation of Air EPC
NA= Information not available
ND = Compound not detected

TABLE L-2A (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
CENTRAL TENDENCY(CT) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Variables (Assumptions for Each Receptor are Listed at the Bottom)
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC* from Surface Soil	Air EPC* from Total Soils	Future Recreational Visitor (Child)				Future Construction Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	NA	NA	2.06E-10	1.48E-09								
Benzene	1.71E-03	2.73E-02	ND	8.28E-10					7.38E-11	1.05E-12	4E-08	3E-14
Ethyl benzene	2.86E-01	NA	ND	1.24E-09					1.11E-10		4E-10	
Methyl butyl ketone	NA	NA	1.70E-11	1.38E-10								
Methylene chloride	8.57E-01	1.65E-03	ND	4.14E-10					3.69E-11	5.27E-13	4E-11	9E-16
Styrene	2.86E-01	NA	ND	1.01E-09					8.99E-11		3E-10	
Toluene	1.14E-01	NA	6.80E-11	9.88E-10	7.56E-13		7E-12		8.81E-11		8E-10	
Total Xylenes	NA	NA	ND	1.99E-09								
Trichloroethene	NA	6.00E-03	ND	1.01E-09						1.29E-12		8E-15
Semivolatile Organics												
2,4-Dimethylphenol	NA	NA	ND	3.45E-09								
2-Methylnaphthalene	NA	NA	ND	6.90E-09								
4-Methylphenol	NA	NA	ND	1.07E-08								
Acenaphthene	NA	NA	ND	3.17E-09								
Acenaphthylene	NA	NA	ND	4.55E-09								
Anthracene	NA	NA	ND	1.11E-08								
Benzo(a)anthracene	NA	NA	4.59E-10	1.17E-08								
Benzo(a)pyrene	NA	NA	4.59E-10	1.11E-08								
Benzo(b)fluoranthene	NA	NA	6.12E-10	1.13E-08								
Benzo(ghi)perylene	NA	NA	5.27E-10	1.22E-08								
Benzo(k)fluoranthene	NA	NA	4.42E-10	1.08E-08								
Bis(2-Ethylhexyl)phthalate	NA	NA	1.24E-09	2.29E-08								
Butylbenzylphthalate	NA	NA	3.89E-10	3.16E-09								
Carbazole	NA	NA	4.68E-10	3.80E-09								
Chrysene	NA	NA	8.67E-10	1.24E-08								
Di-n-butylphthalate	NA	NA	9.10E-10	1.52E-08								
Di-n-octylphthalate	NA	NA	3.98E-10	7.45E-09								
Dibenz(a,h)anthracene	NA	NA	4.68E-10	7.26E-09								
Dibenzofuran	NA	NA	3.79E-10	3.08E-09								
Fluoranthene	NA	NA	4.15E-10	1.32E-08								
Fluorene	NA	NA	3.77E-10	6.87E-09								
Indeno(1,2,3-cd)pyrene	NA	NA	4.85E-10	1.19E-08								
Naphthalene	8.60E-04	NA	ND	1.35E-08					1.20E-09		1E-06	
Phenanthrene	NA	NA	4.05E-10	1.33E-08								
Phenol	NA	NA	ND	1.06E-08								
Pyrene	NA	NA	3.74E-10	1.41E-08								
Pesticides/PCBs												
4,4'-DDE	NA	NA	6.94E-11	5.33E-10								
4,4'-DDT	NA	3.40E-01	1.04E-10	4.02E-10		1.65E-14		6E-15		5.11E-13		2E-13
Aldrin	NA	1.72E+01	ND	1.09E-10						1.39E-13		2E-12
Alpha-BHC	NA	6.30E+00	ND	2.19E-10						2.79E-13		2E-12
Alpha-Chlordane	2.00E-04	3.50E-01	ND	1.74E-10					1.55E-11	2.21E-13	8E-08	8E-14
Aroclor-1254	NA	4.00E-01	3.23E-09	2.88E-08		5.13E-13		2E-13		3.67E-11		1E-11
Aroclor-1260	NA	4.00E-01	ND	3.45E-09						4.39E-12		2E-12
Beta-BHC	NA	1.86E+00	ND	1.63E-10						2.07E-13		4E-13
Dieldrin	NA	1.61E+01	7.02E-11	5.27E-10		1.12E-14		2E-13		6.71E-13		1E-11
Endosulfan I	NA	NA	1.99E-11	1.60E-10								
Endosulfan II	NA	NA	ND	3.75E-10								
Endrin	NA	NA	4.13E-11	4.35E-10								
Endrin aldehyde	NA	NA	4.68E-11	3.27E-10								
Gamma-Chlordane	2.00E-04	3.50E-01	6.39E-11	4.40E-10	7.11E-13	1.02E-14	4E-09	4E-15	3.92E-11	5.61E-13	2E-07	2E-13
Heptachlor	NA	4.55E+00	ND	2.00E-10						2.55E-13		1E-12
Heptachlor epoxide	NA	9.10E+00	3.15E-11	2.26E-10		5.00E-15		5E-14		2.88E-13		3E-12
Metals												
Copper	NA	NA	3.83E-07	4.60E-06								
Cyanide	NA	NA	1.06E-08	5.95E-08								
Selenium	NA	NA	1.26E-08	8.25E-08								
Thallium	NA	NA	1.82E-08	1.17E-07								
Total Hazard Quotient and Cancer Risk:							**4E-09**	**4E-13**			**2E-06**	**4E-11**

Assumptions for Future Recreational Visitor (Child)			Assumptions for Future Construction Worker		
CA =	EPC Surface Only		CA =	EPC Surface and Sub-Surface	
BW =	15	kg	BW =	70	kg
IR =	8.7	m3/day	IR =	10.4	m3/day
EF =	7	days/year	EF =	219	days/year
ED =	1	years	ED =	1	years
AT (Nc) =	365	days	AT (Nc) =	365	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5A for calculation of Air EPC
NA= Information not available
ND = Compound not detected

TABLE L-2A (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
CENTRAL TENDENCY(CT) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Contribution to Lifetime Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	Air EPC* from Surface Soil (mg/m3)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics												
Acetone	NA	NA	2.06E-10									
Benzene	1.71E-03	2.73E-02	ND									
Ethyl benzene	2.86E-01	NA	ND									
Methyl butyl ketone	NA	NA	1.70E-11									
Methylene chloride	8.57E-01	1.65E-03	ND									
Styrene	2.86E-01	NA	ND									
Toluene	1.14E-01	NA	6.80E-11	1.25E-11		1E-10		2.53E-11		2E-10		
Total Xylenes	NA	NA	ND									
Trichloroethene	NA	6.00E-03	ND									
Semivolatile Organics												
2,4-Dimethylphenol	NA	NA	ND									
2-Methylnaphthalene	NA	NA	ND									
4-Methylphenol	NA	NA	ND									
Acenaphthene	NA	NA	ND									
Acenaphthylene	NA	NA	ND									
Anthracene	NA	NA	ND									
Benzo(a)anthracene	NA	NA	4.59E-10									
Benzo(a)pyrene	NA	NA	4.59E-10									
Benzo(b)fluoranthene	NA	NA	6.12E-10									
Benzo(ghi)perylene	NA	NA	5.27E-10									
Benzo(k)fluoranthene	NA	NA	4.42E-10									
Bis(2-Ethylhexyl)phthalate	NA	NA	1.24E-09									
Butylbenzylphthalate	NA	NA	3.89E-10									
Carbazole	NA	NA	4.68E-10									
Chrysene	NA	NA	8.67E-10									
Di-n-butylphthalate	NA	NA	9.10E-10									
Di-n-octylphthalate	NA	NA	3.98E-10									
Dibenz(a,h)anthracene	NA	NA	4.68E-10									
Dibenzofuran	NA	NA	3.79E-10									
Fluoranthene	NA	NA	4.15E-10									
Fluorene	NA	NA	3.77E-10									
Indeno(1,2,3-cd)pyrene	NA	NA	4.85E-10									
Naphthalene	8.60E-04	NA	ND									
Phenanthrene	NA	NA	4.05E-10									
Phenol	NA	NA	ND									
Pyrene	NA	NA	3.74E-10									
Pesticides/PCBs												
4,4'-DDE	NA	NA	6.94E-11									
4,4'-DDT	NA	3.40E-01	1.04E-10		1.90E-12		6E-13		1.10E-12		4E-13	1E-12
Aldrin	NA	1.72E+01	ND									
Alpha-BHC	NA	6.30E+00	ND									
Alpha-Chlordane	2.00E-04	3.50E-01	ND									
Aroclor-1254	NA	4.00E-01	3.23E-09		5.92E-11		2E-11		3.43E-11		1E-11	4E-11
Aroclor-1260	NA	4.00E-01	ND									
Beta-BHC	NA	1.86E+00	ND									
Dieldrin	NA	1.61E+01	7.02E-11		1.29E-12		2E-11		7.46E-13		1E-11	3E-11
Endosulfan I	NA	NA	1.99E-11									
Endosulfan II	NA	NA	ND									
Endrin	NA	NA	4.13E-11									
Endrin aldehyde	NA	NA	4.68E-11									
Gamma-Chlordane	2.00E-04	3.50E-01	6.39E-11	1.17E-11	1.17E-12	6E-08	4E-13	2.38E-11	6.79E-13	1E-07	2E-13	6E-13
Heptachlor	NA	4.55E+00	ND									
Heptachlor epoxide	NA	9.10E+00	3.15E-11		5.76E-13		5E-12		3.34E-13		3E-12	8E-12
Metals												
Copper	NA	NA	3.83E-07									
Cyanide	NA	NA	1.06E-08									
Selenium	NA	NA	1.26E-08									
Thallium	NA	NA	1.82E-08									
Total Hazard Quotient and Cancer Risk:						6E-08				1E-07		8E-11

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CA =	EPC Surface Only	CA =	EPC Surface Only
BW =	70 kg	BW =	15 kg
IR =	20 m3/day	IR =	8.7 m3/day
EF =	234 days/year	EF =	234 days/year
ED =	7 years	ED =	2 years
AT (Nc) =	2555 days	AT (Nc) =	730 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5A for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected

TABLE L-2B (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
CENTRAL TENDENCY(CT) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC* from Surface Soil	Air EPC* from Total Soils	Current Site Worker				Future Outdoor Park Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	NA	NA	1.69E-10	1.24E-09								
Chlorobenzene	5.70E-03	NA	ND	7.15E-10								
Methylene chloride	8.57E-01	1.65E-03	ND	1.12E-09								
Tetrachloroethene	NA	2.00E-03	ND	2.86E-10								
Toluene	1.14E-01	NA	ND	1.05E-09								
Total Xylenes	NA	NA	ND	9.04E-10								
Trichloroethene	NA	6.00E-03	ND	2.86E-10								
Semivolatile Organics												
2-Methylnaphthalene	NA	NA	ND	3.15E-09								
Acenaphthene	NA	NA	ND	6.29E-09								
Anthracene	NA	NA	7.82E-11	9.01E-09								
Benzo(a)anthracene	NA	NA	4.42E-10	1.54E-08								
Benzo(a)pyrene	NA	NA	3.40E-10	1.23E-08								
Benzo(b)fluoranthene	NA	NA	4.76E-10	1.53E-08								
Benzo(ghi)perylene	NA	NA	4.51E-10	1.15E-08								
Benzo(k)fluoranthene	NA	NA	4.68E-10	1.50E-08								
Bis(2-Ethylhexyl)phthalate	NA	NA	9.86E-11	2.29E-09								
Butylbenzylphthalate	NA	NA	ND	4.29E-09								
Carbazole	NA	NA	4.03E-10	5.72E-09								
Chrysene	NA	NA	3.79E-10	1.62E-08								
Di-n-butylphthalate	NA	NA	7.65E-11	7.44E-09								
Di-n-octylphthalate	NA	NA	1.24E-10	2.86E-09								
Dibenz(a,h)anthracene	NA	NA	3.96E-10	1.24E-08								
Fluoranthene	NA	NA	6.14E-10	1.52E-08								
Fluorene	NA	NA	ND	5.01E-09								
Indeno(1,2,3-cd)pyrene	NA	NA	4.51E-10	1.33E-08								
N-Nitrosodiphenylamine	NA	NA	ND	2.13E-08								
Naphthalene	8.60E-04	NA	ND	1.86E-09								
Phenanthrene	NA	NA	3.57E-10	1.52E-08								
Pyrene	NA	NA	6.12E-10	1.47E-08								
Dibenzofuran	NA	NA	ND	5.86E-10								
Pesticides/PCBs												
4,4'-DDD	NA	NA	7.53E-11	3.66E-10								
4,4'-DDE	NA	NA	ND	3.23E-10								
4,4'-DDT	NA	3.40E-01	3.62E-11	3.33E-10		1.36E-14		5E-15		1.73E-13		6E-14
Alpha-BHC	NA	6.30E+00	ND	1.66E-10								
Alpha-Chlordane	2.00E-04	3.50E-01	ND	1.53E-10								
Aroclor-1254	NA	4.00E-01	ND	2.90E-09								
Aroclor-1260	NA	4.00E-01	ND	2.90E-09								
Beta-BHC	NA	1.86E+00	ND	1.52E-10								
Gamma-Chlordane	2.00E-04	3.50E-01	ND	1.53E-10								
Heptachlor	NA	4.55E+00	ND	1.73E-10								
Heptachlor epoxide	NA	9.10E+00	ND	1.53E-10								
Metals												
Calcium	NA	NA	1.29E-06	1.37E-02								
Selenium	NA	NA	1.28E-11	1.03E-07								
Thallium	NA	NA	2.84E-11	1.25E-07								
Cyanide	NA	NA	ND	5.05E-08								
Total Hazard Quotient and Cancer Risk:								**5E-15**				**6E-14**

Assumptions for Future Current Site Worker		Assumptions for Future Outdoor Park Worker	
CA =	EPC Surface Only	CA =	EPC Surface Only
BW =	70 kg	BW =	70 kg
IR =	9.6 m3/day	IR =	8 m3/day
EF =	10 days/year	EF =	153 days/year
ED =	7 years	ED =	7 years
AT (Nc) =	2555 days	AT (Nc) =	2555 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5B for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

TABLE L-2B (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
CENTRAL TENDENCY(CT) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	Air EPC* from Surface Soil (mg/m3)	Air EPC* from Total Soils (mg/m3)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Future Construction Worker Intake (mg/kg-day) (Car)	Future Construction Worker Hazard Quotient	Future Construction Worker Cancer Risk
Volatile Organics												
Acetone	NA	NA	1.69E-10	1.24E-09								
Chlorobenzene	5.70E-03	NA	ND	7.15E-10					6.37E-11		1E-08	
Methylene chloride	8.57E-01	1.65E-03	ND	1.12E-09					9.99E-11	1.43E-12	1E-10	2E-15
Tetrachloroethene	NA	2.00E-03	ND	2.86E-10						3.64E-13		7E-16
Toluene	1.14E-01	NA	ND	1.05E-09					9.39E-11		8E-10	
Total Xylenes	NA	NA	ND	9.04E-10								
Trichloroethene	NA	6.00E-03	ND	2.86E-10						3.64E-13		2E-15
Semivolatile Organics												
2-Methylnaphthalene	NA	NA	ND	3.15E-09								
Acenaphthene	NA	NA	ND	6.29E-09								
Anthracene	NA	NA	7.82E-11	9.01E-09								
Benzo(a)anthracene	NA	NA	4.42E-10	1.54E-08								
Benzo(a)pyrene	NA	NA	3.40E-10	1.23E-08								
Benzo(b)fluoranthene	NA	NA	4.76E-10	1.53E-08								
Benzo(ghi)perylene	NA	NA	4.51E-10	1.15E-08								
Benzo(k)fluoranthene	NA	NA	4.68E-10	1.50E-08								
Bis(2-Ethylhexyl)phthalate	NA	NA	9.86E-11	2.29E-09								
Butylbenzylphthalate	NA	NA	ND	4.29E-09								
Carbazole	NA	NA	4.03E-10	5.72E-09								
Chrysene	NA	NA	3.79E-10	1.62E-08								
Di-n-butylphthalate	NA	NA	7.65E-11	7.44E-09								
Di-n-octylphthalate	NA	NA	1.24E-10	2.86E-09								
Dibenz(a,h)anthracene	NA	NA	3.96E-10	1.24E-08								
Fluoranthene	NA	NA	6.14E-10	1.52E-08								
Fluorene	NA	NA	ND	5.01E-09								
Indeno(1,2,3-cd)pyrene	NA	NA	4.51E-10	1.33E-08								
N-Nitrosodiphenylamine	NA	NA	ND	2.13E-08								
Naphthalene	8.60E-04	NA	ND	1.86E-09					1.66E-10		2E-07	
Phenanthrene	NA	NA	3.57E-10	1.52E-08								
Pyrene	NA	NA	6.12E-10	1.47E-08								
Dibenzofuran	NA	NA	ND	5.86E-10								
Pesticides/PCBs												
4,4'-DDD	NA	NA	7.53E-11	3.66E-10								
4,4'-DDE	NA	NA	ND	3.23E-10								
4,4'-DDT	NA	3.40E-01	3.62E-11	3.33E-10		5.75E-15		2E-15		4.24E-13		1E-13
Alpha-BHC	NA	6.30E+00	ND	1.66E-10						2.11E-13		1E-12
Alpha-Chlordane	2.00E-04	3.50E-01	ND	1.53E-10					1.36E-11	1.95E-13	7E-08	7E-14
Aroclor-1254	NA	4.00E-01	ND	2.90E-09						3.70E-12		1E-12
Aroclor-1260	NA	4.00E-01	ND	2.90E-09						3.70E-12		1E-12
Beta-BHC	NA	1.86E+00	ND	1.52E-10						1.93E-13		4E-13
Gamma-Chlordane	2.00E-04	3.50E-01	ND	1.53E-10					1.36E-11	1.95E-13	7E-08	7E-14
Heptachlor	NA	4.55E+00	ND	1.73E-10						2.20E-13		1E-12
Heptachlor epoxide	NA	9.10E+00	ND	1.53E-10						1.95E-13		2E-12
Metals												
Calcium	NA	NA	1.29E-06	1.37E-02								
Selenium	NA	NA	1.28E-11	1.03E-07								
Thallium	NA	NA	2.84E-11	1.25E-07								
Cyanide	NA	NA	ND	5.05E-08								
Total Hazard Quotient and Cancer Risk:								**2E-15**			**3E-07**	**8E-12**

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CA =	EPC Surface Only	CA =	EPC Surface and Sub-Surface
BW =	15 kg	BW =	70 kg
IR =	8.7 m3/day	IR =	10.4 m3/day
EF =	7 days/year	EF =	219 days/year
ED =	1 years	ED =	1 years
AT (Nc) =	365 days	AT (Nc) =	365 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5B for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

TABLE L-2B (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
CENTRAL TENDENCY(CT) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Contribution to Lifetime Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Inhalation RfD	Carc. Slope Inhalation	Air EPC* from Surface Soil	Future Resident (Adult)				Future Resident (Child)				Resident
				Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Total Lifetime Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m3)	(Nc)	(Car)			(Nc)	(Car)			
Volatile Organics												
Acetone	NA	NA	1.69E-10									
Chlorobenzene	5.70E-03	NA	ND									
Methylene chloride	8.57E-01	1.65E-03	ND									
Tetrachloroethene	NA	2.00E-03	ND									
Toluene	1.14E-01	NA	ND									
Total Xylenes	NA	NA	ND									
Trichloroethene	NA	6.00E-03	ND									
Semivolatile Organics												
2-Methylnaphthalene	NA	NA	ND									
Acenaphthene	NA	NA	ND									
Anthracene	NA	NA	7.82E-11									
Benzo(a)anthracene	NA	NA	4.42E-10									
Benzo(a)pyrene	NA	NA	3.40E-10									
Benzo(b)fluoranthene	NA	NA	4.76E-10									
Benzo(ghi)perylene	NA	NA	4.51E-10									
Benzo(k)fluoranthene	NA	NA	4.68E-10									
Bis(2-Ethylhexyl)phthalate	NA	NA	9.86E-11									
Butylbenzylphthalate	NA	NA	ND									
Carbazole	NA	NA	4.03E-10									
Chrysene	NA	NA	3.79E-10									
Di-n-butylphthalate	NA	NA	7.65E-11									
Di-n-octylphthalate	NA	NA	1.24E-10									
Dibenz(a,h)anthracene	NA	NA	3.96E-10									
Fluoranthene	NA	NA	6.14E-10									
Fluorene	NA	NA	ND									
Indeno(1,2,3-cd)pyrene	NA	NA	4.51E-10									
N-Nitrosodiphenylamine	NA	NA	ND									
Naphthalene	8.60E-04	NA	ND									
Phenanthrene	NA	NA	3.57E-10									
Pyrene	NA	NA	6.12E-10									
Dibenzofuran	NA	NA	ND									
Pesticides/PCBs												
4,4'-DDD	NA	NA	7.53E-11									
4,4'-DDE	NA	NA	ND									
4,4'-DDT	NA	3.40E-01	3.62E-11		6.63E-13		2E-13		3.85E-13		1E-13	4E-13
Alpha-BHC	NA	6.30E+00	ND									
Alpha-Chlordane	2.00E-04	3.50E-01	ND									
Aroclor-1254	NA	4.00E-01	ND									
Aroclor-1260	NA	4.00E-01	ND									
Beta-BHC	NA	1.86E+00	ND									
Gamma-Chlordane	2.00E-04	3.50E-01	ND									
Heptachlor	NA	4.55E+00	ND									
Heptachlor epoxide	NA	9.10E+00	ND									
Metals												
Calcium	NA	NA	1.29E-06									
Selenium	NA	NA	1.28E-11									
Thallium	NA	NA	2.84E-11									
Cyanide	NA	NA	ND									
Total Hazard Quotient and Cancer Risk:												**4E-13**

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CA =	EPC Surface Only	CA =	EPC Surface Only
BW =	70 kg	BW =	15 kg
IR =	20 m3/day	IR =	8.7 m3/day
EF =	234 days/year	EF =	234 days/year
ED =	7 years	ED =	2 years
AT (Nc) =	2555 days	AT (Nc) =	730 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5B for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

TABLE L-2C (Former Dry Waste Disposal Pit)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
CENTRAL TENDENCY(CT) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	Air EPC* from Surface Soil (mg/m3)	Air EPC* from Total Soils (mg/m3)	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk
Volatile Organics												
Acetone	NA	NA	1.06E-10	1.57E-09								
Benzene	1.71E-03	2.73E-02	ND	2.86E-10								
Carbon disulfide	2.00E-01	NA	ND	4.29E-10								
Methyl ethyl ketone	2.86E-01	NA	ND	4.29E-10								
Methylene chloride	8.57E-01	1.65E-03	ND	2.86E-10								
Toluene	1.14E-01	NA	1.36E-10	8.84E-10	5.12E-13		4E-12		6.53E-12		6E-11	
Semivolatile Organics												
1,2,4-Trichlorobenzene	NA	NA	4.00E-10	3.36E-09								
2-Methylnaphthalene	NA	NA	9.35E-11	7.87E-10								
Benzo(a)anthracene	NA	NA	4.42E-10	3.72E-09								
Benzo(a)pyrene	NA	NA	3.40E-10	2.86E-09								
Benzo(b)fluoranthene	NA	NA	5.78E-10	4.86E-09								
Benzo(ghi)perylene	NA	NA	4.00E-10	3.36E-09								
Benzo(k)fluoranthene	NA	NA	3.40E-10	2.86E-09								
Bis(2-Ethylhexyl)phthalate	NA	NA	6.12E-10	1.00E-08								
Butylbenzylphthalate	NA	NA	1.00E-10	1.03E-09								
Chrysene	NA	NA	5.44E-10	4.58E-09								
Di-n-butylphthalate	NA	NA	3.42E-10	1.70E-08								
Di-n-octylphthalate	NA	NA	2.55E-10	4.86E-09								
Diethyl phthalate	NA	NA	1.87E-10	1.57E-09								
Fluoranthene	NA	NA	9.44E-10	9.15E-09								
Indeno(1,2,3-cd)pyrene	NA	NA	1.05E-10	8.72E-10								
Naphthalene	8.60E-04	NA	9.18E-11	7.72E-10	3.45E-13		4E-10		4.40E-12		5E-09	
Phenanthrene	NA	NA	5.78E-10	4.86E-09								
Pyrene	NA	NA	5.22E-10	7.29E-09								
Pesticides/PCBs												
4,4'-DDE	NA	NA	3.40E-11	2.75E-10								
4,4'-DDT	NA	3.40E-01	4.32E-11	2.83E-10		1.62E-14		6E-15		2.07E-13		7E-14
Aroclor-1242	NA	NA	2.89E-10	2.43E-09								
Aroclor-1254	NA	4.00E-01	3.54E-10	2.76E-09		1.33E-13		5E-14		1.69E-12		7E-13
Aroclor-1260	NA	4.00E-01	3.62E-10	2.76E-09		1.36E-13		5E-14		1.73E-12		7E-13
Endrin aldehyde	NA	NA	3.50E-11	2.76E-10								
Metals												
Calcium	NA	NA	1.37E-03	1.59E-02								
Copper	NA	NA	3.96E-07	3.30E-06								
Magnesium	NA	NA	2.33E-04	2.17E-03								
Selenium	NA	NA	1.29E-08	8.84E-08								
Thallium	NA	NA	1.97E-08	1.20E-07								
Total Hazard Quotient and Cancer Risk:							**4E-10**	**1E-13**			**5E-09**	**1E-12**

Assumptions for Future Current Site Worker		Assumptions for Future Outdoor Park Worker	
CA =	EPC Surface Only	CA =	EPC Surface Only
BW =	70 kg	BW =	70 kg
IR =	9.6 m3/day	IR =	8 m3/day
EF =	10 days/year	EF =	153 days/year
ED =	7 years	ED =	7 years
AT (Nc) =	2555 days	AT (Nc) =	2555 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5C for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

TABLE L-2C (Former Dry Waste Disposal Pit)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
CENTRAL TENDENCY(CT) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	Air EPC* from Surface Soil (mg/m3)	Air EPC* from Total Soils (mg/m3)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Intake (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Intake (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk
Volatile Organics												
Acetone	NA	NA	1.06E-10	1.57E-09								
Benzene	1.71E-03	2.73E-02	ND	2.86E-10					2.55E-11	3.64E-13	1E-08	1E-14
Carbon disulfide	2.00E-01	NA	ND	4.29E-10					3.82E-11		2E-10	
Methyl ethyl ketone	2.86E-01	NA	ND	4.29E-10					3.82E-11		1E-10	
Methylene chloride	8.57E-01	1.65E-03	ND	2.86E-10					2.55E-11	3.64E-13	3E-11	6E-16
Toluene	1.14E-01	NA	1.36E-10	8.84E-10	1.52E-12		1E-11		7.88E-11		7E-10	
Semivolatile Organics												
1,2,4-Trichlorobenzene	NA	NA	4.00E-10	3.36E-09								
2-Methylnaphthalene	NA	NA	9.35E-11	7.87E-10								
Benzo(a)anthracene	NA	NA	4.42E-10	3.72E-09								
Benzo(a)pyrene	NA	NA	3.40E-10	2.86E-09								
Benzo(b)fluoranthene	NA	NA	5.78E-10	4.86E-09								
Benzo(ghi)perylene	NA	NA	4.00E-10	3.36E-09								
Benzo(k)fluoranthene	NA	NA	3.40E-10	2.86E-09								
Bis(2-Ethylhexyl)phthalate	NA	NA	6.12E-10	1.00E-08								
Butylbenzylphthalate	NA	NA	1.00E-10	1.03E-09								
Chrysene	NA	NA	5.44E-10	4.58E-09								
Di-n-butylphthalate	NA	NA	3.42E-10	1.70E-08								
Di-n-octylphthalate	NA	NA	2.55E-10	4.86E-09								
Diethyl phthalate	NA	NA	1.87E-10	1.57E-09								
Fluoranthene	NA	NA	9.44E-10	9.15E-09								
Indeno(1,2,3-cd)pyrene	NA	NA	1.05E-10	8.72E-10								
Naphthalene	8.60E-04	NA	9.18E-11	7.72E-10	1.02E-12		1E-09		6.88E-11		8E-08	
Phenanthrene	NA	NA	5.78E-10	4.86E-09								
Pyrene	NA	NA	5.22E-10	7.29E-09								
Pesticides/PCBs												
4,4'-DDE	NA	NA	3.40E-11	2.75E-10								
4,4'-DDT	NA	3.40E-01	4.32E-11	2.83E-10		6.86E-15		2E-15		3.61E-13		1E-13
Aroclor-1242	NA	NA	2.89E-10	2.43E-09								
Aroclor-1254	NA	4.00E-01	3.54E-10	2.76E-09		5.62E-14		2E-14		3.51E-12		1E-12
Aroclor-1260	NA	4.00E-01	3.62E-10	2.76E-09		5.75E-14		2E-14		3.51E-12		1E-12
Endrin aldehyde	NA	NA	3.50E-11	2.76E-10								
Metals												
Calcium	NA	NA	1.37E-03	1.59E-02								
Copper	NA	NA	3.96E-07	3.30E-06								
Magnesium	NA	NA	2.33E-04	2.17E-03								
Selenium	NA	NA	1.29E-08	8.84E-08								
Thallium	NA	NA	1.97E-08	1.20E-07								
Total Hazard Quotient and Cancer Risk:							**1E-09**	**5E-14**			**1E-07**	**3E-12**

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CA =	EPC Surface Only	CA =	EPC Surface and Sub-Surface
BW =	15 kg	BW =	70 kg
IR =	8.7 m3/day	IR =	10.4 m3/day
EF =	7 days/year	EF =	219 days/year
ED =	1 years	ED =	1 years
AT (Nc) =	365 days	AT (Nc) =	365 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5C for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

TABLE L-2C (Former Dry Waste Disposal Pit)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF DUST IN AMBIENT AIR
CENTRAL TENDENCY(CT) - SEAD-12
SEAD-12 Risk Assessment
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA = Chemical Concentration in Air, Calculated from Air EPC Data
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Contribution to Lifetime Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	Air EPC* from Surface Soil (mg/m3)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics												
Acetone	NA	NA	1.06E-10									
Benzene	1.71E-03	2.73E-02	ND									
Carbon disulfide	2.00E-01	NA	ND									
Methyl ethyl ketone	2.86E-01	NA	ND									
Methylene chloride	8.57E-01	1.65E-03	ND									
Toluene	1.14E-01	NA	1.36E-10	2.50E-11		2E-10		5.07E-11		4E-10		
Semivolatile Organics												
1,2,4-Trichlorobenzene	NA	NA	4.00E-10									
2-Methylnaphthalene	NA	NA	9.35E-11									
Benzo(a)anthracene	NA	NA	4.42E-10									
Benzo(a)pyrene	NA	NA	3.40E-10									
Benzo(b)fluoranthene	NA	NA	5.78E-10									
Benzo(ghi)perylene	NA	NA	4.00E-10									
Benzo(k)fluoranthene	NA	NA	3.40E-10									
Bis(2-Ethylhexyl)phthalate	NA	NA	6.12E-10									
Butylbenzylphthalate	NA	NA	1.00E-10									
Chrysene	NA	NA	5.44E-10									
Di-n-butylphthalate	NA	NA	3.42E-10									
Di-n-octylphthalate	NA	NA	2.55E-10									
Diethyl phthalate	NA	NA	1.87E-10									
Fluoranthene	NA	NA	9.44E-10									
Indeno(1,2,3-cd)pyrene	NA	NA	1.05E-10									
Naphthalene	8.60E-04	NA	9.18E-11	1.68E-11		2E-08		3.41E-11		4E-08		
Phenanthrene	NA	NA	5.78E-10									
Pyrene	NA	NA	5.22E-10									
Pesticides/PCBs												
4,4'-DDE	NA	NA	3.40E-11									
4,4'-DDT	NA	3.40E-01	4.32E-11		7.91E-13		3E-13		4.59E-13		2E-13	4E-13
Aroclor-1242	NA	NA	2.89E-10									
Aroclor-1254	NA	4.00E-01	3.54E-10		6.48E-12		3E-12		3.76E-12		2E-12	4E-12
Aroclor-1260	NA	4.00E-01	3.62E-10		6.63E-12		3E-12		3.85E-12		2E-12	4E-12
Endrin aldehyde	NA	NA	3.50E-11									
Metals												
Calcium	NA	NA	1.37E-03									
Copper	NA	NA	3.96E-07									
Magnesium	NA	NA	2.33E-04									
Selenium	NA	NA	1.29E-08									
Thallium	NA	NA	1.97E-08									
Total Hazard Quotient and Cancer Risk:						**2E-08**				**4E-08**		**9E-12**

Assumptions for Future Resident (Adult)

CA =	EPC Surface Only
BW =	70 kg
IR =	20 m3/day
EF =	234 days/year
ED =	7 years
AT (Nc) =	2555 days
AT (Car) =	25,550 days

Assumptions for Future Resident (Child)

CA =	EPC Surface Only
BW =	15 kg
IR =	8.7 m3/day
EF =	234 days/year
ED =	2 years
AT (Nc) =	730 days
AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
* See Table L-5C for calculation of Air EPC.
NA= Information not available.
ND = Compound not detected.

TABLE L-3A (Disposal Pits A/B)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Factor*	EPC Surface Soil	EPC from Total Soils	Current Site Worker				Future Outdoor Park Worker			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics													
Acetone	1.00E-01	NA	NA	1.21E-02	1.07E-02								
Benzene	2.85E-03	3.05E-02	NA	ND	6.00E-03								
Ethyl benzene	1.00E-01	NA	NA	ND	9.00E-03								
Methyl butyl ketone	NA	NA	NA	1.00E-03	1.00E-03								
Methylene chloride	5.88E-02	7.65E-03	NA	1.00E-03	3.00E-03								
Styrene	2.00E-01	NA	NA	ND	7.31E-03								
Toluene	2.00E-01	NA	NA	4.00E-03	7.16E-03								
Total Xylenes	1.80E+00	NA	NA	ND	1.44E-02								
Trichloroethene	NA	1.22E-02	NA	ND	7.32E-03								
Semivolatile Organics													
2,4-Dimethylphenol	2.00E-02	NA	NA	ND	2.50E-02								
2-Methylnaphthalene	4.00E-02	NA	NA	ND	5.00E-02								
4-Methylphenol	5.00E-03	NA	NA	ND	7.78E-02								
Acenaphthene	6.00E-02	NA	NA	ND	2.30E-02								
Acenaphthylene	NA	NA	NA	ND	3.30E-02								
Anthracene	3.00E-01	NA	NA	ND	8.06E-02								
Benzo(a)anthracene	NA	7.30E-01	NA	2.70E-02	8.48E-02								
Benzo(a)pyrene	NA	1.46E+01	NA	2.70E-02	8.04E-02								
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.60E-02	8.20E-02								
Benzo(ghi)perylene	NA	NA	NA	3.10E-02	8.83E-02								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.60E-02	7.79E-02								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	7.32E-02	1.66E-01								
Butylbenzylphthalate	2.00E-01	NA	NA	2.29E-02	2.29E-02								
Carbazole	NA	2.00E-02	NA	2.75E-02	2.75E-02								
Chrysene	NA	7.30E-03	NA	5.10E-02	8.98E-02								
Di-n-butylphthalate	9.00E-02	NA	NA	5.35E-02	1.10E-01								
Di-n-octylphthalate	2.00E-02	NA	NA	2.34E-02	5.40E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	NA	2.75E-02	5.26E-02								
Dibenzofuran	NA	NA	NA	2.23E-02	2.23E-02								
Fluoranthene	4.00E-02	NA	NA	2.44E-02	9.57E-02								
Fluorene	4.00E-02	NA	NA	2.22E-02	4.98E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.85E-02	8.60E-02								
Naphthalene	2.00E-02	NA	NA	ND	9.76E-02								
Phenanthrene	NA	NA	NA	2.38E-02	9.61E-02								
Phenol	5.40E-01	NA	NA	ND	7.71E-02								
Pyrene	3.00E-02	NA	NA	2.20E-02	1.02E-01								
Pesticides/PCBs													
4,4'-DDE	NA	1.70E+00	NA	4.08E-03	3.86E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	6.09E-03	2.91E-03								
Aldrin	1.50E-05	3.40E+01	NA	ND	7.90E-04								
Alpha-BHC	NA	6.30E+00	NA	ND	1.59E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	NA	ND	1.26E-03								
Aroclor-1254	1.80E-05	2.22E+00	NA	1.90E-01	2.09E-01								
Aroclor-1260	1.80E-05	2.22E+00	6.00E-02	ND	2.50E-02								
Beta-BHC	NA	1.80E+00	6.00E-02	ND	1.18E-03								
Dieldrin	2.50E-05	3.20E+01	6.00E-02	4.13E-03	3.82E-03	1.13E-09	4.02E-10	5E-05	1E-08	9.84E-09	3.52E-09	4E-04	1E-07
Endosulfan I	6.00E-03	NA	NA	1.17E-03	1.16E-03								
Endosulfan II	6.00E-03	NA	NA	2.14E-03	2.72E-03								
Endrin	3.00E-04	NA	NA	2.43E-03	3.15E-03								
Endrin aldehyde	NA	NA	NA	2.75E-03	2.37E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	NA	3.76E-03	3.19E-03								
Heptachlor	5.00E-04	4.50E+00	NA	ND	1.45E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	1.85E-03	1.64E-03								
Metals													
Copper	2.40E-02	NA	NA	2.25E+01	3.33E+01								
Cyanide	1.00E-02	NA	NA	6.25E-01	4.31E-01								
Selenium	4.50E-03	NA	NA	7.39E-01	5.98E-01								
Thallium	8.00E-05	NA	NA	1.07E+00	8.48E-01								
Total Hazard Quotient and Cancer Risk:								5E-05	1E-08			4E-04	1E-07

Assumptions for Current Site Worker		Assumptions for Future Outdoor Park Worker	
CS =	EPC Surface Only	CS =	EPC Surface Only
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	5,800 cm2	SA =	5,800 cm2
AF =	1 mg/cm2	AF =	1 mg/cm2
EF =	20 days/year	EF =	175 days/year
ED =	25 years	ED =	25 years
BW =	70 kg	BW =	70 kg
AT (Nc) =	9125 days	AT (Nc) =	9125 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern

TABLE L-3A (Disposal Pits A/B)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day)

$$\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$$

Variables (Assumptions for Each Receptor are Listed at the Bottom)
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Factor*	EPC Surface Soil	EPC from Total Soils	Future Recreational Visitor (Child)				Future Construction Worker			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics													
Acetone	1.00E-01	NA	NA	1.21E-02	1.07E-02								
Benzene	2.85E-03	3.05E-02	NA	ND	6.00E-03								
Ethyl benzene	1.00E-01	NA	NA	ND	9.00E-03								
Methyl butyl ketone	NA	NA	NA	1.00E-03	1.00E-03								
Methylene chloride	5.88E-02	7.65E-03	NA	1.00E-03	3.00E-03								
Styrene	2.00E-01	NA	NA	ND	7.31E-03								
Toluene	2.00E-01	NA	NA	4.00E-03	7.16E-03								
Total Xylenes	1.80E+00	NA	NA	ND	1.44E-02								
Trichloroethene	NA	1.22E-02	NA	ND	7.32E-03								
Semivolatile Organics													
2,4-Dimethylphenol	2.00E-02	NA	NA	ND	2.50E-02								
2-Methylnaphthalene	4.00E-02	NA	NA	ND	5.00E-02								
4-Methylphenol	5.00E-03	NA	NA	ND	7.78E-02								
Acenaphthene	6.00E-02	NA	NA	ND	2.30E-02								
Acenaphthylene	NA	NA	NA	ND	3.30E-02								
Anthracene	3.00E-01	NA	NA	ND	8.06E-02								
Benzo(a)anthracene	NA	7.30E-01	NA	2.70E-02	8.48E-02								
Benzo(a)pyrene	NA	1.46E+01	NA	2.70E-02	8.04E-02								
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.60E-02	8.20E-02								
Benzo(ghi)perylene	NA	NA	NA	3.10E-02	8.83E-02								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.60E-02	7.79E-02								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	7.32E-02	1.66E-01								
Butylbenzylphthalate	2.00E-01	NA	NA	2.29E-02	2.29E-02								
Carbazole	NA	2.00E-02	NA	2.75E-02	2.75E-02								
Chrysene	NA	7.30E-03	NA	5.10E-02	8.58E-02								
Di-n-butylphthalate	9.00E-02	NA	NA	5.35E-02	1.10E-01								
Di-n-octylphthalate	2.00E-02	NA	NA	2.34E-02	5.40E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	NA	2.75E-02	5.26E-02								
Dibenzofuran	NA	NA	NA	2.23E-02	2.23E-02								
Fluoranthene	4.00E-02	NA	NA	2.44E-02	9.57E-02								
Fluorene	4.00E-02	NA	NA	2.22E-02	4.98E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.85E-02	8.60E-02								
Naphthalene	2.00E-02	NA	NA	ND	9.76E-02								
Phenanthrene	NA	NA	NA	2.38E-02	9.61E-02								
Phenol	5.40E-01	NA	NA	ND	7.71E-02								
Pyrene	3.00E-02	NA	NA	2.20E-02	1.02E-01								
Pesticides/PCBs													
4,4'-DDE	NA	1.70E+00	NA	4.08E-03	3.86E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	6.09E-03	2.91E-03								
Aldrin	1.50E-05	3.40E+01	NA	ND	7.90E-04								
Alpha-BHC	NA	6.30E+00	NA	ND	1.59E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	NA	ND	1.26E-03								
Aroclor-1254	1.80E-05	2.22E+00	NA	1.90E-01	2.09E-01								
Aroclor-1260	1.80E-05	2.22E+00	6.00E-02	ND	2.50E-02					8.51E-08	1.22E-09	5E-03	3E-09
Beta-BHC	NA	1.80E+00	6.00E-02	ND	1.18E-03						5.74E-11		1E-10
Dieldrin	2.50E-05	3.20E+01	6.00E-02	4.13E-03	3.82E-03	1.46E-09	1.04E-10	6E-05	3E-09	1.30E-08	1.86E-10	5E-04	6E-09
Endosulfan I	6.00E-03	NA	NA	1.17E-03	1.16E-03								
Endosulfan II	6.00E-03	NA	NA	2.14E-03	2.72E-03								
Endrin	3.00E-04	NA	NA	2.43E-03	3.15E-03								
Endrin aldehyde	NA	NA	NA	2.75E-03	2.37E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	NA	3.76E-03	3.19E-03								
Heptachlor	5.00E-04	4.50E+00	NA	ND	1.45E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	1.85E-03	1.64E-03								
Metals													
Copper	2.40E-02	NA	NA	2.25E+01	3.33E+01								
Cyanide	1.00E-02	NA	NA	6.25E-01	4.31E-01								
Selenium	4.50E-03	NA	NA	7.39E-01	5.98E-01								
Thallium	8.00E-05	NA	NA	1.07E+00	8.48E-01								
Total Hazard Quotient and Cancer Risk:								6E-05	3E-09			5E-03	9E-09

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CS =	EPC Surface Only	CS =	EPC Surface and Subsurface
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	2,300 cm2	SA =	5,800 cm2
AF =	1 mg/cm2	AF =	1 mg/cm2
EF =	14 days/year	EF =	250 days/year
ED =	5 years	ED =	1 years
BW =	15 kg	BW =	70 kg
AT (Nc) =	1825 days	AT (Nc) =	365 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-3A (Disposal Pits A/B)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom)
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Factor*	EPC Surface Soil	Future Resident (Adult)				Future Resident (Child)				Resident
					Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Total Lifetime Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			
Volatile Organics													
Acetone	1.00E-01	NA	NA	1.21E-02									
Benzene	2.85E-03	3.05E-02	NA	ND									
Ethyl benzene	1.00E-01	NA	NA	ND									
Methyl butyl ketone	NA	NA	NA	1.00E-03									
Methylene chloride	5.88E-02	7.65E-03	NA	1.00E-03									
Styrene	2.00E-01	NA	NA	ND									
Toluene	2.00E-01	NA	NA	4.00E-03									
Total Xylenes	1.80E+00	NA	NA	ND									
Trichloroethene	NA	1.22E-02	NA	ND									
Semivolatile Organics													
2,4-Dimethylphenol	2.00E-02	NA	NA	ND									
2-Methylnaphthalene	4.00E-02	NA	NA	ND									
4-Methylphenol	5.00E-03	NA	NA	ND									
Acenaphthene	6.00E-02	NA	NA	ND									
Acenaphthylene	NA	NA	NA	ND									
Anthracene	3.00E-01	NA	NA	ND									
Benzo(a)anthracene	NA	7.30E-01	NA	2.70E-02									
Benzo(a)pyrene	NA	1.46E+01	NA	2.70E-02									
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.60E-02									
Benzo(ghi)perylene	NA	NA	NA	3.10E-02									
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.60E-02									
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	7.32E-02									
Butylbenzylphthalate	2.00E-01	NA	NA	2.29E-02									
Carbazole	NA	2.00E-02	NA	2.75E-02									
Chrysene	NA	7.30E-03	NA	5.10E-02									
Di-n-butylphthalate	9.00E-02	NA	NA	5.35E-02									
Di-n-octylphthalate	2.00E-02	NA	NA	2.34E-02									
Dibenz(a,h)anthracene	NA	7.30E+00	NA	2.75E-02									
Dibenzofuran	NA	NA	NA	2.23E-02									
Fluoranthene	4.00E-02	NA	NA	2.44E-02									
Fluorene	4.00E-02	NA	NA	2.22E-02									
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.85E-02									
Naphthalene	2.00E-02	NA	NA	ND									
Phenanthrene	NA	NA	NA	2.38E-02									
Phenol	5.40E-01	NA	NA	ND									
Pyrene	3.00E-02	NA	NA	2.20E-02									
Pesticides/PCBs													
4,4'-DDE	NA	1.70E+00	NA	4.08E-03									
4,4'-DDT	1.00E-04	1.70E+00	NA	6.09E-03									
Aldrin	1.50E-05	3.40E+01	NA	ND									
Alpha-BHC	NA	6.30E+00	NA	ND									
Alpha-Chlordane	5.00E-04	3.50E-01	NA	ND									
Aroclor-1254	1.80E-05	2.22E+00	NA	1.90E-01									
Aroclor-1260	1.80E-05	2.22E+00	6.00E-02	ND									
Beta-BHC	NA	1.80E+00	6.00E-02	ND									
Dieldrin	2.50E-05	3.20E+01	6.00E-02	4.13E-03	1.97E-08	6.75E-09	8E-04	2E-07	3.64E-08	3.12E-09	1E-03	1E-07	3E-07
Endosulfan I	6.00E-03	NA	NA	1.17E-03									
Endosulfan II	6.00E-03	NA	NA	2.14E-03									
Endrin	3.00E-04	NA	NA	2.43E-03									
Endrin aldehyde	NA	NA	NA	2.75E-03									
Gamma-Chlordane	5.00E-04	3.50E-01	NA	3.76E-03									
Heptachlor	5.00E-04	4.50E+00	NA	ND									
Heptachlor epoxide	1.30E-05	9.10E+00	NA	1.85E-03									
Metals													
Copper	2.40E-02	NA	NA	2.25E+01									
Cyanide	1.00E-02	NA	NA	6.25E-01									
Selenium	4.50E-03	NA	NA	7.39E-01									
Thallium	8.00E-05	NA	NA	1.07E+00									
Total Hazard Quotient and Cancer Risk:							8E-04				1E-03		3E-07

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CS =	EPC Surface Only	CS =	EPC Surface Only
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	5,800 cm2	SA =	2,300 cm2
AF =	1 mg/cm2	AF =	1 mg/cm2
EF =	350 days/year	EF =	350 days/year
ED =	24 years	ED =	6 years
BW =	70 kg	BW =	15 kg
AT (Nc) =	8760 days	AT (Nc) =	2190 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-3B (Disposal Pit C)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Factor*	EPC Surface Soil	EPC from Total Soils	Current Site Worker				Future Outdoor Park Worker			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics													
Acetone	1.00E-01	NA	NA	9.95E-03	8.64E-03								
Chlorobenzene	2.00E-02	NA	NA	ND	5.00E-03								
Methylene chloride	5.88E-02	7.65E-03	NA	ND	7.84E-03								
Tetrachloroethene	1.00E-02	5.20E-02	NA	ND	2.00E-03								
Toluene	2.00E-01	NA	NA	ND	7.37E-03								
Total Xylenes	1.80E+00	NA	NA	ND	6.32E-03								
Trichloroethene	NA	1.22E-02	NA	ND	2.00E-03								
Semivolatile Organics													
2-Methylnaphthalene	4.00E-02	NA	NA	ND	2.20E-02								
Acenaphthene	6.00E-02	NA	NA	ND	4.40E-02								
Anthracene	3.00E-01	NA	NA	4.60E-03	6.30E-02								
Benzo(a)anthracene	NA	7.30E-01	NA	2.60E-02	1.08E-01								
Benzo(a)pyrene	NA	1.46E+01	NA	2.00E-02	8.61E-02								
Benzo(b)fluoranthene	NA	7.30E-01	NA	2.80E-02	1.07E-01								
Benzo(ghi)perylene	NA	NA	NA	2.65E-02	8.01E-02								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.75E-02	1.05E-01								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	5.80E-03	1.60E-02								
Butylbenzylphthalate	2.00E-01	NA	NA	ND	3.00E-02								
Carbazole	NA	2.00E-02	NA	2.37E-02	4.00E-02								
Chrysene	NA	7.30E-03	NA	2.23E-02	1.13E-01								
Di-n-butylphthalate	9.00E-02	NA	NA	4.50E-03	5.20E-02								
Di-n-octylphthalate	2.00E-02	NA	NA	7.30E-03	2.00E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	NA	2.33E-02	8.68E-02								
Fluoranthene	4.00E-02	NA	NA	3.61E-02	1.06E-01								
Fluorene	4.00E-02	NA	NA	ND	3.50E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.65E-02	9.27E-02								
N-Nitrosodiphenylamine	NA	4.90E-03	NA	ND	1.49E-01								
Naphthalene	2.00E-02	NA	NA	ND	1.30E-02								
Phenanthrene	NA	NA	NA	2.10E-02	1.06E-01								
Pyrene	3.00E-02	NA	NA	3.60E-02	1.03E-01								
Dibenzofuran	NA	NA	NA	ND	4.10E-03								
Pesticides/PCBs													
4,4'-DDD	NA	1.20E+00	NA	4.43E-03	2.56E-03								
4,4'-DDE	NA	1.70E+00	NA	ND	2.26E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	2.13E-03	2.33E-03								
Alpha-BHC	NA	6.30E+00	NA	ND	1.16E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	NA	ND	1.07E-03								
Aroclor-1254	1.80E-05	2.22E+00	NA	ND	2.03E-02								
Aroclor-1260	1.80E-05	2.22E+00	6.00E-02	ND	2.03E-02								
Beta-BHC	NA	1.80E+00	6.00E-02	ND	1.06E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	6.00E-02	ND	1.07E-03								
Heptachlor	5.00E-04	4.50E+00	NA	ND	1.21E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	ND	1.07E-03								
Metals													
Calcium	NA	NA	NA	7.59E+01	9.59E+04								
Selenium	4.50E-03	NA	NA	7.54E-04	7.18E-01								
Thallium	8.00E-05	NA	NA	1.67E-03	8.77E-01								
Cyanide	1.00E-02	NA	NA	ND	3.53E-01								
Total Hazard Quotient and Cancer Risk:													

Assumptions for Current Site Worker		Assumptions for Future Outdoor Park Worker	
CS =	EPC Surface Only	CS =	EPC Surface Only
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	5,800 cm2	SA =	5,800 cm2
AF =	1 mg/cm2	AF =	1 mg/cm2
EF =	20 days/year	EF =	175 days/year
ED =	25 years	ED =	25 years
BW =	70 kg	BW =	70 kg
AT (Nc) =	9125 days	AT (Nc) =	9125 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-3B (Disposal Pit C)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Factor*	EPC Surface Soil	EPC from Total Soils	Future Recreational Visitor (Child)				Future Construction Worker			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics													
Acetone	1.00E-01	NA	NA	9.95E-03	8.64E-03								
Chlorobenzene	2.00E-02	NA	NA	ND	5.00E-03								
Methylene chloride	5.88E-02	7.65E-03	NA	ND	7.84E-03								
Tetrachloroethene	1.00E-02	5.20E-02	NA	ND	2.00E-03								
Toluene	2.00E-01	NA	NA	ND	7.37E-03								
Total Xylenes	1.80E+00	NA	NA	ND	6.32E-03								
Trichloroethene	NA	1.22E-02	NA	ND	2.00E-03								
Semivolatile Organics													
2-Methylnaphthalene	4.00E-02	NA	NA	ND	2.20E-02								
Acenaphthene	6.00E-02	NA	NA	ND	4.40E-02								
Anthracene	3.00E-01	NA	NA	4.60E-03	6.30E-02								
Benzo(a)anthracene	NA	7.30E-01	NA	2.60E-02	1.08E-01								
Benzo(a)pyrene	NA	1.46E+01	NA	2.00E-02	8.61E-02								
Benzo(b)fluoranthene	NA	7.30E-01	NA	2.80E-02	1.07E-01								
Benzo(ghi)perylene	NA	NA	NA	2.65E-02	8.01E-02								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.75E-02	1.05E-01								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	5.80E-03	1.60E-02								
Butylbenzylphthalate	2.00E-01	NA	NA	ND	3.00E-02								
Carbazole	NA	2.00E-02	NA	2.37E-02	4.00E-02								
Chrysene	NA	7.30E-03	NA	2.23E-02	1.13E-01								
Di-n-butylphthalate	9.00E-02	NA	NA	4.50E-03	5.20E-02								
Di-n-octylphthalate	2.00E-02	NA	NA	7.30E-03	2.00E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	NA	2.33E-02	8.68E-02								
Fluoranthene	4.00E-02	NA	NA	3.61E-02	1.06E-01								
Fluorene	4.00E-02	NA	NA	ND	3.50E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.65E-02	9.27E-02								
N-Nitrosodiphenylamine	NA	4.90E-03	NA	ND	1.49E-01								
Naphthalene	2.00E-02	NA	NA	ND	1.30E-02								
Phenanthrene	NA	NA	NA	2.10E-02	1.06E-01								
Pyrene	3.00E-02	NA	NA	3.60E-02	1.03E-01								
Dibenzofuran	NA	NA	NA	ND	4.10E-03								
Pesticides/PCBs													
4,4'-DDD	NA	1.20E+00	NA	4.43E-03	2.56E-03								
4,4'-DDE	NA	1.70E+00	NA	ND	2.26E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	2.13E-03	2.33E-03								
Alpha-BHC	NA	6.30E+00	NA	ND	1.16E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	NA	ND	1.07E-03								
Aroclor-1254	1.80E-05	2.22E+00	NA	ND	2.03E-02								
Aroclor-1260	1.80E-05	2.22E+00	6.00E-02	ND	2.03E-02					6.91E-08	9.87E-10	4E-03	2E-09
Beta-BHC	NA	1.80E+00	6.00E-02	ND	1.06E-03						5.16E-11		9E-11
Gamma-Chlordane	5.00E-04	3.50E-01	6.00E-02	ND	1.07E-03					3.64E-09	5.20E-11	7E-06	2E-11
Heptachlor	5.00E-04	4.50E+00	NA	ND	1.21E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	ND	1.07E-03								
Metals													
Calcium	NA	NA	NA	7.59E+01	9.59E+04								
Selenium	4.50E-03	NA	NA	7.54E-04	7.18E-01								
Thallium	8.00E-05	NA	NA	1.67E-03	8.77E-01								
Cyanide	1.00E-02	NA	NA	ND	3.53E-01								
Total Hazard Quotient and Cancer Risk:												4E-03	2E-09

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CS =	EPC Surface Only	CS =	EPC Surface and Subsurface
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	2,300 cm2	SA =	5,800 cm2
AF =	1 mg/cm2	AF =	1 mg/cm2
EF =	14 days/year	EF =	250 days/year
ED =	5 years	ED =	1 years
BW =	15 kg	BW =	70 kg
AT (Nc) =	1825 days	AT (Nc) =	365 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-3B (Disposal Pit C)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Factor*	EPC Surface Soil	Future Resident (Adult)				Future Resident (Child)				Resident
					Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Total Lifetime Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			
Volatile Organics													
Acetone	1.00E-01	NA	NA	9.95E-03									
Chlorobenzene	2.00E-02	NA	NA	ND									
Methylene chloride	5.88E-02	7.65E-03	NA	ND									
Tetrachloroethene	1.00E-02	5.20E-02	NA	ND									
Toluene	2.00E-01	NA	NA	ND									
Total Xylenes	1.80E+00	NA	NA	ND									
Trichloroethene	NA	1.22E-02	NA	ND									
Semivolatile Organics													
2-Methylnaphthalene	4.00E-02	NA	NA	ND									
Acenaphthene	6.00E-02	NA	NA	ND									
Anthracene	3.00E-01	NA	NA	4.60E-03									
Benzo(a)anthracene	NA	7.30E-01	NA	2.60E-02									
Benzo(a)pyrene	NA	1.46E+01	NA	2.00E-02									
Benzo(b)fluoranthene	NA	7.30E-01	NA	2.80E-02									
Benzo(ghi)perylene	NA	NA	NA	2.65E-02									
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.75E-02									
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	5.80E-03									
Butylbenzylphthalate	2.00E-01	NA	NA	ND									
Carbazole	NA	2.00E-02	NA	2.37E-02									
Chrysene	NA	7.30E-03	NA	2.23E-02									
Di-n-butylphthalate	9.00E-02	NA	NA	4.50E-03									
Di-n-octylphthalate	2.00E-02	NA	NA	7.30E-03									
Dibenz(a,h)anthracene	NA	7.30E+00	NA	2.33E-02									
Fluoranthene	4.00E-02	NA	NA	3.61E-02									
Fluorene	4.00E-02	NA	NA	ND									
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.65E-02									
N-Nitrosodiphenylamine	NA	4.90E-03	NA	ND									
Naphthalene	2.00E-02	NA	NA	ND									
Phenanthrene	NA	NA	NA	2.10E-02									
Pyrene	3.00E-02	NA	NA	3.60E-02									
Dibenzofuran	NA	NA	NA	ND									
Pesticides/PCBs													
4,4'-DDD	NA	1.20E+00	NA	4.43E-03									
4,4'-DDE	NA	1.70E+00	NA	ND									
4,4'-DDT	1.00E-04	1.70E+00	NA	2.13E-03									
Alpha-BHC	NA	6.30E+00	NA	ND									
Alpha-Chlordane	5.00E-04	3.50E-01	NA	ND									
Aroclor-1254	1.80E-05	2.22E+00	NA	ND									
Aroclor-1260	1.80E-05	2.22E+00	6.00E-02	ND									
Beta-BHC	NA	1.80E+00	6.00E-02	ND									
Gamma-Chlordane	5.00E-04	3.50E-01	6.00E-02	ND									
Heptachlor	5.00E-04	4.50E+00	NA	ND									
Heptachlor epoxide	1.30E-05	9.10E+00	NA	ND									
Metals													
Calcium	NA	NA	NA	7.59E+01									
Selenium	4.50E-03	NA	NA	7.54E-04									
Thallium	8.00E-05	NA	NA	1.67E-03									
Cyanide	1.00E-02	NA	NA	ND									
Total Hazard Quotient and Cancer Risk:													

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CS =	EPC Surface Only	CS =	EPC Surface Only
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	5,800 cm2	SA =	2,300 cm2
AF =	1 mg/cm2	AF =	1 mg/cm2
EF =	350 days/year	EF =	350 days/year
ED =	24 years	ED =	6 years
BW =	70 kg	BW =	15 kg
AT (Nc) =	8760 days	AT (Nc) =	2190 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-3C (Former Dry Waste Disposal Pit)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Factor*	EPC Surface Soil	EPC from Total Soils	Current Site Worker				Future Outdoor Park Worker			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics													
Acetone	1.00E-01	NA	NA	6.23E-03	1.10E-02								
Benzene	2.85E-03	3.05E-02	NA	ND	2.00E-03								
Carbon disulfide	6.30E-02	NA	NA	ND	3.00E-03								
Methyl ethyl ketone	6.00E-01	NA	NA	ND	3.00E-03								
Methylene chloride	5.88E-02	7.65E-03	NA	ND	2.00E-03								
Toluene	2.00E-01	NA	NA	8.02E-03	6.18E-03								
Semivolatile Organics													
1,2,4-Trichlorobenzene	5.00E-03	NA	NA	2.35E-02	2.35E-02								
2-Methylnaphthalene	4.00E-02	NA	NA	5.50E-03	5.50E-03								
Benzo(a)anthracene	NA	7.30E-01	NA	2.60E-02	2.60E-02								
Benzo(a)pyrene	NA	1.46E+01	NA	2.00E-02	2.00E-02								
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.40E-02	3.40E-02								
Benzo(ghi)perylene	NA	NA	NA	2.35E-02	2.35E-02								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.00E-02	2.00E-02								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	3.60E-02	7.02E-02								
Butylbenzylphthalate	2.00E-01	NA	NA	5.90E-03	7.20E-03								
Chrysene	NA	7.30E-03	NA	3.20E-02	3.20E-02								
Di-n-butylphthalate	9.00E-02	NA	NA	2.01E-02	1.19E-01								
Di-n-octylphthalate	2.00E-02	NA	NA	1.50E-02	3.40E-02								
Diethyl phthalate	8.00E-01	NA	NA	1.10E-02	1.10E-02								
Fluoranthene	4.00E-02	NA	NA	5.55E-02	6.40E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	6.15E-03	6.10E-03								
Naphthalene	2.00E-02	NA	NA	5.40E-03	5.40E-03								
Phenanthrene	NA	NA	NA	3.40E-02	3.40E-02								
Pyrene	3.00E-02	NA	NA	3.07E-02	5.10E-02								
Pesticides/PCBs													
4,4'-DDE	NA	1.70E+00	NA	2.00E-03	1.92E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	2.54E-03	1.98E-03								
Aroclor-1242	NA	NA	6.00E-02	1.70E-02	1.70E-02								
Aroclor-1254	1.80E-05	2.22E+00	6.00E-02	2.08E-02	1.93E-02	5.67E-09	2.02E-09	3E-04	4E-09	4.96E-08	1.77E-08	3E-03	4E-08
Aroclor-1260	1.80E-05	2.22E+00	6.00E-02	2.13E-02	1.93E-02	5.80E-09	2.07E-09	3E-04	5E-09	5.08E-08	1.81E-08	3E-03	4E-08
Endrin aldehyde	NA	NA	NA	2.06E-03	1.93E-03								
Metals													
Calcium	NA	NA	NA	8.04E+04	1.11E+05								
Copper	2.40E-02	NA	NA	2.33E+01	2.31E+01								
Magnesium	NA	NA	NA	1.37E+04	1.52E+04								
Selenium	4.50E-03	NA	NA	7.56E-01	6.18E-01								
Thallium	8.00E-05	NA	NA	1.16E+00	8.40E-01								
Total Hazard Quotient and Cancer Risk:								**6E-04**	**9E-09**			**6E-03**	**8E-08**

Assumptions for Current Site Worker		Assumptions for Future Outdoor Park Worker	
CS =	EPC Surface Only	CS =	EPC Surface Only
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	5,800 cm2	SA =	5,800 cm2
AF =	1 mg/cm2	AF =	1 mg/cm2
EF =	20 days/year	EF =	175 days/year
ED =	25 years	ED =	25 years
BW =	70 kg	BW =	70 kg
AT (Nc) =	9125 days	AT (Nc) =	9125 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-3C (Former Dry Waste Disposal Pit)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Factor*	EPC Surface Soil	EPC from Total Soils	Future Recreational Visitor (Child)				Future Construction Worker			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics													
Acetone	1.00E-01	NA	NA	6.23E-03	1.10E-02								
Benzene	2.85E-03	3.05E-02	NA	ND	2.00E-03								
Carbon disulfide	6.30E-02	NA	NA	ND	3.00E-03								
Methyl ethyl ketone	6.00E-01	NA	NA	ND	3.00E-03								
Methylene chloride	5.88E-02	7.65E-03	NA	ND	2.00E-03								
Toluene	2.00E-01	NA	NA	8.02E-03	6.18E-03								
Semivolatile Organics													
1,2,4-Trichlorobenzene	5.00E-03	NA	NA	2.35E-02	2.35E-02								
2-Methylnaphthalene	4.00E-02	NA	NA	5.50E-03	5.50E-03								
Benzo(a)anthracene	NA	7.30E-01	NA	2.60E-02	2.60E-02								
Benzo(a)pyrene	NA	1.46E+01	NA	2.00E-02	2.00E-02								
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.40E-02	3.40E-02								
Benzo(ghi)perylene	NA	NA	NA	2.35E-02	2.35E-02								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.00E-02	2.00E-02								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	3.60E-02	7.02E-02								
Butylbenzylphthalate	2.00E-01	NA	NA	5.90E-03	7.20E-03								
Chrysene	NA	7.30E-03	NA	3.20E-02	3.20E-02								
Di-n-butylphthalate	9.00E-02	NA	NA	2.01E-02	1.19E-01								
Di-n-octylphthalate	2.00E-02	NA	NA	1.50E-02	3.40E-02								
Diethyl phthalate	8.00E-01	NA	NA	1.10E-02	1.10E-02								
Fluoranthene	4.00E-02	NA	NA	5.55E-02	6.40E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	6.15E-03	6.10E-03								
Naphthalene	2.00E-02	NA	NA	5.40E-03	5.40E-03								
Phenanthrene	NA	NA	NA	3.40E-02	3.40E-02								
Pyrene	3.00E-02	NA	NA	3.07E-02	5.10E-02								
Pesticides/PCBs													
4,4'-DDE	NA	1.70E+00	NA	2.00E-03	1.92E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	2.54E-03	1.98E-03								
Aroclor-1242	NA	NA	6.00E-02	1.70E-02	1.70E-02								
Aroclor-1254	1.80E-05	2.22E+00	6.00E-02	2.08E-02	1.93E-02	7.34E-09	5.24E-10	4E-04	1E-09	6.57E-08	9.39E-10	4E-03	2E-09
Aroclor-1260	1.80E-05	2.22E+00	6.00E-02	2.13E-02	1.93E-02	7.52E-09	5.37E-10	4E-04	1E-09	6.57E-08	9.39E-10	4E-03	2E-09
Endrin aldehyde	NA	NA	NA	2.06E-03	1.93E-03								
Metals													
Calcium	NA	NA	NA	8.04E+04	1.11E+05								
Copper	2.40E-02	NA	NA	2.33E+01	2.31E+01								
Magnesium	NA	NA	NA	1.37E+04	1.52E+04								
Selenium	4.50E-03	NA	NA	7.56E-01	6.18E-01								
Thallium	8.00E-05	NA	NA	1.16E+00	8.40E-01								
Total Hazard Quotient and Cancer Risk:								**8E-04**	**2E-09**			**7E-03**	**4E-09**

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CS =	EPC Surface Only	CS =	EPC Surface and Subsurface
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	2,300 cm2	SA =	5,800 cm2
AF =	1 mg/cm2	AF =	1 mg/cm2
EF =	14 days/year	EF =	250 days/year
ED =	5 years	ED =	1 years
BW =	15 kg	BW =	70 kg
AT (Nc) =	1825 days	AT (Nc) =	365 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-3C (Former Dry Waste Disposal Pit)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Surface Soil (mg/kg)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics													
Acetone	1.00E-01	NA	NA	6.23E-03									
Benzene	2.85E-03	3.05E-02	NA	ND									
Carbon disulfide	6.30E-02	NA	NA	ND									
Methyl ethyl ketone	6.00E-01	NA	NA	ND									
Methylene chloride	5.88E-02	7.65E-03	NA	ND									
Toluene	2.00E-01	NA	NA	8.02E-03									
Semivolatile Organics													
1,2,4-Trichlorobenzene	5.00E-03	NA	NA	2.35E-02									
2-Methylnaphthalene	4.00E-02	NA	NA	5.50E-03									
Benzo(a)anthracene	NA	7.30E-01	NA	2.60E-02									
Benzo(a)pyrene	NA	1.46E+01	NA	2.00E-02									
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.40E-02									
Benzo(ghi)perylene	NA	NA	NA	2.35E-02									
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.00E-02									
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	3.60E-02									
Butylbenzylphthalate	2.00E-01	NA	NA	5.90E-03									
Chrysene	NA	7.30E-03	NA	3.20E-02									
Di-n-butylphthalate	9.00E-02	NA	NA	2.01E-02									
Di-n-octylphthalate	2.00E-02	NA	NA	1.50E-02									
Diethyl phthalate	8.00E-01	NA	NA	1.10E-02									
Fluoranthene	4.00E-02	NA	NA	5.55E-02									
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	6.15E-03									
Naphthalene	2.00E-02	NA	NA	5.40E-03									
Phenanthrene	NA	NA	NA	3.40E-02									
Pyrene	3.00E-02	NA	NA	3.07E-02									
Pesticides/PCBs													
4,4'-DDE	NA	1.70E+00	NA	2.00E-03									
4,4'-DDT	1.00E-04	1.70E+00	NA	2.54E-03									
Aroclor-1242	NA	NA	6.00E-02	1.70E-02									
Aroclor-1254	1.80E-05	2.22E+00	6.00E-02	2.08E-02	9.92E-08	3.40E-08	6E-03	8E-08	1.83E-07	1.57E-08	1E-02	3E-08	1E-07
Aroclor-1260	1.80E-05	2.22E+00	6.00E-02	2.13E-02	1.02E-07	3.48E-08	6E-03	8E-08	1.88E-07	1.61E-08	1E-02	4E-08	1E-07
Endrin aldehyde	NA	NA	NA	2.06E-03									
Metals													
Calcium	NA	NA	NA	8.04E+04									
Copper	2.40E-02	NA	NA	2.33E+01									
Magnesium	NA	NA	NA	1.37E+04									
Selenium	4.50E-03	NA	NA	7.56E-01									
Thallium	8.00E-05	NA	NA	1.16E+00									
Total Hazard Quotient and Cancer Risk:							1E-02				2E-02		2E-07

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CS =	EPC Surface Only	CS =	EPC Surface Only
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	5,800 cm2	SA =	2,300 cm2
AF =	1 mg/cm2	AF =	1 mg/cm2
EF =	350 days/year	EF =	350 days/year
ED =	24 years	ED =	6 years
BW =	70 kg	BW =	15 kg
AT (Nc) =	8760 days	AT (Nc) =	2190 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-3D (Sediment)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

riables (Assumptions for Each Receptor are Listed at the Bottom).
CS = Chemical Concentration in Sediment, from Sediment EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Sediment (mg/kg)	Current Site Worker Absorbed Dose (mg/kg-day) (Nc)	Current Site Worker Absorbed Dose (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Absorbed Dose (mg/kg-day) (Nc)	Future Outdoor Park Worker Absorbed Dose (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	2.80E-01	NA	NA	3.00E-03								
Acetone	1.00E-01	NA	NA	2.32E-02								
Methyl chloride	NA	1.30E-02	NA	9.84E-03		Onsite Sediment Not Applicable						
Methyl ethyl ketone	6.00E-01	NA	NA	1.01E-02								
Tetrachloroethene	1.00E-02	5.20E-02	NA	4.00E-03								
Toluene	2.00E-01	NA	NA	1.04E-02								
Trichloroethene	NA	1.22E-02	NA	1.05E-02								
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	NA	3.60E-02								
4-Chlorophenyl phenyl ether	NA	NA	NA	6.00E-03								
4-Methylphenol	5.00E-03	NA	NA	9.85E-02								
Acenaphthene	6.00E-02	NA	NA	1.01E-01								
Acenaphthylene	NA	NA	NA	1.50E-02								
Anthracene	3.00E-01	NA	NA	1.14E-01								
Benzo(a)anthracene	NA	7.30E-01	NA	2.86E-01								
Benzo(a)pyrene	NA	1.46E+01	NA	2.99E-01								
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.89E-01								
Benzo(ghi)perylene	NA	NA	NA	2.13E-01								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.12E-01								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	1.42E-01								
Butylbenzylphthalate	2.00E-01	NA	NA	4.20E-02								
Carbazole	NA	2.00E-02	NA	1.29E-01								
Chrysene	NA	7.30E-03	NA	3.45E-01								
Di-n-butylphthalate	9.00E-02	NA	NA	9.93E-02								
Di-n-octylphthalate	2.00E-02	NA	NA	9.82E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	NA	1.13E-01								
Dibenzofuran	NA	NA	NA	6.40E-02								
thyl phthalate	8.00E-01	NA	NA	4.00E-02								
oranthene	4.00E-02	NA	NA	8.07E-01								
Fluorene	4.00E-02	NA	NA	9.30E-02								
Hexachlorobenzene	8.00E-04	1.60E+00	NA	6.20E-03								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	1.94E-01								
Naphthalene	2.00E-02	NA	NA	4.90E-02								
Phenanthrene	NA	NA	NA	4.36E-01								
Pyrene	3.00E-02	NA	NA	6.64E-01								
Pesticides/PCBs												
4,4'-DDD	NA	1.20E+00	NA	6.14E-03								
4,4'-DDE	NA	1.70E+00	NA	6.86E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	5.89E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	NA	1.73E-03								
Aroclor-1254	1.80E-05	2.22E+00	0.06	4.75E-02					5.00E-09	1.79E-09	3E-04	4E-09
Aroclor-1260	1.80E-05	2.22E+00	0.06	3.26E-02					3.43E-09	1.23E-09	2E-04	3E-09
Endosulfan I	6.00E-03	NA	NA	1.71E-03								
Endrin	3.00E-04	NA	NA	3.40E-03								
Endrin aldehyde	NA	NA	NA	3.47E-03								
Endrin ketone	NA	NA	NA	3.73E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	2.04E-03								
Metals												
Arsenic	2.40E-04	1.88E+00	0.001	6.64E+00					1.16E-08	4.16E-09	5E-05	8E-09
Copper	2.40E-02	NA	NA	4.58E+01								
Lead	NA	NA	NA	2.85E+01								
Magnesium	NA	NA	NA	1.27E+04								
Vanadium	7.00E-05	NA	NA	2.77E+01								
Zinc	7.50E-02	NA	NA	2.77E+02								
Total Hazard Quotient and Cancer Risk:											**5E-04**	**1E-08**

Assumptions for Future Outdoor Park Worker

CF =	1E-06	kg/mg
SA =	2490	cm2
AF =	1	mg/cm2
EF =	18	days/year
ED =	25	years
BW =	70	kg
AT (Nc) =	9125	days
AT (Car) =	25550	days

* Cells in this table were intentionally left blank due to a lack of toxicity data.
Information not available
SEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-3D (Sediment)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Sediment, from Sediment EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Sediment (mg/kg)	Future Recreational Visitor (Child) Absorbed Dose (mg/kg-day) (Nc)	(Car)	Hazard Quotient	Cancer Risk	Future Construction Worker Absorbed Dose (mg/kg-day) (Nc)	(Car)	Hazard Quotient	Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	2.80E-01	NA	NA	3.00E-03								
Acetone	1.00E-01	NA	NA	2.32E-02								
Methyl chloride	NA	1.30E-02	NA	9.84E-03								
Methyl ethyl ketone	6.00E-01	NA	NA	1.01E-02								
Tetrachloroethene	1.00E-02	5.20E-02	NA	4.00E-03								
Toluene	2.00E-01	NA	NA	1.04E-02								
Trichloroethene	NA	1.22E-02	NA	1.05E-02								
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	NA	3.60E-02								
4-Chlorophenyl phenyl ether	NA	NA	NA	6.00E-03								
4-Methylphenol	5.00E-03	NA	NA	9.85E-02								
Acenaphthene	6.00E-02	NA	NA	1.01E-01								
Acenaphthylene	NA	NA	NA	1.50E-02								
Anthracene	3.00E-01	NA	NA	1.14E-01								
Benzo(a)anthracene	NA	7.30E-01	NA	2.86E-01								
Benzo(a)pyrene	NA	1.46E+01	NA	2.99E-01								
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.89E-01								
Benzo(ghi)perylene	NA	NA	NA	2.13E-01								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.12E-01								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	1.42E-01								
Butylbenzylphthalate	2.00E-01	NA	NA	4.20E-02								
Carbazole	NA	2.00E-02	NA	1.29E-01								
Chrysene	NA	7.30E-03	NA	3.45E-01								
Di-n-butylphthalate	9.00E-02	NA	NA	9.93E-02								
Di-n-octylphthalate	2.00E-02	NA	NA	9.82E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	NA	1.13E-01								
Dibenzofuran	NA	NA	NA	6.40E-02								
Diethyl phthalate	8.00E-01	NA	NA	4.00E-02								
Fluoranthene	4.00E-02	NA	NA	8.07E-01								
Fluorene	4.00E-02	NA	NA	9.30E-02								
Hexachlorobenzene	8.00E-04	1.60E+00	NA	6.20E-03								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	1.94E-01								
Naphthalene	2.00E-02	NA	NA	4.90E-02								
Phenanthrene	NA	NA	NA	4.36E-01								
Pyrene	3.00E-02	NA	NA	6.64E-01								
Pesticides/PCBs												
4,4'-DDD	NA	1.20E+00	NA	6.14E-03								
4,4'-DDE	NA	1.70E+00	NA	6.86E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	5.89E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	NA	1.73E-03								
Aroclor-1254	1.80E-05	2.22E+00	0.06	4.75E-02	1.69E-08	1.20E-09	9E-04	3E-09				
Aroclor-1260	1.80E-05	2.22E+00	0.06	3.26E-02	1.16E-08	8.26E-10	6E-04	2E-09				
Endosulfan I	6.00E-03	NA	NA	1.71E-03								
Endrin	3.00E-04	NA	NA	3.40E-03								
Endrin aldehyde	NA	NA	NA	3.47E-03								
Endrin ketone	NA	NA	NA	3.73E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	2.04E-03								
Metals												
Arsenic	2.40E-04	1.88E+00	0.001	6.64E+00	3.93E-08	2.80E-09	2E-04	5E-09				
Copper	2.40E-02	NA	NA	4.58E+01								
Lead	NA	NA	NA	2.85E+01								
Magnesium	NA	NA	NA	1.27E+04								
Vanadium	7.00E-05	NA	NA	2.77E+01								
Zinc	7.50E-02	NA	NA	2.77E+02								
Total Hazard Quotient and Cancer Risk:							**2E-03**	**1E-08**				

Onsite Sediment
Not Applicable

Assumptions for Future Recreational Visitor (Child)

CF =	1E-06	kg/mg
SA =	4625	cm2
AF =	1	mg/cm2
EF =	7	days/year
ED =	5	years
BW =	15	kg
AT (Nc) =	1825	days
AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern

TABLE L-3D (Sediment)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Sediment, from Sediment EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Ne)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Sediment (mg/kg)	Future Resident (Adult) Absorbed Dose (mg/kg-day) (Ne)	Future Resident (Adult) Absorbed Dose (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Absorbed Dose (mg/kg-day) (Ne)	Future Resident (Child) Absorbed Dose (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics													
1,1,1-Trichloroethane	2.80E-01	NA	NA	3.00E-03									
Acetone	1.00E-01	NA	NA	2.32E-02									
Methyl chloride	NA	1.30E-02	NA	9.84E-03									
Methyl ethyl ketone	6.00E-01	NA	NA	1.01E-02									
Tetrachloroethene	1.00E-02	5.20E-02	NA	4.00E-03									
Toluene	2.00E-01	NA	NA	1.04E-02									
Trichloroethene	NA	1.22E-02	NA	1.05E-02									
Semivolatile Organics													
2-Methylnaphthalene	4.00E-02	NA	NA	3.60E-02									
4-Chlorophenyl phenyl ether	NA	NA	NA	6.00E-03									
4-Methylphenol	5.00E-03	NA	NA	9.85E-02									
Acenaphthene	6.00E-02	NA	NA	1.01E-01									
Acenaphthylene	NA	NA	NA	1.50E-02									
Anthracene	3.00E-01	NA	NA	1.14E-01									
Benzo(a)anthracene	NA	7.30E-01	NA	2.86E-01									
Benzo(a)pyrene	NA	1.46E+01	NA	2.99E-01									
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.89E-01									
Benzo(ghi)perylene	NA	NA	NA	2.13E-01									
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.12E-01									
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	1.42E-01									
Butylbenzylphthalate	2.00E-01	NA	NA	4.20E-02									
Carbazole	NA	2.00E-02	NA	1.29E-01									
Chrysene	NA	7.30E-03	NA	3.45E-01									
Di-n-butylphthalate	9.00E-02	NA	NA	9.93E-02									
Di-n-octylphthalate	2.00E-02	NA	NA	9.82E-02									
Dibenz(a,h)anthracene	NA	7.30E+00	NA	1.13E-01									
Dibenzofuran	NA	NA	NA	6.40E-02									
Diethyl phthalate	8.00E-01	NA	NA	4.00E-02									
Fluoranthene	4.00E-02	NA	NA	8.07E-01									
Fluorene	4.00E-02	NA	NA	9.30E-02									
Hexachlorobenzene	8.00E-04	1.60E+00	NA	6.20E-03									
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	1.94E-01									
Naphthalene	2.00E-02	NA	NA	4.90E-02									
Phenanthrene	NA	NA	NA	4.36E-01									
Pyrene	3.00E-02	NA	NA	6.64E-01									
Pesticides/PCBs													
4,4'-DDD	NA	1.20E+00	NA	6.14E-03									
4,4'-DDE	NA	1.70E+00	NA	6.86E-03									
4,4'-DDT	1.00E-04	1.70E+00	NA	5.89E-03									
Alpha-Chlordane	5.00E-04	3.50E-01	NA	1.73E-03									
Aroclor-1254	1.80E-05	2.22E+00	0.06	4.75E-02	4.36E-08	1.49E-08	2E-03	3E-08	5.08E-08	4.36E-09	3E-03	1E-08	4E-08
Aroclor-1260	1.80E-05	2.22E+00	0.06	3.26E-02	2.99E-08	1.03E-08	2E-03	2E-08	3.49E-08	2.99E-09	2E-03	7E-09	3E-08
Endosulfan I	6.00E-03	NA	NA	1.71E-03									
Endrin	3.00E-04	NA	NA	3.40E-03									
Endrin aldehyde	NA	NA	NA	3.47E-03									
Endrin ketone	NA	NA	NA	3.73E-03									
Heptachlor epoxide	1.30E-05	9.10E+00	NA	2.04E-03									
Metals													
Arsenic	2.40E-04	1.88E+00	0.001	6.64E+00	1.02E-07	3.48E-08	4E-04	7E-08	1.18E-07	1.02E-08	5E-04	2E-08	8E-08
Copper	2.40E-02	NA	NA	4.58E+01									
Lead	NA	NA	NA	2.85E+01									
Magnesium	NA	NA	NA	1.27E+04									
Vanadium	7.00E-05	NA	NA	2.77E+01									
Zinc	7.50E-02	NA	NA	2.77E+02									
Total Hazard Quotient and Cancer Risk:							5E-03				5E-03		2E-07

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
SA =	8,680 cm2	SA =	2,170 cm2
AF =	1 mg/cm2	AF =	1 mg/cm2
EF =	45 days/year	EF =	45 days/year
ED =	24 years	ED =	6 years
BW =	70 kg	BW =	15 kg
AT (Ne) =	8,760 days	AT (Ne) =	2,190 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-3E (Groundwater)
CALCULATION OF INTAKE AND RISK FROM DERMAL CONTACT TO GROUNDWATER (WHILE SHOWERING)
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For organics: $DA = 2Kp \times CW \sqrt{\frac{6 \times \tau \times ET}{\pi}} \times CF$

For inorganics: DA = Kp x CW x ET x CF

Kp = Permeability Coefficie
CW = EPC Cderm
ET = Exposure Time
τ = Lag Time
CF = Conversion Factor

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient Kp (cm/hr)	Tau (hours)	EPC Groundwater (mg/liter)	Absorbed Dose/Event (mg-cm²/event)	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Future Construction Worker Intake (mg/kg-day) (Car)	Future Construction Worker Hazard Quotient	Future Construction Worker Cancer Risk
Volatile Organics																						
1,1,1-Trichloroethane	2.80E-01	NA	1.70E-02	5.70E-01	1.13E-03	2.00E-08									4.70E-07		2E-06					
1,2-Dichloroethene (total)	9.00E-03	NA	1.00E-02	3.40E-01	1.79E-02	1.44E-07									3.39E-06		4E-04					
Acetone	1.00E-01	NA	7.40E-02	2.00E-01	3.99E-03	1.82E-07									4.28E-06		4E-05					
Toluene	2.00E-01	NA	4.50E-02	3.20E-01	1.16E-03	4.08E-08									9.58E-07		5E-06					
Trichloroethene	NA	1.22E-02	1.60E-02	5.50E-01	2.41E-03	3.95E-08										6.63E-08		8E-10				
Semivolatile Organics																						
1,4-Dichlorobenzene	NA	2.40E-02	6.2E-02	6.9E-01	9.30E-05	6.62E-09										1.11E-08		3E-10				
Benzo(a)pyrene	NA	1.46E+01	1.2E+00	2.9E+00	9.70E-05	2.74E-07										4.59E-07		7E-06				
Benzo(b)fluoranthene	NA	7.30E-01	1.20E+00	3.00E+00	7.60E-05	2.18E-07										3.66E-07		3E-07				
Benzo(ghi)perylene	NA	NA	1.65E+00	4.24E+00	1.80E-04	8.44E-07																
Benzo(k)fluoranthene	NA	7.30E-02	1.11E+00	3.03E+00	9.10E-05	2.42E-07										4.06E-07		3E-08				
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	5.27E-03	2.11E+01	2.06E-04	6.89E-09									1.62E-07	1.15E-08	2E-05	3E-10				
Butylbenzylphthalate	2.00E-01	NA	6.06E-02	7.04E+00	6.40E-05	1.42E-08									3.34E-07		2E-06					
Di-n-butylphthalate	9.00E-02	NA	3.61E-01	4.36E+00	2.10E-04	2.19E-07									5.14E-06		6E-05					
Di-n-octylphthalate	2.00E-02	NA	4.42E+00	2.12E+01	4.10E-04	1.16E-05									2.71E-04		1E-02					
Diethyl phthalate	8.00E-01	NA	4.80E-03	2.00E+00	1.03E-03	9.66E-09									2.27E-07		3E-07					
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.90E+00	4.20E+00	1.00E-04	5.38E-07										9.02E-07		7E-07				
Phenol	5.40E-01	NA	5.50E-03	3.30E-01	4.30E-04	1.88E-09									4.41E-08		8E-08					
Pyrene	3.00E-02	NA	3.24E-01	1.50E+00	8.00E-05	4.39E-08									1.03E-06		3E-05					
Pesticides/PCBs																						
Beta-BHC	NA	1.80E+00	1.88E-02	5.20E+00	3.30E-06	1.96E-10										3.28E-10		6E-10				
Gamma-Chlordane	5.00E-04	3.50E-01	5.20E-02	2.80E+01	4.41E-06	1.68E-09									3.94E-08	2.81E-09	8E-05	1E-09				
Heptachlor	5.00E-04	4.50E+00	1.10E-02	1.70E+01	2.76E-06	1.73E-10									4.06E-09	2.90E-10	8E-06	1E-09				
Metals																						
Barium	3.50E-02	NA	1.00E-04	NA	9.42E-02	2.36E-09									5.53E-08		2E-06					
Cobalt	3.00E-03	NA	4.00E-04	NA	1.57E-03	1.57E-10									3.69E-09		1E-06					
Total Hazard Quotient and Cancer Risk:																	**1E-02**	**8E-06**				

Current Site Worker: Dermal Contact to Groundwater Not Applicable for Current Site Worker

Future Outdoor Park Worker: Dermal Contact to Groundwater Not Applicable for Future Outdoor Park Worker

Future Construction Worker: Dermal Contact to Groundwater Not Applicable for Future Construction Worker

Assumptions for Future Recreational Visitor (Child)

CF =	0.001 l/cm3
BW =	15 kg
SA =	9,180 cm2
ET =	0.25 hours/day
EF =	14 days/year
ED =	5 years
AT (Nc) =	1,825 days
AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-3E (Groundwater)
CALCULATION OF INTAKE AND RISK FROM DERMAL CONTACT TO GROUNDWATER (WHILE SHOWERING)
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For organics: $DA = 2Kp \times CW \sqrt{\frac{6 \times \tau \times ET}{\pi}} \times CF$

For inorganics: DA = Kp x CW x ET x CF

Kp = Permeability Coefficient
CW = EPC Cderm
ET = Exposure Time
CF = Conversion Factor

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Contribution to Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient Kp (cm/hr)	Tau (hours)	EPC Groundwater (mg/liter)	Absorbed Dose/Event (mg-cm²/event)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics															
1,1,1-Trichloroethane	2.80E-01	NA	1.70E-02	5.70E-01	1.13E-03	2.00E-08	6.31E-06		2E-05		1.18E-05		4E-05		
1,2-Dichloroethene (total)	9.00E-03	NA	1.00E-02	3.40E-01	1.79E-02	1.44E-07	4.54E-05		5E-03		8.46E-05		9E-03		
Acetone	1.00E-01	NA	7.40E-02	2.00E-01	3.99E-03	1.82E-07	5.75E-05		6E-04		1.07E-04		1E-03		
Toluene	2.00E-01	NA	4.50E-02	3.20E-01	1.16E-03	4.08E-08	1.29E-05		6E-05		2.39E-05		1E-04		
Trichloroethene	NA	1.22E-02	1.60E-02	5.50E-01	2.41E-03	3.95E-08		4.27E-06		5E-08		1.99E-06		2E-08	8E-08
Semivolatile Organics															
1,4-Dichlorobenzene	NA	2.40E-02	6.2E-02	6.9E-01	9.30E-05	6.62E-09		7.15E-07		2E-08		3.33E-07		8E-09	3E-08
Benzo(a)pyrene	NA	1.46E+01	1.2E+00	2.9E+00	9.70E-05	2.74E-07		2.96E-05		4E-04		1.38E-05		2E-04	6E-04
Benzo(b)fluoranthene	NA	7.30E-01	1.20E+00	3.00E+00	7.60E-05	2.18E-07		2.36E-05		2E-05		1.10E-05		8E-06	3E-05
Benzo(ghi)perylene	NA	NA	1.65E+00	4.24E+00	1.80E-04	8.44E-07									
Benzo(k)fluoranthene	NA	7.30E-02	1.11E+00	3.03E+00	9.10E-05	2.42E-07		2.62E-05		2E-06		1.22E-05		9E-07	3E-06
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	5.27E-03	2.11E+01	2.06E-04	6.89E-09	2.17E-06	7.44E-07	2E-04	2E-08	4.04E-06	3.46E-07	4E-04	1E-08	3E-08
Butylbenzylphthalate	2.00E-01	NA	6.06E-02	7.04E+00	6.40E-05	1.42E-08	4.48E-06		2E-05		8.35E-06		4E-05		
Di-n-butylphthalate	9.00E-02	NA	3.61E-01	4.36E+00	2.10E-04	2.19E-07	6.90E-05		8E-04		1.28E-04		1E-03		
Di-n-octylphthalate	2.00E-02	NA	4.42E+00	2.12E+01	4.10E-04	1.16E-05	3.64E-03		2E-01		6.78E-03		3E-01		
Diethyl phthalate	8.00E-01	NA	4.80E-03	2.00E+00	1.03E-03	9.66E-09	3.04E-06		4E-06		5.67E-06		7E-06		
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.90E+00	4.20E+00	1.00E-04	5.38E-07		5.81E-05		4E-05		2.71E-05		2E-05	6E-05
Phenol	5.40E-01	NA	5.50E-03	3.30E-01	4.30E-04	1.88E-09	5.92E-07		1E-06		1.10E-06		2E-06		
Pyrene	3.00E-02	NA	3.24E-01	1.50E+00	8.00E-05	4.39E-08	1.38E-05		5E-04		2.58E-05		9E-04		
Pesticides/PCBs															
Beta-BHC	NA	1.80E+00	1.88E-02	5.20E+00	3.30E-06	1.96E-10		2.12E-08		4E-08		9.85E-09		2E-08	6E-08
Gamma-Chlordane	5.00E-04	3.50E-01	5.20E-02	2.80E+01	4.41E-06	1.68E-09	5.28E-07	1.81E-07	1E-03	6E-08	9.84E-07	8.44E-08	2E-03	3E-08	9E-08
Heptachlor	5.00E-04	4.50E+00	1.10E-02	1.70E+01	2.76E-06	1.73E-10	5.45E-08	1.87E-08	1E-04	8E-08	1.02E-07	8.70E-09	2E-04	4E-08	1E-07
Metals															
Barium	3.50E-02	NA	1.00E-04	NA	9.42E-02	2.36E-09	7.42E-07		2E-05		1.38E-06		4E-05		
Cobalt	3.00E-03	NA	4.00E-04	NA	1.57E-03	1.57E-10	4.95E-08		2E-05		9.21E-08		3E-05		
Total Hazard Quotient and Cancer Risk:									**2E-01**				**4E-01**		**7E-04**

Assumptions for Future Resident (Adult)

CF =	0.001	l/cm3
BW =	70	kg
SA =	23,000	cm2
ET =	0.25	hours/day
EF =	350	days/year
ED =	24	years
AT (Nc) =	8,760	days
AT (Car) =	25,550	days

Assumptions for Future Resident (Child)

CF =	0.001	l/cm3
BW =	15	kg
SA =	9,180	cm2
ET =	0.25	hours/day
EF =	350	days/year
ED =	6	years
AT (Nc) =	2,190	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available

TABLE L-3F (Surface Water)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SURFACE WATER
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For organics with ET < t*: $DA = 2Kp \cdot CW \sqrt{\frac{6 \cdot \tau \cdot ET}{\pi}} \cdot CF$

For organics with ET > t*: DA = Kp x CW x [ET/(1+B) + 2Tau(1+3B)/(1+B)] x CF

For inorganics: DA = Kp x CW x ET x CF

Kp = Permeability Coefficient
CW = EPC Surface Water
ET = Exposure Time
Tau = Lag Time
CF = Conversion Factor
B = Bunge Model Value

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient Kp (cm/hr)	Tau (hours)	B (unitless)	EPC Surface Water (mg/L)	Absorbed Dose/Event (mg-cm²/event)
Volatile Organics							
Acetone	1.00E-01	NA	5.69E-04	2.00E-01	5.80E-05	3.11E-03	2.48E-09
Toluene	2.00E-01	NA	4.50E-02	3.20E-01	5.40E-02	4.00E-04	2.98E-08
Trichloroethene	NA	1.22E-02	1.60E-02	5.50E-01	2.60E-02	8.00E-04	2.62E-08
Semivolatile Organics							
Benzo(a)anthracene	NA	7.30E-01	8.10E-01	2.20E+00	4.60E+01	7.30E-04	2.42E-06
Benzo(a)pyrene	NA	1.46E+01	1.20E+00	2.90E+00	1.30E+02	7.74E-04	4.37E-06
Benzo(k)fluoranthene	NA	7.30E-02	1.10E+00	3.03E+00	1.15E+02	7.78E-04	4.12E-06
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	5.27E-03	2.11E+01	9.50E-01	1.00E-03	6.69E-08
Butylbenzylphthalate	2.00E-01	NA	6.06E-02	7.04E+00	6.31E+00	2.00E-04	8.89E-08
Chrysene	NA	7.30E-03	8.10E-01	2.20E+00	4.60E+01	7.73E-04	2.57E-06
Di-n-butylphthalate	9.00E-02	NA	3.61E-01	4.36E+00	3.98E+01	8.39E-04	1.75E-06
Diethyl phthalate	8.00E-01	NA	4.80E-03	2.00E+00	3.00E-02	4.60E-04	8.63E-09
Pentachlorophenol	3.00E-02	1.20E-01	6.50E-01	3.70E+00	7.20E+01	1.96E-03	6.77E-06
Pyrene	3.00E-02	NA	3.20E-01	1.50E+00	7.59E+00	7.78E-04	8.43E-07
Pesticides/PCBs							
4,4'-DDD	NA	1.20E+00	2.80E-01	7.80E+00	6.30E+01	5.41E-06	1.17E-08
4,4'-DDT	1.00E-04	1.70E+00	4.30E-01	1.30E+01	2.30E+02	9.46E-06	4.05E-08
Aldrin	1.50E-05	3.40E+01	1.60E-03	1.50E+01	1.00E-01	3.72E-06	6.37E-11
Alpha-BHC	NA	6.30E+00	1.88E-02	5.20E+00	7.94E-01	7.76E-06	9.21E-10
Alpha-Chlordane	5.00E-04	3.50E-01	1.37E-03	2.76E+01	2.09E-01	3.25E-06	6.48E-11
Aroclor-1242	NA	NA	8.87E-01	3.42E+00	1.00E+02	9.94E-05	4.51E-07
Beta-BHC	NA	1.80E+00	1.88E-02	5.20E+00	7.94E-01	4.38E-06	5.20E-10
Delta-BHC	NA	NA	2.61E-02	5.20E+00	1.26E+00	4.14E-06	6.82E-10
Endrin aldehyde	NA	NA	6.09E-03	1.90E+01	1.00E+00	8.51E-06	6.23E-10
Endrin ketone	NA	NA	6.09E-03	1.90E+01	1.00E+00	8.54E-06	6.25E-10
gamma-BHC (Lindane)	3.00E-04	1.80E+00	1.40E-02	5.20E+00	5.20E-02	5.70E-06	5.03E-10
Heptachlor	5.00E-04	4.50E+00	1.10E-02	1.70E+01	1.90E+00	4.35E-06	5.45E-10
Heptachlor epoxide	1.30E-05	9.10E+00	6.64E-04	2.07E+01	5.01E-02	3.23E-06	2.70E-11
Hexachlorobenzene	8.00E-04	1.60E+00	2.10E-01	4.80E+00	2.00E+01	5.98E-06	7.60E-09
Metals							
Cadmium	5.00E-05	NA	1.00E-03	NA		2.92E-04	2.92E-10
Mercury	3.00E-06	NA	1.00E-03	NA		1.10E-04	1.10E-10
Zinc	7.50E-02	NA	6.00E-04	NA		2.81E-02	1.69E-08

Analyte	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Future Construction Worker Intake (mg/kg-day) (Car)	Future Construction Worker Hazard Quotient	Future Construction Worker Cancer Risk
Volatile Organics																
Acetone					4.35E-09		4E-08		1.46E-08		1E-07					
Toluene					5.22E-08		3E-07		1.76E-07		9E-07					
Trichloroethene						1.64E-08		2E-10		1.11E-08		1E-10				
Semivolatile Organics																
Benzo(a)anthracene						1.52E-06		1E-06		1.02E-06		7E-07				
Benzo(a)pyrene						2.74E-06		4E-05		1.85E-06		3E-05				
Benzo(k)fluoranthene						2.58E-06		2E-07		1.74E-06		1E-07				
Bis(2-Ethylhexyl)phthalate					1.17E-07	4.19E-08	1E-05	1E-09	3.95E-07	2.82E-08	4E-05	8E-10				
Butylbenzylphthalate					1.56E-07		8E-07		5.26E-07		3E-06					
Chrysene						1.61E-06		1E-08		1.08E-06		8E-09				
Di-n-butylphthalate					3.07E-06		3E-05		1.03E-05		1E-04					
Diethyl phthalate					1.51E-08		2E-08		5.10E-08		6E-08					
Pentachlorophenol					1.19E-05	4.24E-06	4E-04	5E-07	4.01E-05	2.86E-06	1E-03	3E-07				
Pyrene					1.48E-06		5E-05		4.98E-06		2E-04					
Pesticides/PCBs																
4,4'-DDD						7.33E-09		9E-09		4.94E-09		6E-09				
4,4'-DDT					7.11E-08	2.54E-08	7E-04	4E-08	2.40E-07	1.71E-08	2E-03	3E-08				
Aldrin					1.12E-10	3.99E-11	7E-06	1E-09	3.77E-10	2.69E-11	3E-05	9E-10				
Alpha-BHC						5.77E-10		4E-09		3.89E-10		2E-09				
Alpha-Chlordane					1.14E-10	4.06E-11	2E-07	1E-11	3.83E-10	2.74E-11	8E-07	1E-11				
Aroclor-1242																
Beta-BHC						3.26E-10		6E-10		2.20E-10		4E-10				
Delta-BHC																
Endrin aldehyde																
Endrin ketone																
gamma-BHC (Lindane)					8.82E-10	3.15E-10	3E-06	6E-10	2.97E-09	2.12E-10	1E-05	4E-10				
Heptachlor					9.57E-10	3.42E-10	2E-06	2E-09	3.22E-09	2.30E-10	6E-06	1E-09				
Heptachlor epoxide					4.73E-11	1.69E-11	4E-06	2E-10	1.60E-10	1.14E-11	1E-05	1E-10				
Hexachlorobenzene					1.33E-08	4.76E-09	2E-05	8E-09	4.50E-08	3.21E-09	6E-05	5E-09				
Metals																
Cadmium					5.12E-10		1E-05		1.73E-09		3E-05					
Mercury					1.93E-10		6E-05		6.50E-10		2E-04					
Zinc					2.96E-08		4E-07		9.97E-08		1E-06					
Total Hazard Quotient and Cancer Risk:							**1E-03**	**4E-05**			**4E-03**	**3E-05**				

Dermal Contact to Surface Water for Current Worker

Dermal Contact to Surface Water for Construction Worker

Assumptions for Future Outdoor Park Worker

CF =	1E-03	liter/cm3
BW =	70	kg
SA =	2,490	cm2
ET =	1	hour/day
EF =	18	days/year
ED =	25	years
AT (Nc) =	9,125	days
AT (Car) =	25,550	days

Assumptions for Future Recreational Visitor (Child)

CF =	1E-03	liter/cm3
BW =	15	kg
SA =	4,625	cm2
ET =	1	hour/day
EF =	7	days/year
ED =	5	years
AT (Nc) =	1,825	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-3F (Surface Water)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SURFACE WATER
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA).

For organics with ET < t*: $DA = 2Kp \quad CW \sqrt{\frac{6 \cdot \tau \quad ET}{\pi}} \quad CF$

For organics with ET > t*: DA = Kp x CW x [ET/(1+B) + 2Tau(1+3B)/(1+B)] x

For inorganics: DA = Kp x CW x ET x CF

Kp = Permeability Coefficient
CW = EPC Surface Water
ET = Exposure Time
Tau = Lag Time
CF = Conversion Factor
B = Bunge Model Value

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-	Permeability Coefficient Kp (cm/hr)	Tau (hours)	B (unitless)	EPC Surface Water (mg/L)	Absorbed Dose/Event (mg-cm²/event)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics																
Acetone	1.00E-01	NA	5.69E-04	2.00E-01	5.80E-05	3.11E-03	2.48E-09	3.79E-08		4E-07		4.42E-08		4E-07		
Toluene	2.00E-01	NA	4.50E-02	3.20E-01	5.40E-02	4.00E-04	2.98E-08	4.55E-07		2E-06		5.31E-07		3E-06		
Trichloroethene	NA	1.22E-02	1.60E-02	5.50E-01	2.60E-02	8.00E-04	2.62E-08		1.38E-07		2E-09		4.01E-08		5E-10	2E-09
Semivolatile Organics																
Benzo(a)anthracene	NA	7.30E-01	8.10E-01	2.20E+00	4.60E+01	7.30E-04	2.42E-06		1.27E-05		9E-06		3.71E-06		3E-06	1E-05
Benzo(a)pyrene	NA	1.46E+01	1.20E+00	2.90E+00	1.30E+02	7.74E-04	4.37E-06		2.29E-05		3E-04		6.68E-06		1E-04	4E-04
Benzo(k)fluoranthene	NA	7.30E-02	1.10E+00	3.03E+00	1.15E+02	7.78E-04	4.12E-06		2.16E-05		2E-06		6.29E-06		5E-07	2E-06
Bis(2-Ethylhexyl)phthala	1.00E-02	2.80E-02	5.27E-03	2.11E+01	9.50E-01	1.00E-03	6.69E-08	1.02E-06	3.51E-07	1E-04	1E-08	1.19E-06	1.02E-07	1E-04	3E-09	1E-08
Butylbenzylphthalate	2.00E-01	NA	6.06E-02	7.04E+00	6.31E+00	2.00E-04	8.89E-08	1.36E-06		7E-06		1.59E-06		8E-06		
Chrysene	NA	7.30E-03	8.10E-01	2.20E+00	4.60E+01	7.73E-04	2.57E-06		1.35E-05		1E-07		3.92E-06		3E-08	1E-07
Di-n-butylphthalate	9.00E-02	NA	3.61E-01	4.36E+00	3.98E+01	8.39E-04	1.75E-06	2.67E-05		3E-04		3.12E-05		3E-04		
Diethyl phthalate	8.00E-01	NA	4.80E-03	2.00E+00	3.00E-02	4.60E-04	8.63E-09	1.32E-07		2E-07		1.54E-07		2E-07		
Pentachlorophenol	3.00E-02	1.20E-01	6.50E-01	3.70E+00	7.20E+01	1.96E-03	6.77E-06	1.04E-04	3.55E-05	3E-03	4E-06	1.21E-04	1.04E-05	4E-03	1E-06	6E-06
Pyrene	3.00E-02	NA	3.20E-01	1.50E+00	7.59E+00	7.78E-04	8.43E-07	1.29E-05		4E-04		1.50E-05		5E-04		
Pesticides/PCBs																
4,4'-DDD	NA	1.20E+00	2.80E-01	7.80E+00	6.30E+01	5.41E-06	1.17E-08		6.13E-08		7E-08		1.79E-08		2E-08	9E-08
4,4'-DDT	1.00E-04	1.70E+00	4.30E-01	1.30E+01	2.30E+02	9.46E-06	4.05E-08	6.20E-07	2.12E-07	6E-03	4E-07	7.23E-07	6.20E-08	7E-03	1E-07	5E-07
Aldrin	1.50E-05	3.40E+01	1.60E-03	1.50E+01	1.00E-01	3.72E-06	6.37E-11	9.74E-10	3.34E-10	6E-05	1E-08	1.14E-09	9.74E-11	8E-05	3E-09	1E-08
Alpha-BHC	NA	6.30E+00	1.88E-02	5.20E+00	7.94E-01	7.76E-06	9.21E-10		4.83E-09		3E-08		1.41E-09		9E-09	4E-08
Alpha-Chlordane	5.00E-04	3.50E-01	1.37E-03	2.76E+01	2.09E-01	3.25E-06	6.48E-11	9.91E-10	3.40E-10	2E-06	1E-10	1.16E-09	9.91E-11	2E-06	3E-11	2E-10
Aroclor-1242	NA	NA	8.87E-01	3.42E+00	1.00E+02	9.94E-05	4.51E-07									
Beta-BHC	NA	1.80E+00	1.88E-02	5.20E+00	7.94E-01	4.38E-06	5.20E-10		2.72E-09		5E-09		7.95E-10		1E-09	6E-09
Delta-BHC	NA	NA	2.61E-02	5.20E+00	1.26E+00	4.14E-06	6.82E-10									
Endrin aldehyde	NA	NA	6.09E-03	1.90E+01	1.00E+00	8.51E-06	6.23E-10									
Endrin ketone	NA	NA	6.09E-03	1.90E+01	1.00E+00	8.54E-06	6.25E-10									
gamma-BHC (Lindane)	3.00E-04	1.80E+00	1.40E-02	5.20E+00	5.20E-02	5.70E-06	5.03E-10	7.69E-09	2.64E-09	3E-05	5E-09	8.97E-09	7.69E-10	3E-05	1E-09	6E-09
Heptachlor	5.00E-04	4.50E+00	1.10E-02	1.70E+01	1.90E+00	4.35E-06	5.45E-10	8.34E-09	2.86E-09	2E-05	1E-08	9.73E-09	8.34E-10	2E-05	4E-09	2E-08
Heptachlor epoxide	1.30E-05	9.10E+00	6.64E-04	2.07E+01	5.01E-02	3.23E-06	2.70E-11	4.13E-10	1.41E-10	3E-05	1E-09	4.81E-10	4.13E-11	4E-05	4E-10	2E-09
Hexachlorobenzene	8.00E-04	1.60E+00	2.10E-01	4.80E+00	2.00E+01	5.98E-06	7.60E-09	1.16E-07	3.99E-08	1E-04	6E-08	1.36E-07	1.16E-08	2E-04	2E-08	8E-08
Metals																
Cadmium	5.00E-05	NA	1.00E-03	NA		2.92E-04	2.92E-10	4.46E-09		9E-05		5.21E-09		1E-04		
Mercury	3.00E-06	NA	1.00E-03	NA		1.10E-04	1.10E-10	1.68E-09		6E-04		1.96E-09		7E-04		
Zinc	7.50E-02	NA	6.00E-04	NA		2.81E-02	1.69E-08	2.58E-07		3E-06		3.01E-07		4E-06		
Total Hazard Quotient and Cancer Risk:										**1E-02**				**1E-02**		**5E-04**

Assumptions for Future Resident (Adult)

CF =	1E-03	liter/cm3
BW =	70	kg
SA =	8,680	cm2
ET =	1	hour/day
EF =	45	days/year
ED =	24	years
AT (Nc) =	8,760	days
AT (Car) =	25,550	days

Assumptions for Future Resident (Child)

CF =	1E-03	liter/cm3
BW =	15	kg
SA =	2,170	cm2
ET =	1	hour/day
EF =	45	days/year
ED =	6	years
AT (Nc) =	2,190	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-3G (Downgradient Sediment)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Sediment, from Sediment EPC
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Sediment (mg/kg)	Future off-Site Wader (Child) Absorbed Dose (mg/kg-day) (Nc)	(Car)	Hazard Quotient	Cancer Risk
Volatile Organics								
Acetone	1.00E-01	NA	NA	1.90E-01				
Semivolatile Organics								
2-Methylnaphthalene	4.00E-02	NA	NA	3.30E-02				
4-Methylphenol	5.00E-03	NA	NA	1.40E-02				
Acenaphthene	6.00E-02	NA	NA	1.90E-02				
Acenaphthylene	NA	NA	NA	5.40E-02				
Anthracene	3.00E-01	NA	NA	9.20E-02				
Benzo(a)anthracene	NA	7.30E-01	NA	1.25E+00				
Benzo(a)pyrene	NA	1.46E+01	NA	9.77E-01				
Benzo(b)fluoranthene	NA	7.30E-01	NA	1.20E+00				
Benzo(ghi)perylene	NA	NA	NA	2.12E-01				
Benzo(k)fluoranthene	NA	7.30E-02	NA	4.90E-02				
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	7.24E-02				
Carbazole	NA	2.00E-02	NA	5.01E-02				
Chrysene	NA	7.30E-03	NA	1.40E+00				
Di-n-octylphthalate	2.00E-02	NA	NA	1.49E-01				
Dibenz(a,h)anthracene	NA	7.30E+00	NA	1.25E-01				
Dibenzofuran	NA	NA	NA	2.40E-02				
Fluoranthene	4.00E-02	NA	NA	2.60E+00				
Fluorene	4.00E-02	NA	NA	5.88E-02				
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.23E-01				
N-Nitrosodiphenylamine	NA	4.90E-03	NA	9.23E-02				
Naphthalene	2.00E-02	NA	NA	1.60E-02				
Phenanthrene	NA	NA	NA	8.40E-01				
Pyrene	3.00E-02	NA	NA	2.00E+00				
Pesticides/PCBs								
4,4'-DDD	NA	1.20E+00	NA	3.36E-03				
4,4'-DDE	NA	1.70E+00	NA	3.38E-03				
Total Hazard Quotient and Cancer Risk:								

Assumptions for Future Recreational Visitor (Child)

CF =	1E-06	kg/mg
SA =	4625	cm2
AF =	1	mg/cm2
EF =	14	days/year
ED =	5	years
BW =	15	kg
AT (Nc) =	1825	days
AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-3H (Downgradient Surface Water)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SURFACE WATER
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For organics with ET < t*: $DA = 2Kp \times CW \sqrt{\frac{6 \times \tau \times ET}{\pi}} \times CF$

For organics with ET > t*: DA = Kp x CW x [ET/(1+B) + 2Tau(1+3B)/(1+B)] x CF

For inorganics: DA = Kp x CW x ET x CF

Kp = Permeability Coefficient
CW = EPC Surface Water
ET = Exposure Time
Tau = Lag Time
CF = Conversion Factor
B = Bunge Model Value

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient *Kp* (cm/hr)	Tau (hours)	B (unitless)	EPC Surface Water (mg/L)	Absorbed Dose/Event (mg-cm²/event)	Future off-Site Wader (Child) Intake (mg/kg-day) (Nc)	Intake (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk
Semivolatile Organics											
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	2.25E-01	1.07E+00		1.40E-04	9.01E-08	1.07E-06	7.61E-08	1E-04	2E-09
Butylbenzylphthalate	2.00E-01	NA	8.10E-01	2.20E+00		1.20E-04	3.98E-07	4.71E-06		2E-05	
Diethyl phthalate	8.00E-01	NA	1.20E+00	2.90E+00		7.20E-05	4.07E-07	4.81E-06		6E-06	
Hexachlorobenzene	8.00E-04	1.60E+00	1.20E+00	3.00E+00		6.88E-06	3.95E-08	4.67E-07	3.34E-08	6E-04	5E-08
Metals											
Barium	3.50E-02	NA	1.00E-03	NA		5.02E-02	5.02E-08	5.94E-07		2E-05	
Beryllium	2.00E-05	NA	1.00E-03	NA		1.54E-04	1.54E-10	1.82E-09		9E-05	
Calcium	NA	NA	1.00E-03	NA		9.50E+01	9.50E-05				
Magnesium	NA	NA	1.00E-03	NA		1.46E+01	1.46E-05				
Sodium	NA	NA	1.00E-03	NA		2.53E+01	2.53E-05				
Total Hazard Quotient and Cancer Risk:										8E-04	6E-08

Assumptions for Future Recreational Visitor (Child)

CF =	1E-03	liter/cm3
BW =	15	kg
SA =	4,625	cm2
ET =	1	hour/day
EF =	14	days/year
ED =	5	years
AT (Nc) =	1,825	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-4A (Disposal Pits A/B)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Surface Soil (mg/kg)	EPC from Total Soils (mg/kg)	Current Site Worker Absorbed Dose (mg/kg-day) (Nc)	Current Site Worker Absorbed Dose (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Absorbed Dose (mg/kg-day) (Nc)	Future Outdoor Park Worker Absorbed Dose (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk
Volatile Organics													
Acetone	1.00E-01	NA	NA	1.21E-02	1.07E-02								
Benzene	2.85E-03	3.05E-02	NA	NA	6.00E-03								
Ethyl benzene	1.00E-01	NA	NA	NA	9.00E-03								
Methyl butyl ketone	NA	NA	NA	1.00E-03	1.00E-03								
Methylene chloride	5.88E-02	7.65E-03	NA	1.00E-03	3.00E-03								
Styrene	2.00E-01	NA	NA	NA	7.31E-03								
Toluene	2.00E-01	NA	NA	4.00E-03	7.16E-03								
Total Xylenes	1.80E+00	NA	NA	NA	1.44E-02								
Trichloroethene	NA	1.22E-02	NA	NA	7.32E-03								
Semivolatile Organics													
2,4-Dimethylphenol	2.00E-02	NA	NA	NA	2.50E-02								
2-Methylnaphthalene	4.00E-02	NA	NA	NA	5.00E-02								
4-Methylphenol	5.00E-03	NA	NA	NA	7.78E-02								
Acenaphthene	6.00E-02	NA	NA	NA	2.30E-02								
Acenaphthylene	NA	NA	NA	NA	3.30E-02								
Anthracene	3.00E-01	NA	NA	NA	8.06E-02								
Benzo(a)anthracene	NA	7.30E-01	NA	2.70E-02	8.48E-02								
Benzo(a)pyrene	NA	1.46E+01	NA	2.70E-02	8.04E-02								
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.60E-02	8.20E-02								
Benzo(ghi)perylene	NA	NA	NA	3.10E-02	8.83E-02								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.60E-02	7.79E-02								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	7.32E-02	1.66E-01								
Butylbenzylphthalate	2.00E-01	NA	NA	2.29E-02	2.29E-02								
Carbazole	NA	2.00E-02	NA	2.75E-02	2.75E-02								
Chrysene	NA	7.30E-03	NA	5.10E-02	8.98E-02								
Di-n-butylphthalate	9.00E-02	NA	NA	5.35E-02	1.10E-01								
Di-n-octylphthalate	2.00E-02	NA	NA	2.34E-02	5.40E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	NA	2.75E-02	5.26E-02								
Dibenzofuran	NA	NA	NA	2.23E-02	2.23E-02								
Fluoranthene	4.00E-02	NA	NA	2.44E-02	9.57E-02								
Fluorene	4.00E-02	NA	NA	2.22E-02	4.98E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.85E-02	8.60E-02								
Naphthalene	2.00E-02	NA	NA	NA	9.76E-02								
Phenanthrene	NA	NA	NA	2.38E-02	9.61E-02								
Phenol	5.40E-01	NA	NA	NA	7.71E-02								
Pyrene	3.00E-02	NA	NA	2.20E-02	1.02E-01								
Pesticides/PCBs													
4,4'-DDE	NA	1.70E+00	NA	4.08E-03	3.86E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	6.09E-03	2.91E-03								
Aldrin	1.50E-05	3.40E+01	NA	NA	7.90E-04								
Alpha-BHC	NA	6.30E+00	NA	NA	1.59E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	NA	NA	1.26E-03								
Aroclor-1254	1.80E-05	2.22E+00	6.00E-02	1.90E-01	2.09E-01	4.46E-09	4.46E-10	2E-04	1E-09	6.83E-08	6.83E-09	4E-03	2E-08
Aroclor-1260	1.80E-05	2.22E+00	6.00E-02	NA	2.50E-02								
Beta-BHC	NA	1.80E+00	NA	NA	1.18E-03								
Dieldrin	2.50E-05	3.20E+01	NA	4.13E-03	3.82E-03								
Endosulfan I	6.00E-03	NA	NA	1.17E-03	1.16E-03								
Endosulfan II	6.00E-03	NA	NA	2.14E-03	2.72E-03								
Endrin	3.00E-04	NA	NA	2.43E-03	3.15E-03								
Endrin aldehyde	NA	NA	NA	2.75E-03	2.37E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	NA	3.76E-03	3.19E-03								
Heptachlor	5.00E-04	4.50E+00	NA	NA	1.45E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	1.85E-03	1.64E-03								
Metals													
Copper	2.40E-02	NA	NA	2.25E+01	3.33E+01								
Cyanide	1.00E-02	NA	NA	6.25E-01	4.31E-01								
Selenium	4.50E-03	NA	NA	7.39E-01	5.98E-01								
Thallium	8.00E-05	NA	NA	1.07E+00	8.48E-01								
Total Hazard Quotient and Cancer Risk:								2E-04	1E-09			4E-03	2E-08

Assumptions for Current Site Worker		Assumptions for Future Outdoor Park Worker	
CS =	EPC Surface Only	CS =	EPC Surface Only
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	5000 cm2	SA =	5000 cm2
AF =	0.2 mg/cm2	AF =	0.2 mg/cm2
EF =	10 days/year	EF =	153 days/year
ED =	7 years	ED =	7 years
BW =	70 kg	BW =	70 kg
AT (Nc) =	2,555 days	AT (Nc) =	2,555 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-4A (Disposal Pits A/B)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Surface Soil (mg/kg)	EPC from Total Soils (mg/kg)	Future Recreational Visitor (Child) Absorbed Dose (mg/kg-day) (Nc)	(Car)	Hazard Quotient	Cancer Risk	Future Construction Worker Absorbed Dose (mg/kg-day) (Nc)	(Car)	Hazard Quotient	Cancer Risk
Volatile Organics													
Acetone	1.00E-01	NA	NA	1.21E-02	1.07E-02								
Benzene	2.85E-03	3.05E-02	NA	NA	6.00E-03								
Ethyl benzene	1.00E-01	NA	NA	NA	9.00E-03								
Methyl butyl ketone	NA	NA	NA	1.00E-03	1.00E-03								
Methylene chloride	5.88E-02	7.65E-03	NA	1.00E-03	3.00E-03								
Styrene	2.00E-01	NA	NA	NA	7.31E-03								
Toluene	2.00E-01	NA	NA	4.00E-03	7.16E-03								
Total Xylenes	1.80E+00	NA	NA	NA	1.44E-02								
Trichloroethene	NA	1.22E-02	NA	NA	7.32E-03								
Semivolatile Organics													
2,4-Dimethylphenol	2.00E-02	NA	NA	NA	2.50E-02								
2-Methylnaphthalene	4.00E-02	NA	NA	NA	5.00E-02								
4-Methylphenol	5.00E-03	NA	NA	NA	7.78E-02								
Acenaphthene	6.00E-02	NA	NA	NA	2.30E-02								
Acenaphthylene	NA	NA	NA	NA	3.30E-02								
Anthracene	3.00E-01	NA	NA	NA	8.06E-02								
Benzo(a)anthracene	NA	7.30E-01	NA	2.70E-02	8.48E-02								
Benzo(a)pyrene	NA	1.46E+01	NA	2.70E-02	8.04E-02								
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.60E-02	8.20E-02								
Benzo(ghi)perylene	NA	NA	NA	3.10E-02	8.83E-02								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.60E-02	7.79E-02								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	7.32E-02	1.66E-01								
Butylbenzylphthalate	2.00E-01	NA	NA	2.29E-02	2.29E-02								
Carbazole	NA	2.00E-02	NA	2.75E-02	2.75E-02								
Chrysene	NA	7.30E-03	NA	5.10E-02	8.98E-02								
Di-n-butylphthalate	9.00E-02	NA	NA	5.35E-02	1.10E-01								
Di-n-octylphthalate	2.00E-02	NA	NA	2.34E-02	5.40E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	NA	2.75E-02	5.26E-02								
Dibenzofuran	NA	NA	NA	2.23E-02	2.23E-02								
Fluoranthene	4.00E-02	NA	NA	2.44E-02	9.57E-02								
Fluorene	4.00E-02	NA	NA	2.22E-02	4.98E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.85E-02	8.60E-02								
Naphthalene	2.00E-02	NA	NA	2.38E-02	9.76E-02								
Phenanthrene	NA	NA	NA	ERR	9.61E-02								
Phenol	5.40E-01	NA	NA	NA	7.71E-02								
Pyrene	3.00E-02	NA	NA	2.20E-02	1.02E-01								
Pesticides/PCBs													
4,4'-DDE	NA	1.70E+00	NA	4.08E-03	3.86E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	6.09E-03	2.91E-03								
Aldrin	1.50E-05	3.40E+01	NA	NA	7.90E-04								
Alpha-BHC	NA	6.30E+00	NA	NA	1.59E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	NA	NA	1.26E-03								
Aroclor-1254	1.80E-05	2.22E+00	6.00E-02	1.90E-01	2.09E-01	5.77E-09	8.25E-11	3E-04	2E-10	1.07E-07	1.54E-09	6E-03	3E-09
Aroclor-1260	1.80E-05	2.22E+00	6.00E-02	NA	2.50E-02					1.29E-08	1.84E-10	7E-04	4E-10
Beta-BHC	NA	1.80E+00	NA	NA	1.18E-03								
Dieldrin	2.50E-05	3.20E+01	NA	4.13E-03	3.82E-03								
Endosulfan I	6.00E-03	NA	NA	1.17E-03	1.16E-03								
Endosulfan II	6.00E-03	NA	NA	2.14E-03	2.72E-03								
Endrin	3.00E-04	NA	NA	2.43E-03	3.15E-03								
Endrin aldehyde	NA	NA	NA	2.75E-03	2.37E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	NA	3.76E-03	3.19E-03								
Heptachlor	5.00E-04	4.50E+00	NA	NA	1.45E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	1.85E-03	1.64E-03								
Metals													
Copper	2.40E-02	NA	NA	2.25E+01	3.33E+01								
Cyanide	1.00E-02	NA	NA	6.25E-01	4.31E-01								
Selenium	4.50E-03	NA	NA	7.39E-01	5.98E-01								
Thallium	8.00E-05	NA	NA	1.07E+00	8.48E-01								
Total Hazard Quotient and Cancer Risk:								3E-04	2E-10			7E-03	4E-09

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CS =	EPC Surface Only	CS =	EPC Surface and Subsurface
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	1980 cm2	SA =	5000 cm2
AF =	0.2 mg/cm2	AF =	0.2 mg/cm2
EF =	7 days/year	EF =	219 days/year
ED =	1 years	ED =	1 years
BW =	15 kg	BW =	70 kg
AT (Nc) =	365 days	AT (Nc) =	365 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-4A (Disposal Pits A/B)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Surface Soil (mg/kg)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics													
Acetone	1.00E-01	NA	NA	1.21E-02									
Benzene	2.85E-03	3.05E-02	NA	NA									
Ethyl benzene	1.00E-01	NA	NA	NA									
Methyl butyl ketone	NA	NA	NA	1.00E-03									
Methylene chloride	5.88E-02	7.65E-03	NA	1.00E-03									
Styrene	2.00E-01	NA	NA	NA									
Toluene	2.00E-01	NA	NA	4.00E-03									
Total Xylenes	1.80E+00	NA	NA	NA									
Trichloroethene	NA	1.22E-02	NA	NA									
Semivolatile Organics													
2,4-Dimethylphenol	2.00E-02	NA	NA	NA									
2-Methylnaphthalene	4.00E-02	NA	NA	NA									
4-Methylphenol	5.00E-03	NA	NA	NA									
Acenaphthene	6.00E-02	NA	NA	NA									
Acenaphthylene	NA	NA	NA	NA									
Anthracene	3.00E-01	NA	NA	NA									
Benzo(a)anthracene	NA	7.30E-01	NA	2.70E-02									
Benzo(a)pyrene	NA	1.46E+01	NA	2.70E-02									
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.60E-02									
Benzo(ghi)perylene	NA	NA	NA	3.10E-02									
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.60E-02									
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	7.32E-02									
Butylbenzylphthalate	2.00E-01	NA	NA	2.29E-02									
Carbazole	NA	2.00E-02	NA	2.75E-02									
Chrysene	NA	7.30E-03	NA	5.10E-02									
Di-n-butylphthalate	9.00E-02	NA	NA	5.35E-02									
Di-n-octylphthalate	2.00E-02	NA	NA	2.34E-02									
Dibenz(a,h)anthracene	NA	7.30E+00	NA	2.75E-02									
Dibenzofuran	NA	NA	NA	2.23E-02									
Fluoranthene	4.00E-02	NA	NA	2.44E-02									
Fluorene	4.00E-02	NA	NA	2.22E-02									
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.85E-02									
Naphthalene	2.00E-02	NA	NA	2.38E-02									
Phenanthrene	NA	NA	NA	ERR									
Phenol	5.40E-01	NA	NA	NA									
Pyrene	3.00E-02	NA	NA	2.20E-02									
Pesticides/PCBs													
4,4'-DDE	NA	1.70E+00	NA	4.08E-03									
4,4'-DDT	1.00E-04	1.70E+00	NA	6.09E-03									
Aldrin	1.50E-05	3.40E+01	NA	NA									
Alpha-BHC	NA	6.30E+00	NA	NA									
Alpha-Chlordane	5.00E-04	3.50E-01	NA	NA									
Aroclor-1254	1.80E-05	2.22E+00	6.00E-02	1.90E-01	1.04E-07	1.04E-08	6E-03	2E-08	1.93E-07	5.51E-09	1E-02	1E-08	4E-08
Aroclor-1260	1.80E-05	2.22E+00	6.00E-02	NA									
Beta-BHC	NA	1.80E+00	NA	NA									
Dieldrin	2.50E-05	3.20E+01	NA	4.13E-03									
Endosulfan I	6.00E-03	NA	NA	1.17E-03									
Endosulfan II	6.00E-03	NA	NA	2.14E-03									
Endrin	3.00E-04	NA	NA	2.43E-03									
Endrin aldehyde	NA	NA	NA	2.75E-03									
Gamma-Chlordane	5.00E-04	3.50E-01	NA	3.76E-03									
Heptachlor	5.00E-04	4.50E+00	NA	NA									
Heptachlor epoxide	1.30E-05	9.10E+00	NA	1.85E-03									
Metals													
Copper	2.40E-02	NA	NA	2.25E+01									
Cyanide	1.00E-02	NA	NA	6.25E-01									
Selenium	4.50E-03	NA	NA	7.39E-01									
Thallium	8.00E-05	NA	NA	1.07E+00									
Total Hazard Quotient and Cancer Risk:							6E-03				1E-02		4E-08

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CS =	EPC Surface Only	CS =	EPC Surface Only
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	5,000 cm2	SA =	1,980 cm2
AF =	0.2 mg/cm2	AF =	0.2 mg/cm2
EF =	234 days/year	EF =	234 days/year
ED =	7 years	ED =	2 years
BW =	70 kg	BW =	15 kg
AT (Nc) =	2555 days	AT (Nc) =	730 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-4B (Disposal Pit C)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD	Carc. Slope Dermal	Absorption Factor*	EPC Surface Soil	EPC from Total Soils	Current Site Worker				Future Outdoor Park Worker			
						Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk	Absorbed Dose (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(unitless)	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics													
Acetone	1.00E-01	NA	NA	9.95E-03	8.64E-03								
Chlorobenzene	2.00E-02	NA	NA	ND	5.00E-03								
Methylene chloride	5.88E-02	7.65E-03	NA	ND	7.84E-03								
Tetrachloroethene	1.00E-02	5.20E-02	NA	ND	2.00E-03								
Toluene	2.00E-01	NA	NA	ND	7.37E-03								
Total Xylenes	1.80E+00	NA	NA	ND	6.32E-03								
Trichloroethene	NA	1.22E-02	NA	ND	2.00E-03								
Semivolatile Organics													
2-Methylnaphthalene	4.00E-02	NA	NA	ND	2.20E-02								
Acenaphthene	6.00E-02	NA	NA	ND	4.40E-02								
Anthracene	3.00E-01	NA	NA	4.60E-03	6.30E-02								
Benzo(a)anthracene	NA	7.30E-01	NA	2.60E-02	1.08E-01								
Benzo(a)pyrene	NA	1.46E+01	NA	2.00E-02	8.61E-02								
Benzo(b)fluoranthene	NA	7.30E-01	NA	2.80E-02	1.07E-01								
Benzo(ghi)perylene	NA	NA	NA	2.65E-02	8.01E-02								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.75E-02	1.05E-01								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	5.80E-03	1.60E-02								
Butylbenzylphthalate	2.00E-01	NA	NA	ND	3.00E-02								
Carbazole	NA	2.00E-02	NA	2.37E-02	4.00E-02								
Chrysene	NA	7.30E-03	NA	2.23E-02	1.13E-01								
Di-n-butylphthalate	9.00E-02	NA	NA	4.50E-03	5.20E-02								
Di-n-octylphthalate	2.00E-02	NA	NA	7.30E-03	2.00E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	NA	2.33E-02	8.68E-02								
Fluoranthene	4.00E-02	NA	NA	3.61E-02	1.06E-01								
Fluorene	4.00E-02	NA	NA	ND	3.50E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.65E-02	9.27E-02								
N-Nitrosodiphenylamine	NA	4.90E-03	NA	ND	1.49E-01								
Naphthalene	2.00E-02	NA	NA	ND	1.30E-02								
Phenanthrene	NA	NA	NA	2.10E-02	1.06E-01								
Pyrene	3.00E-02	NA	NA	3.60E-02	1.03E-01								
Dibenzofuran	NA	NA	NA	ND	4.10E-03								
Pesticides/PCBs													
4,4'-DDD	NA	1.20E+00	NA	4.43E-03	2.56E-03								
4,4'-DDE	NA	1.70E+00	NA	ND	2.26E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	2.13E-03	2.33E-03								
Alpha-BHC	NA	6.30E+00	NA	ND	1.16E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	NA	ND	1.07E-03								
Aroclor-1254	1.80E-05	2.22E+00	NA	ND	2.03E-02								
Aroclor-1260	1.80E-05	2.22E+00	NA	ND	2.03E-02								
Beta-BHC	NA	1.80E+00	NA	ND	1.06E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	NA	ND	1.07E-03								
Heptachlor	5.00E-04	4.50E+00	NA	ND	1.21E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	ND	1.07E-03								
Metals													
Calcium	NA	NA	NA	7.59E+01	9.59E+04								
Selenium	4.50E-03	NA	NA	7.54E-04	7.18E-01								
Thallium	8.00E-05	NA	NA	1.67E-03	8.77E-01								
Cyanide	1.00E-02	NA	NA	ND	3.53E-01								
Total Hazard Quotient and Cancer Risk:													

Assumptions for Current Site Worker		Assumptions for Future Outdoor Park Worker	
CS =	EPC Surface Only	CS =	EPC Surface Only
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	5000 cm2	SA =	5000 cm2
AF =	0.2 mg/cm2	AF =	0.2 mg/cm2
EF =	10 days/year	EF =	153 days/year
ED =	7 years	ED =	7 years
BW =	70 kg	BW =	70 kg
AT (Nc) =	2,555 days	AT (Nc) =	2,555 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-4B (Disposal Pit C)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Surface Soil (mg/kg)	EPC from Total Soils (mg/kg)	Future Recreational Visitor (Child) Absorbed Dose (mg/kg-day) (Nc)	(Car)	Hazard Quotient	Cancer Risk	Future Construction Worker Absorbed Dose (mg/kg-day) (Nc)	(Car)	Hazard Quotient	Cancer Risk
Volatile Organics													
Acetone	1.00E-01	NA	NA	9.95E-03	8.64E-03								
Chlorobenzene	2.00E-02	NA	NA	ND	5.00E-03								
Methylene chloride	5.88E-02	7.65E-03	NA	ND	7.84E-03								
Tetrachloroethene	1.00E-02	5.20E-02	NA	ND	2.00E-03								
Toluene	2.00E-01	NA	NA	ND	7.37E-03								
Total Xylenes	1.80E+00	NA	NA	ND	6.32E-03								
Trichloroethene	NA	1.22E-02	NA	ND	2.00E-03								
Semivolatile Organics													
2-Methylnaphthalene	4.00E-02	NA	NA	ND	2.20E-02								
Acenaphthene	6.00E-02	NA	NA	ND	4.40E-02								
Anthracene	3.00E-01	NA	NA	4.60E-03	6.30E-02								
Benzo(a)anthracene	NA	7.30E-01	NA	2.60E-02	1.08E-01								
Benzo(a)pyrene	NA	1.46E+01	NA	2.00E-02	8.61E-02								
Benzo(b)fluoranthene	NA	7.30E-01	NA	2.80E-02	1.07E-01								
Benzo(ghi)perylene	NA	NA	NA	2.65E-02	8.01E-02								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.75E-02	1.05E-01								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	5.80E-03	1.60E-02								
Butylbenzylphthalate	2.00E-01	NA	NA	ND	3.00E-02								
Carbazole	NA	2.00E-02	NA	2.37E-02	4.00E-02								
Chrysene	NA	7.30E-03	NA	2.23E-02	1.13E-01								
Di-n-butylphthalate	9.00E-02	NA	NA	4.50E-03	5.20E-02								
Di-n-octylphthalate	2.00E-02	NA	NA	7.30E-03	2.00E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	NA	2.33E-02	8.68E-02								
Fluoranthene	4.00E-02	NA	NA	3.61E-02	1.06E-01								
Fluorene	4.00E-02	NA	NA	ND	3.50E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.65E-02	9.27E-02								
N-Nitrosodiphenylamine	NA	4.90E-03	NA	ND	1.49E-01								
Naphthalene	2.00E-02	NA	NA	ND	1.30E-02								
Phenanthrene	NA	NA	NA	2.10E-02	1.06E-01								
Pyrene	3.00E-02	NA	NA	3.60E-02	1.03E-01								
Dibenzofuran	NA	NA	NA	ND	4.10E-03								
Pesticides/PCBs													
4,4'-DDD	NA	1.20E+00	NA	4.43E-03	2.56E-03								
4,4'-DDE	NA	1.70E+00	NA	ND	2.26E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	2.13E-03	2.33E-03								
Alpha-BHC	NA	6.30E+00	NA	ND	1.16E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	NA	ND	1.07E-03								
Aroclor-1254	1.80E-05	2.22E+00	NA	ND	2.03E-02								
Aroclor-1260	1.80E-05	2.22E+00	NA	ND	2.03E-02								
Beta-BHC	NA	1.80E+00	NA	ND	1.06E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	NA	ND	1.07E-03								
Heptachlor	5.00E-04	4.50E+00	NA	ND	1.21E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	ND	1.07E-03								
Metals													
Calcium	NA	NA	NA	7.59E+01	9.59E+04								
Selenium	4.50E-03	NA	NA	7.54E-04	7.18E-01								
Thallium	8.00E-05	NA	NA	1.67E-03	8.77E-01								
Cyanide	1.00E-02	NA	NA	ND	3.53E-01								
Total Hazard Quotient and Cancer Risk:													

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CS =	EPC Surface Only	CS =	EPC Surface and Subsurface
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	1980 cm2	SA =	5000 cm2
AF =	0.2 mg/cm2	AF =	0.2 mg/cm2
EF =	7 days/year	EF =	219 days/year
ED =	1 years	ED =	1 years
BW =	15 kg	BW =	70 kg
AT (Nc) =	365 days	AT (Nc) =	365 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-4B (Disposal Pit C)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Surface Soil (mg/kg)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics													
Acetone	1.00E-01	NA	NA	9.95E-03									
Chlorobenzene	2.00E-02	NA	NA	ND									
Methylene chloride	5.88E-02	7.65E-03	NA	ND									
Tetrachloroethene	1.00E-02	5.20E-02	NA	ND									
Toluene	2.00E-01	NA	NA	ND									
Total Xylenes	1.80E+00	NA	NA	ND									
Trichloroethene	NA	1.22E-02	NA	ND									
Semivolatile Organics													
2-Methylnaphthalene	4.00E-02	NA	NA	ND									
Acenaphthene	6.00E-02	NA	NA	ND									
Anthracene	3.00E-01	NA	NA	4.60E-03									
Benzo(a)anthracene	NA	7.30E-01	NA	2.60E-02									
Benzo(a)pyrene	NA	1.46E+01	NA	2.00E-02									
Benzo(b)fluoranthene	NA	7.30E-01	NA	2.80E-02									
Benzo(ghi)perylene	NA	NA	NA	2.65E-02									
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.75E-02									
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	5.80E-03									
Butylbenzylphthalate	2.00E-01	NA	NA	ND									
Carbazole	NA	2.00E-02	NA	2.37E-02									
Chrysene	NA	7.30E-03	NA	2.23E-02									
Di-n-butylphthalate	9.00E-02	NA	NA	4.50E-03									
Di-n-octylphthalate	2.00E-02	NA	NA	7.30E-03									
Dibenz(a,h)anthracene	NA	7.30E+00	NA	2.33E-02									
Fluoranthene	4.00E-02	NA	NA	3.61E-02									
Fluorene	4.00E-02	NA	NA	ND									
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.65E-02									
N-Nitrosodiphenylamine	NA	4.90E-03	NA	ND									
Naphthalene	2.00E-02	NA	NA	ND									
Phenanthrene	NA	NA	NA	2.10E-02									
Pyrene	3.00E-02	NA	NA	3.60E-02									
Dibenzofuran	NA	NA	NA	ND									
Pesticides/PCBs													
4,4'-DDD	NA	1.20E+00	NA	4.43E-03									
4,4'-DDE	NA	1.70E+00	NA	ND									
4,4'-DDT	1.00E-04	1.70E+00	NA	2.13E-03									
Alpha-BHC	NA	6.30E+00	NA	ND									
Alpha-Chlordane	5.00E-04	3.50E-01	NA	ND									
Aroclor-1254	1.80E-05	2.22E+00	NA	ND									
Aroclor-1260	1.80E-05	2.22E+00	NA	ND									
Beta-BHC	NA	1.80E+00	NA	ND									
Gamma-Chlordane	5.00E-04	3.50E-01	NA	ND									
Heptachlor	5.00E-04	4.50E+00	NA	ND									
Heptachlor epoxide	1.30E-05	9.10E+00	NA	ND									
Metals													
Calcium	NA	NA	NA	7.59E+01									
Selenium	4.50E-03	NA	NA	7.54E-04									
Thallium	8.00E-05	NA	NA	1.67E-03									
Cyanide	1.00E-02	NA	NA	ND									
Total Hazard Quotient and Cancer Risk:													

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CS =	EPC Surface Only	CS =	EPC Surface Only
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	5,000 cm2	SA =	1,980 cm2
AF =	0.2 mg/cm2	AF =	0.2 mg/cm2
EF =	234 days/year	EF =	234 days/year
ED =	7 years	ED =	2 years
BW =	70 kg	BW =	15 kg
AT (Nc) =	2555 days	AT (Nc) =	730 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-4C (Former Dry Waste Disposal Pit)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Surface Soil (mg/kg)	EPC from Total Soils (mg/kg)	Current Site Worker Absorbed Dose (mg/kg-day) (Nc)	Current Site Worker Absorbed Dose (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Absorbed Dose (mg/kg-day) (Nc)	Future Outdoor Park Worker Absorbed Dose (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk
Volatile Organics													
Acetone	1.00E-01	NA	NA	6.23E-03	1.10E-02								
Benzene	2.85E-03	3.05E-02	NA	ND	2.00E-03								
Carbon disulfide	6.30E-02	NA	NA	ND	3.00E-03								
Methyl ethyl ketone	6.00E-01	NA	NA	ND	3.00E-03								
Methylene chloride	5.88E-02	7.65E-03	NA	ND	2.00E-03								
Toluene	2.00E-01	NA	NA	8.02E-03	6.18E-03								
Semivolatile Organics													
1,2,4-Trichlorobenzene	5.00E-03	NA	NA	2.35E-02	2.35E-02								
2-Methylnaphthalene	4.00E-02	NA	NA	5.50E-03	5.50E-03								
Benzo(a)anthracene	NA	7.30E-01	NA	2.60E-02	2.60E-02								
Benzo(a)pyrene	NA	1.46E+01	NA	2.00E-02	2.00E-02								
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.40E-02	3.40E-02								
Benzo(ghi)perylene	NA	NA	NA	2.35E-02	2.35E-02								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.00E-02	2.00E-02								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	3.60E-02	7.02E-02								
Butylbenzylphthalate	2.00E-01	NA	NA	5.90E-03	7.20E-03								
Chrysene	NA	7.30E-03	NA	3.20E-02	3.20E-02								
Di-n-butylphthalate	9.00E-02	NA	NA	2.01E-02	1.19E-01								
Di-n-octylphthalate	2.00E-02	NA	NA	1.50E-02	3.40E-02								
Diethyl phthalate	8.00E-01	NA	NA	1.10E-02	1.10E-02								
Fluoranthene	4.00E-02	NA	NA	5.55E-02	6.40E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	6.15E-03	6.10E-03								
Naphthalene	2.00E-02	NA	NA	5.40E-03	5.40E-03								
Phenanthrene	NA	NA	NA	3.40E-02	3.40E-02								
Pyrene	3.00E-02	NA	NA	3.07E-02	5.10E-02								
Pesticides/PCBs													
4,4'-DDE	NA	1.70E+00	NA	2.00E-03	1.92E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	2.54E-03	1.98E-03								
Aroclor-1242	NA	NA	NA	1.70E-02	1.70E-02								
Aroclor-1254	1.80E-05	2.22E+00	NA	2.08E-02	1.93E-02								
Aroclor-1260	1.80E-05	2.22E+00	NA	2.13E-02	1.93E-02								
Endrin aldehyde	NA	NA	NA	2.06E-03	1.93E-03								
Metals													
Calcium	NA	NA	NA	8.04E+04	1.11E+05								
Copper	2.40E-02	NA	NA	2.33E+01	2.31E+01								
Magnesium	NA	NA	NA	1.37E+04	1.52E+04								
Selenium	4.50E-03	NA	NA	7.56E-01	6.18E-01								
Thallium	8.00E-05	NA	NA	1.16E+00	8.40E-01								
Total Hazard Quotient and Cancer Risk:													

Assumptions for Current Site Worker		Assumptions for Future Outdoor Park Worker	
CS =	EPC Surface Only	CS =	EPC Surface Only
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	5000 cm2	SA =	5000 cm2
AF =	0.2 mg/cm2	AF =	0.2 mg/cm2
EF =	10 days/year	EF =	153 days/year
ED =	7 years	ED =	7 years
BW =	70 kg	BW =	70 kg
AT (Nc) =	2,555 days	AT (Nc) =	2,555 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-4C (Former Dry Waste Disposal Pit)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Ne)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Surface Soil (mg/kg)	EPC from Total Soils (mg/kg)	Future Recreational Visitor (Child) Absorbed Dose (mg/kg-day) (Ne)	(Car)	Hazard Quotient	Cancer Risk	Future Construction Worker Absorbed Dose (mg/kg-day) (Ne)	(Car)	Hazard Quotient	Cancer Risk
Volatile Organics													
Acetone	1.00E-01	NA	NA	6.23E-03	1.10E-02								
Benzene	2.85E-03	3.05E-02	NA	ND	2.00E-03								
Carbon disulfide	6.30E-02	NA	NA	ND	3.00E-03								
Methyl ethyl ketone	6.00E-01	NA	NA	ND	3.00E-03								
Methylene chloride	5.88E-02	7.65E-03	NA	ND	2.00E-03								
Toluene	2.00E-01	NA	NA	8.02E-03	6.18E-03								
Semivolatile Organics													
1,2,4-Trichlorobenzene	5.00E-03	NA	NA	2.35E-02	2.35E-02								
2-Methylnaphthalene	4.00E-02	NA	NA	5.50E-03	5.50E-03								
Benzo(a)anthracene	NA	7.30E-01	NA	2.60E-02	2.60E-02								
Benzo(a)pyrene	NA	1.46E+01	NA	2.00E-02	2.00E-02								
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.40E-02	3.40E-02								
Benzo(ghi)perylene	NA	NA	NA	2.35E-02	2.35E-02								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.00E-02	2.00E-02								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	3.60E-02	7.02E-02								
Butylbenzylphthalate	2.00E-01	NA	NA	5.90E-03	7.20E-03								
Chrysene	NA	7.30E-03	NA	3.20E-02	3.20E-02								
Di-n-butylphthalate	9.00E-02	NA	NA	2.01E-02	1.19E-01								
Di-n-octylphthalate	2.00E-02	NA	NA	1.50E-02	3.40E-02								
Diethyl phthalate	8.00E-01	NA	NA	1.10E-02	1.10E-02								
Fluoranthene	4.00E-02	NA	NA	5.55E-02	6.40E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	6.15E-03	6.10E-03								
Naphthalene	2.00E-02	NA	NA	5.40E-03	5.40E-03								
Phenanthrene	NA	NA	NA	3.40E-02	3.40E-02								
Pyrene	3.00E-02	NA	NA	3.07E-02	5.10E-02								
Pesticides/PCBs													
4,4'-DDE	NA	1.70E+00	NA	2.00E-03	1.92E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	2.54E-03	1.98E-03								
Aroclor-1242	NA	NA	NA	1.70E-02	1.70E-02								
Aroclor-1254	1.80E-05	2.22E+00	NA	2.08E-02	1.93E-02								
Aroclor-1260	1.80E-05	2.22E+00	NA	2.13E-02	1.93E-02								
Endrin aldehyde	NA	NA	NA	2.06E-03	1.93E-03								
Metals													
Calcium	NA	NA	NA	8.04E+04	1.11E+05								
Copper	2.40E-02	NA	NA	2.33E+01	2.31E+01								
Magnesium	NA	NA	NA	1.37E+04	1.52E+04								
Selenium	4.50E-03	NA	NA	7.56E-01	6.18E-01								
Thallium	8.00E-05	NA	NA	1.16E+00	8.40E-01								
Total Hazard Quotient and Cancer Risk:													

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CS =	EPC Surface Only	CS =	EPC Surface and Subsurface
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	1980 cm2	SA =	5000 cm2
AF =	0.2 mg/cm2	AF =	0.2 mg/cm2
EF =	7 days/year	EF =	219 days/year
ED =	1 years	ED =	1 years
BW =	15 kg	BW =	70 kg
AT (Ne) =	365 days	AT (Ne) =	365 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-4C (Former Dry Waste Disposal Pit)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, from Soil EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Surface Soil (mg/kg)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics													
Acetone	1.00E-01	NA	NA	6.23E-03									
Benzene	2.85E-03	3.05E-02	NA	ND									
Carbon disulfide	6.30E-02	NA	NA	ND									
Methyl ethyl ketone	6.00E-01	NA	NA	ND									
Methylene chloride	5.88E-02	7.65E-03	NA	ND									
Toluene	2.00E-01	NA	NA	8.02E-03									
Semivolatile Organics													
1,2,4-Trichlorobenzene	5.00E-03	NA	NA	2.35E-02									
2-Methylnaphthalene	4.00E-02	NA	NA	5.50E-03									
Benzo(a)anthracene	NA	7.30E-01	NA	2.60E-02									
Benzo(a)pyrene	NA	1.46E+01	NA	2.00E-02									
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.40E-02									
Benzo(ghi)perylene	NA	NA	NA	2.35E-02									
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.00E-02									
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	3.60E-02									
Butylbenzylphthalate	2.00E-01	NA	NA	5.90E-03									
Chrysene	NA	7.30E-03	NA	3.20E-02									
Di-n-butylphthalate	9.00E-02	NA	NA	2.01E-02									
Di-n-octylphthalate	2.00E-02	NA	NA	1.50E-02									
Diethyl phthalate	8.00E-01	NA	NA	1.10E-02									
Fluoranthene	4.00E-02	NA	NA	5.55E-02									
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	6.15E-03									
Naphthalene	2.00E-02	NA	NA	5.40E-03									
Phenanthrene	NA	NA	NA	3.40E-02									
Pyrene	3.00E-02	NA	NA	3.07E-02									
Pesticides/PCBs													
4,4'-DDE	NA	1.70E+00	NA	2.00E-03									
4,4'-DDT	1.00E-04	1.70E+00	NA	2.54E-03									
Aroclor-1242	NA	NA	NA	1.70E-02									
Aroclor-1254	1.80E-05	2.22E+00	NA	2.08E-02									
Aroclor-1260	1.80E-05	2.22E+00	NA	2.13E-02									
Endrin aldehyde	NA	NA	NA	2.06E-03									
Metals													
Calcium	NA	NA	NA	8.04E+04									
Copper	2.40E-02	NA	NA	2.33E+01									
Magnesium	NA	NA	NA	1.37E+04									
Selenium	4.50E-03	NA	NA	7.56E-01									
Thallium	8.00E-05	NA	NA	1.16E+00									
Total Hazard Quotient and Cancer Risk:													

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CS =	EPC Surface Only	CS =	EPC Surface Only
CF =	1.00E-06 kg/mg	CF =	1.00E-06 kg/mg
SA =	5,000 cm2	SA =	1,980 cm2
AF =	0.2 mg/cm2	AF =	0.2 mg/cm2
EF =	234 days/year	EF =	234 days/year
ED =	7 years	ED =	2 years
BW =	70 kg	BW =	15 kg
AT (Nc) =	2555 days	AT (Nc) =	730 days
AT (Car) =	25550 days	AT (Car) =	25550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-4D (Sediment)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SEDIMENT
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Sediment, from Sediment EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Sediment (mg/kg)	Current Site Worker: Absorbed Dose (mg/kg-day) (Nc)	Current Site Worker: Absorbed Dose (mg/kg-day) (Car)	Current Site Worker: Hazard Quotient	Current Site Worker: Cancer Risk	Future Outdoor Park Worker: Absorbed Dose (mg/kg-day) (Nc)	Future Outdoor Park Worker: Absorbed Dose (mg/kg-day) (Car)	Future Outdoor Park Worker: Hazard Quotient	Future Outdoor Park Worker: Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	2.80E-01	NA	NA	3.00E-03								
Acetone	1.00E-01	NA	NA	2.32E-02								
Methyl chloride	NA	1.30E-02	NA	9.84E-03								
Methyl ethyl ketone	6.00E-01	NA	NA	1.01E-02								
Tetrachloroethene	1.00E-02	5.20E-02	NA	4.00E-03								
Toluene	2.00E-01	NA	NA	1.04E-02								
Trichloroethene	NA	1.22E-02	NA	1.05E-02								
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	NA	3.60E-02								
4-Chlorophenyl phenyl ether	NA	NA	NA	6.00E-03								
4-Methylphenol	5.00E-03	NA	NA	9.85E-02								
Acenaphthene	6.00E-02	NA	NA	1.01E-01								
Acenaphthylene	NA	NA	NA	1.50E-02								
Anthracene	3.00E-01	NA	NA	1.14E-01								
Benzo(a)anthracene	NA	7.30E-01	NA	2.86E-01								
Benzo(a)pyrene	NA	1.46E+01	NA	2.99E-01								
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.89E-01								
Benzo(ghi)perylene	NA	NA	NA	2.13E-01								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.12E-01								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	1.42E-01								
Butylbenzylphthalate	2.00E-01	NA	NA	4.20E-02								
Carbazole	NA	2.00E-02	NA	1.29E-01								
Chrysene	NA	7.30E-03	NA	3.45E-01								
Di-n-butylphthalate	9.00E-02	NA	NA	9.93E-02								
Di-n-octylphthalate	2.00E-02	NA	NA	9.82E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	NA	1.13E-01								
Benzofuran	NA	NA	NA	6.40E-02								
Dihyl phthalate	8.00E-01	NA	NA	4.00E-02								
Fluoranthene	4.00E-02	NA	NA	8.07E-01								
Fluorene	4.00E-02	NA	NA	9.30E-02								
Hexachlorobenzene	8.00E-04	1.60E+00	NA	6.20E-03								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	1.94E-01								
Naphthalene	2.00E-02	NA	NA	4.90E-02								
Phenanthrene	NA	NA	NA	4.36E-01								
Pyrene	3.00E-02	NA	NA	6.64E-01								
Pesticides/PCBs												
4,4'-DDD	NA	1.20E+00	NA	6.14E-03								
4,4'-DDE	NA	1.70E+00	NA	6.86E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	5.89E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	NA	1.73E-03								
Aroclor-1254	1.80E-05	2.22E+00	NA	4.75E-02								
Aroclor-1260	1.80E-05	2.22E+00	0.06	3.26E-02					1.7E-09	2.4E-11	9E-05	5E-11
Endosulfan I	6.00E-03	NA	0.06	1.71E-03					8.9E-11		1E-08	
Endrin	3.00E-04	NA	NA	3.40E-03								
Endrin aldehyde	NA	NA	NA	3.47E-03								
Endrin ketone	NA	NA	NA	3.73E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	2.04E-03								
Metals												
Arsenic	2.40E-04	1.88E+00	NA	6.64E+00								
Copper	2.40E-02	NA	NA	4.58E+01								
Lead	NA	NA	0.001	2.85E+01								
Magnesium	NA	NA	NA	1.27E+04								
Vanadium	7.00E-05	NA	NA	2.77E+01								
Zinc	7.50E-02	NA	0.01	2.77E+02					2.4E-06		3E-05	
Total Hazard Quotient and Cancer Risk:											**1E-04**	**5E-11**

Contact to Onsite Sediment Not Applicable for Current Site Worker

Assumptions for Future Outdoor Park Worker

CF =	1E-06	kg/mg
SA =	1980	cm2
AF =	0.2	mg/cm2
EF =	8	days/year
ED =	7	years
BW =	70	kg
AT (Nc) =	365	days
AT (Car) =	25550	days

Cells in this table were intentionally left blank due to a lack of toxicity data
NA= Information not available
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-4D (Sediment)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SEDIMENT
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Sediment, from Sediment EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Sediment (mg/kg)	Future Construction Worker: Absorbed Dose (mg/kg-day) (Nc)	Future Construction Worker: Absorbed Dose (mg/kg-day) (Car)	Future Construction Worker: Hazard Quotient	Future Construction Worker: Cancer Risk	Future Recreational Visitor (Child): Absorbed Dose (mg/kg-day) (Nc)	Future Recreational Visitor (Child): Absorbed Dose (mg/kg-day) (Car)	Future Recreational Visitor (Child): Hazard Quotient	Future Recreational Visitor (Child): Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	2.80E-01	NA	NA	3.00E-03								
Acetone	1.00E-01	NA	NA	2.32E-02								
Methyl chloride	NA	1.30E-02	NA	9.84E-03								
Methyl ethyl ketone	6.00E-01	NA	NA	1.01E-02								
Tetrachloroethene	1.00E-02	5.20E-02	NA	4.00E-03								
Toluene	2.00E-01	NA	NA	1.04E-02								
Trichloroethene	NA	1.22E-02	NA	1.05E-02								
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	NA	3.60E-02								
4-Chlorophenyl phenyl ether	NA	NA	NA	6.00E-03								
4-Methylphenol	5.00E-03	NA	NA	9.85E-02								
Acenaphthene	6.00E-02	NA	NA	1.01E-01								
Acenaphthylene	NA	NA	NA	1.50E-02								
Anthracene	3.00E-01	NA	NA	1.14E-01								
Benzo(a)anthracene	NA	7.30E-01	NA	2.86E-01								
Benzo(a)pyrene	NA	1.46E+01	NA	2.99E-01								
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.89E-01								
Benzo(ghi)perylene	NA	NA	NA	2.13E-01								
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.12E-01								
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	1.42E-01								
Butylbenzylphthalate	2.00E-01	NA	NA	4.20E-02								
Carbazole	NA	2.00E-02	NA	1.29E-01								
Chrysene	NA	7.30E-03	NA	3.45E-01								
Di-n-butylphthalate	9.00E-02	NA	NA	9.93E-02								
Di-n-octylphthalate	2.00E-02	NA	NA	9.82E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	NA	1.13E-01								
Dibenzofuran	NA	NA	NA	6.40E-02								
Diethyl phthalate	8.00E-01	NA	NA	4.00E-02								
Fluoranthene	4.00E-02	NA	NA	8.07E-01								
Fluorene	4.00E-02	NA	NA	9.30E-02								
Hexachlorobenzene	8.00E-04	1.60E+00	NA	6.20E-03								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	1.94E-01								
Naphthalene	2.00E-02	NA	NA	4.90E-02								
Phenanthrene	NA	NA	NA	4.36E-01								
Pyrene	3.00E-02	NA	NA	6.64E-01								
Pesticides/PCBs												
4,4'-DDD	NA	1.20E+00	NA	6.14E-03								
4,4'-DDE	NA	1.70E+00	NA	6.86E-03								
4,4'-DDT	1.00E-04	1.70E+00	NA	5.89E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	NA	1.73E-03								
Aroclor-1254	1.80E-05	2.22E+00	NA	4.75E-02								
Aroclor-1260	1.80E-05	2.22E+00	0.06	3.26E-02					1.06E-09	1.52E-11	6E-05	3E-11
Endosulfan I	6.00E-03	NA	0.06	1.71E-03					5.58E-11		9E-09	
Endrin	3.00E-04	NA	NA	3.40E-03								
Endrin aldehyde	NA	NA	NA	3.47E-03								
Endrin ketone	NA	NA	NA	3.73E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	NA	2.04E-03								
Metals												
Arsenic	2.40E-04	1.88E+00	NA	6.64E+00								
Copper	2.40E-02	NA	NA	4.58E+01								
Lead	NA	NA	0.001	2.85E+01								
Magnesium	NA	NA	NA	1.27E+04								
Vanadium	7.00E-05	NA	NA	2.77E+01								
Zinc	7.50E-02	NA	0.01	2.77E+02					1.51E-06		2E-05	
Total Hazard Quotient and Cancer Risk:											**8E-05**	**3E-11**

Contact to Onsite Sediment Not Applicable for Future Construction Worker

Assumptions for Future Recreational Visitor (Child)

CF =	1E-06	kg/mg
SA =	3725	cm2
AF =	0.2	mg/cm2
EF =	4	days/year
ED =	1	years
BW =	15	kg
AT (Nc) =	365	days
AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-4D (Sediment)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SEDIMENT
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CS = Chemical Concentration in Sediment, from Sediment EPC Data
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Sediment (mg/kg)	Future Resident (Adult) Absorbed Dose (mg/kg-day) (Nc)	Future Resident (Adult) Absorbed Dose (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Absorbed Dose (mg/kg-day) (Nc)	Future Resident (Child) Absorbed Dose (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics													
1,1,1-Trichloroethane	2.80E-01	NA	NA	3.00E-03									
Acetone	1.00E-01	NA	NA	2.32E-02									
Methyl chloride	NA	1.30E-02	NA	9.84E-03									
Methyl ethyl ketone	6.00E-01	NA	NA	1.01E-02									
Tetrachloroethene	1.00E-02	5.20E-02	NA	4.00E-03									
Toluene	2.00E-01	NA	NA	1.04E-02									
Trichloroethene	NA	1.22E-02	NA	1.05E-02									
Semivolatile Organics													
2-Methylnaphthalene	4.00E-02	NA	NA	3.60E-02									
4-Chlorophenyl phenyl ether	NA	NA	NA	6.00E-03									
4-Methylphenol	5.00E-03	NA	NA	9.85E-02									
Acenaphthene	6.00E-02	NA	NA	1.01E-01									
Acenaphthylene	NA	NA	NA	1.50E-02									
Anthracene	3 00E-01	NA	NA	1.14E-01									
Benzo(a)anthracene	NA	7.30E-01	NA	2.86E-01									
Benzo(a)pyrene	NA	1.46E+01	NA	2.99E-01									
Benzo(b)fluoranthene	NA	7.30E-01	NA	3.89E-01									
Benzo(ghi)perylene	NA	NA	NA	2.13E-01									
Benzo(k)fluoranthene	NA	7.30E-02	NA	2.12E-01									
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	1 42E-01									
Butylbenzylphthalate	2.00E-01	NA	NA	4.20E-02									
Carbazole	NA	2.00E-02	NA	1.29E-01									
Chrysene	NA	7.30E-03	NA	3.45E-01									
Di-n-butylphthalate	9.00E-02	NA	NA	9.93E-02									
Di-n-octylphthalate	2.00E-02	NA	NA	9.82E-02									
nz(a,h)anthracene	NA	7.30E+00	NA	1.13E-01									
nzofuran	NA	NA	NA	6.40E-02									
ethyl phthalate	8.00E-01	NA	NA	4.00E-02									
Fluoranthene	4.00E-02	NA	NA	8.07E-01									
Fluorene	4.00E-02	NA	NA	9.30E-02									
Hexachlorobenzene	8.00E-04	1.60E+00	NA	6.20E-03									
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	1.94E-01									
Naphthalene	2.00E-02	NA	NA	4.90E-02									
Phenanthrene	NA	NA	NA	4.36E-01									
Pyrene	3.00E-02	NA	NA	6.64E-01									
Pesticides/PCBs													
4,4'-DDD	NA	1.20E+00	NA	6.14E-03									
4,4'-DDE	NA	1.70E+00	NA	6.86E-03									
4,4'-DDT	1.00E-04	1.70E+00	NA	5.89E-03									
Alpha-Chlordane	5.00E-04	3.50E-01	NA	1.73E-03									
Aroclor-1254	1.80E-05	2.22E+00	NA	4.75E-02									
Aroclor-1260	1.80E-05	2.22E+00	0.06	3.26E-02	1.46E-09	1.46E-10	8E-05	3E-10	1.70E-09	4.87E-11	9E-05	1E-10	4E-10
Endosulfan I	6.00E-03	NA	0.06	1.71E-03	7.66E-11		1E-08		8 94E-11		1E-08		
Endrin	3.00E-04	NA	NA	3.40E-03									
Endrin aldehyde	NA	NA	NA	3.47E-03									
Endrin ketone	NA	NA	NA	3.73E-03									
Heptachlor epoxide	1.30E-05	9.10E+00	NA	2.04E-03									
Metals													
Arsenic	2.40E-04	1.88E+00	NA	6.64E+00									
Copper	2.40E-02	NA	NA	4.58E+01									
Lead	NA	NA	0.001	2.85E+01									
Magnesium	NA	NA	NA	1.27E+04									
Vanadium	7.00E-05	NA	NA	2.77E+01									
Zinc	7.50E-02	NA	0.01	2.77E+02	2.07E-06		3E-05		2.41E-06		3E-05		
Total Hazard Quotient and Cancer Risk:							**1E-04**				**1E-04**		**4E-10**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
SA =	6,360	cm2	SA =	1,590	cm2
AF =	0.20	mg/cm2	AF =	0.20	mg/cm2
EF =	15	days/year	EF =	15	days/year
ED =	7	years	ED =	2	years
BW =	70	kg	BW =	15	kg
AT (Nc) =	2,555	days	AT (Nc) =	730	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for other chemicals of concern.

TABLE L-4E (Groundwater)
CALCULATION OF INTAKE AND RISK FROM DERMAL CONTACT TO GROUNDWATER (WHILE SHOWERING)
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):
For organics: $DA = 2Kp \cdot CW \sqrt{\frac{6 \cdot \tau \cdot ET}{\pi}} \cdot CF$
For inorganics: DA = Kp x CW x ET x CF
Kp = Permeability Coefficient
CW = EPC Cderm
ET = Exposure Time
τ = Lag Time
CF = Conversion Factor

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose
Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient Kp (cm/hr)	Tau (hours)	EPC Groundwater (mg/liter)	Absorbed Dose/Event (mg-cm²/event)	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Future Construction Worker Intake (mg/kg-day) (Car)	Future Construction Worker Hazard Quotient	Future Construction Worker Cancer Risk
Volatile Organics																						
1,1,1-Trichloroethane	2.80E-01	NA	1.70E-02	5.70E-01	1.13E-03	1.65E-08									1.68E-07		6E-07					
1,2-Dichloroethene (total)	9.00E-03	NA	1.00E-02	3.40E-01	1.79E-02	1.19E-07									1.21E-06		1E-04					
Acetone	1.00E-01	NA	7.40E-02	2.00E-01	3.99E-03	1.50E-07									1.53E-06		2E-05					
Toluene	2.00E-01	NA	4.50E-02	3.20E-01	1.16E-03	3.37E-08									3.41E-07		2E-06					
Trichloroethene	NA	1.22E-02	1.60E-02	5.50E-01	2.41E-03	3.26E-08										4.72E-09		6E-11				
							Dermal Contact to Groundwater Not Applicable for Current Site Worker				Dermal Contact to Groundwater Not Applicable for Future Outdoor Park Worker								Dermal Contact to Groundwater Not Applicable for Construction Worker			
Semivolatile Organics																						
1,4-Dichlorobenzene	NA	2.40E-02	6.2E-02	6.9E-01	9.30E-05	5.46E-09										7.91E-10		2E-11				
Benzo(a)pyrene	NA	1.46E+01	1.2E+00	2.9E+00	9.70E-05	2.26E-07										3.27E-08		5E-07				
Benzo(b)fluoranthene	NA	7.30E-01	1.20E+00	3.00E+00	7.60E-05	1.80E-07										2.61E-08		2E-08				
Benzo(ghi)perylene	NA	NA	1.65E+00	4.24E+00	1.80E-04	6.96E-07																
Benzo(k)fluoranthene	NA	7.30E-02	1.11E+00	3.03E+00	9.10E-05	2.00E-07										2.89E-08		2E-09				
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	5.27E-03	2.11E+01	2.06E-04	5.68E-09									5.76E-08	8.23E-10	6E-06	2E-11				
Butylbenzylphthalate	2.00E-01	NA	6.06E-02	7.04E+00	6.40E-05	1.17E-08									1.19E-07		6E-07					
Di-n-butylphthalate	9.00E-02	NA	3.61E-01	4.36E+00	2.10E-04	1.81E-07									1.83E-06		2E-05					
Di-n-octylphthalate	2.00E-02	NA	4.42E+00	2.12E+01	4.10E-04	9.53E-06									9.66E-05		5E-03					
Diethyl phthalate	8.00E-01	NA	4.80E-03	2.00E+00	1.03E-03	7.97E-09									8.08E-08		1E-07					
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.90E+00	4.20E+00	1.00E-04	4.44E-07										6.43E-08		5E-08				
Phenol	5.40E-01	NA	5.50E-03	3.30E-01	4.30E-04	1.55E-09									1.57E-08		3E-08					
Pyrene	3.00E-02	NA	3.24E-01	1.50E+00	8.00E-05	3.62E-08									3.67E-07		1E-05					
Pesticides/PCBs																						
Beta-BHC	NA	1.80E+00	1.88E-02	5.20E+00	3.30E-06	1.61E-10										2.34E-11		4E-11				
Gamma-Chlordane	5.00E-04	3.50E-01	5.20E-02	2.80E+01	4.41E-06	1.38E-09									1.40E-08	2.00E-10	3E-05	7E-11				
Heptachlor	5.00E-04	4.50E+00	1.10E-02	1.70E+01	2.76E-06	1.43E-10									1.45E-09	2.07E-11	3E-06	9E-11				
Metals																						
Barium	3.50E-02	NA	1.00E-04	NA	9.42E-02	1.60E-09									1.62E-08		5E-07					
Cobalt	3.00E-03	NA	4.00E-04	NA	1.57E-03	1.07E-10									1.08E-09		4E-07					
Total Hazard Quotient and Cancer Risk:																	**5E-03**	**5E-07**				

Assumptions for Future Recreational Visitor (Child)

CF =	0.001	l/cm3
BW =	15	kg
SA =	7,930	cm2
ET =	0.17	hours/day
EF =	7	days/year
ED =	1	years
AT (Nc) =	365	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-4E (Groundwater)
CALCULATION OF INTAKE AND RISK FROM DERMAL CONTACT TO GROUNDWATER (WHILE SHOWERING)
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Equation for Absorbed Dose per Event (DA)

For organics $DA = 2Kp \times CW \sqrt{\frac{6 \times \tau \times ET}{\pi}} \times CF$

For inorganics $DA = Kp \times CW \times ET \times CF$

Equation for Hazard Quotient = Chronic Daily Intake (Ne)/Reference Dose

Equation for Contribution to Cancer Risk = Chronic Daily Intake (Car) x Slope Fact

Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Variables (Assumptions for Each Receptor are Listed at the Bottom)
DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time
Kp = Permeability Coefficient
CW = EPC Cderm
ET = Exposure Time
τ = Lag Time
CF = Conversion Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient Kp (cm/hr)	Tau (hours)	EPC Groundwater (mg/liter)	Absorbed Dose/Event (mg-cm²/event)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics															
1,1,1-Trichloroethane	2.80E-01	NA	1.70E-02	5.70E-01	1.13E-03	1.65E-08	3.03E-06		1E-05		5.60E-06		2E-05		
1,2-Dichloroethene (total)	9.00E-03	NA	1.00E-02	3.40E-01	1.79E-02	1.19E-07	2.18E-05		2E-03		4.03E-05		4E-03		
Acetone	1.00E-01	NA	7.40E-02	2.00E-01	3.99E-03	1.50E-07	2.76E-05		3E-04		5.10E-05		5E-04		
Toluene	2.00E-01	NA	4.50E-02	3.20E-01	1.16E-03	3.37E-08	6.16E-06		3E-05		1.14E-05		6E-05		
Trichloroethene	NA	1.22E-02	1.60E-02	5.50E-01	2.41E-03	3.26E-08		5.97E-07		7E-09		3.16E-07		4E-09	1E-08
Semivolatile Organics															
1,4-Dichlorobenzene	NA	2.40E-02	6.2E-02	6.9E-01	9.30E-05	5.46E-09		1.00E-07		2E-09		5.29E-08		1E-09	4E-09
Benzo(a)pyrene	NA	1.46E+01	1.2E+00	2.9E+00	9.70E-05	2.26E-07		4.14E-06		6E-05		2.19E-06		3E-05	9E-05
Benzo(b)fluoranthene	NA	7.30E-01	1.20E+00	3.00E+00	7.60E-05	1.80E-07		3.30E-06		2E-06		1.74E-06		1E-06	4E-06
Benzo(ghi)perylene	NA	NA	1.65E+00	4.24E+00	1.80E-04	6.96E-07									
Benzo(k)fluoranthene	NA	7.30E-02	1.11E+00	3.03E+00	9.10E-05	2.00E-07		3.66E-06		3E-07		1.93E-06		1E-07	4E-07
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	5.27E-03	2.11E+01	2.06E-04	5.68E-09	1.04E-06	1.04E-07	1E-04	3E-09	1.93E-06	5.50E-08	2E-04	2E-09	4E-09
Butylbenzylphthalate	2.00E-01	NA	6.06E-02	7.04E+00	6.40E-05	1.17E-08	2.15E-06		1E-05		3.97E-06		2E-05		
Di-n-butylphthalate	9.00E-02	NA	3.61E-01	4.36E+00	2.10E-04	1.81E-07	3.31E-05		4E-04		6.12E-05		7E-04		
Di-n-octylphthalate	2.00E-02	NA	4.42E+00	2.12E+01	4.10E-04	9.57E-06	1.74E-03		9E-02		3.23E-03		2E-01		
Diethyl phthalate	8.00E-01	NA	4.80E-03	2.00E+00	1.03E-03	7.97E-09	1.46E-06		2E-06		2.70E-06		3E-06		
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.90E+00	4.20E+00	1.00E-04	4.44E-07		8.13E-06		6E-06		4.30E-06		3E-06	9E-06
Phenol	5.40E-01	NA	5.50E-03	3.30E-01	4.30E-04	1.55E-09	2.84E-07		5E-07		5.25E-07		1E-06		
Pyrene	3.00E-02	NA	3.24E-01	1.50E+00	8.00E-05	3.62E-08	6.64E-06		2E-04		1.23E-05		4E-04		
Pesticides/PCBs															
Beta-BHC	NA	1.80E+00	1.88E-02	5.20E+00	3.30E-06	1.61E-10		2.96E-09		5E-09		1.56E-09		3E-09	8E-09
Gamma-Chlordane	5.00E-04	3.50E-01	5.20E-02	2.80E+01	4.41E-06	1.38E-09	2.53E-07	2.53E-08	5E-04	9E-09	4.69E-07	1.34E-08	9E-04	5E-09	1E-08
Heptachlor	5.00E-04	4.50E+00	1.10E-02	1.70E+01	2.76E-06	1.43E-10	2.61E-08	2.61E-09	5E-05	1E-08	4.83E-08	1.38E-09	1E-04	6E-09	2E-08
Metals															
Barium	3.50E-02	NA	1.00E-04	NA	9.42E-02	1.60E-09	2.97E-07		8E-06		5.43E-07		2E-05		
Cobalt	3.00E-03	NA	4.00E-04	NA	1.57E-03	1.07E-10	1.96E-08		7E-06		3.62E-08		1E-05		
Total Hazard Quotient and Cancer Risk:									**9E-02**				**2E-01**		**1E-04**

Assumptions for Future Resident (Adult)

CF =	0.001	l/cm3
BW =	70	kg
SA =	20,000	cm2
ET =	0.17	hours/day
EF =	234	days/year
ED =	7	years
AT (Nc) =	2555	days
AT (Car) =	25,550	days

Assumptions for Future Resident (Child)

CF =	0.001	l/cm3
BW =	15	kg
SA =	7,930	cm2
ET =	0.17	hours/day
EF =	234	days/year
ED =	2	years
AT (Nc) =	730	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data
NA= Information not available

TABLE L-4F (Surface Water)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SURFACE WATER
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For organics DA = Kp x CW x [ET/(1+B) + 2Tau(1+3B)/(1+B)] x CF

For inorgani DA = Kp x CW x ET x CF

Kp = Permeability Coefficient
CW = EPC Surface Water
ET = Exposure Time
Tau = Lag Time
CF = Conversion Factor
B = Bunge Model Value

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient Kp (cm/hr)	Tau (hours)	B (unitless)	EPC Surface Water (mg/L)	Absorbed Dose/Event (mg-cm²/event)
Volatile Organics							
Acetone	1.00E-01	NA	5.69E-04	2.00E-01	5.80E-05	3.11E-03	2.48E-09
Toluene	2.00E-01	NA	4.50E-02	3.20E-01	5.40E-02	4.00E-04	2.98E-08
Trichloroethene	NA	1.22E-02	1.60E-02	5.50E-01	2.60E-02	8.00E-04	2.62E-08
Semivolatile Organics							
Benzo(a)anthracene	NA	7.30E-01	8.10E-01	2.20E+00	4.60E+01	7.30E-04	2.42E-06
Benzo(a)pyrene	NA	1.46E+01	1.20E+00	2.90E+00	1.30E+02	7.74E-04	4.37E-06
Benzo(k)fluoranthene	NA	7.30E-02	1.10E+00	3.03E+00	1.15E+02	7.78E-04	4.12E-06
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	5.27E-03	2.11E+01	9.50E-01	1.00E-03	6.69E-08
Butylbenzylphthalate	2.00E-01	NA	6.06E-02	7.04E+00	6.31E+00	2.00E-04	8.89E-08
Chrysene	NA	7.30E-03	8.10E-01	2.20E+00	4.60E+01	7.73E-04	2.57E-06
Di-n-butylphthalate	9.00E-02	NA	3.61E-01	4.36E+00	3.98E+01	8.39E-04	1.75E-06
Diethyl phthalate	8.00E-01	NA	4.80E-03	2.00E+00	3.00E-02	4.60E-04	8.63E-09
Pentachlorophenol	3.00E-02	1.20E-01	6.50E-01	3.70E+00	7.20E+01	1.96E-03	6.77E-06
Pyrene	3.00E-02	NA	3.20E-01	1.50E+00	7.59E+00	7.78E-04	8.43E-07
Pesticides/PCBs							
4,4'-DDD	NA	1.20E+00	2.80E-01	7.80E+00	6.30E+01	5.41E-06	1.17E-08
4,4'-DDT	1.00E-04	1.70E+00	4.30E-01	1.30E+01	2.30E+02	9.46E-06	4.05E-08
Aldrin	1.50E-05	3.40E+01	1.60E-03	1.50E+01	1.00E-01	3.72E-06	6.37E-11
Alpha-BHC	NA	6.30E+00	1.88E-02	5.20E+00	7.94E-01	7.76E-06	9.21E-10
Alpha-Chlordane	5.00E-04	3.50E-01	1.37E-03	2.76E+01	2.09E-01	3.25E-06	6.48E-11
Aroclor-1242	NA	NA	8.87E-01	3.42E+00	1.00E+02	9.94E-05	4.51E-07
Beta-BHC	NA	1.80E+00	1.88E-02	5.20E+00	7.94E-01	4.38E-06	5.20E-10
Delta-BHC	NA	NA	2.61E-02	5.20E+00	1.26E+00	4.14E-06	6.82E-10
Endrin aldehyde	NA	NA	6.09E-03	1.90E+01	1.00E+00	8.51E-06	6.23E-10
Endrin ketone	NA	NA	6.09E-03	1.90E+01	1.00E+00	8.54E-06	6.25E-10
gamma-BHC (Lindane)	3.00E-04	1.80E+00	1.40E-02	5.20E+00	5.20E-02	5.70E-06	5.03E-10
Heptachlor	5.00E-04	4.50E+00	1.10E-02	1.70E+01	1.90E+00	4.35E-06	5.45E-10
Heptachlor epoxide	1.30E-05	9.10E+00	6.64E-04	2.07E+01	5.01E-02	3.23E-06	2.70E-11
Hexachlorobenzene	8.00E-04	1.60E+00	2.10E-01	4.80E+00	2.00E+01	5.98E-06	7.60E-09
Metals							
Cadmium	5.00E-05	NA		NA		2.92E-04	
Mercury	3.00E-06	NA		NA		1.10E-04	
Zinc	7.50E-02	NA		NA		2.81E-02	

Analyte	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Future Construction Worker Intake (mg/kg-day) (Car)	Future Construction Worker Hazard Quotient	Future Construction Worker Cancer Risk
Volatile Organics																
Acetone					1.08E-08		1E-07		6.74E-09		7E-08					
Toluene					1.29E-07		6E-07		8.10E-08		4E-07					
Trichloroethene						1.63E-09		2E-11		1.02E-09		1E-11				
Semivolatile Organics																
Benzo(a)anthracene	Dermal Contact to Surface Water Not Applicable for Current Site Worker					1.50E-07		1E-07		9.42E-08		7E-08	Dermal Contact to Surface Water Not Applicable for Construction Worker			
Benzo(a)pyrene						2.71E-07		4E-06		1.70E-07		2E-06				
Benzo(k)fluoranthene						2.55E-07		2E-08		1.60E-07		1E-08				
Bis(2-Ethylhexyl)phthalate					2.90E-07	4.15E-09	3E-05	1E-10	1.82E-07	2.60E-09	2E-05	7E-11				
Butylbenzylphthalate					3.86E-07		2E-06		2.42E-07		1E-06					
Chrysene						1.59E-07		1E-09		9.98E-08		7E-10				
Di-n-butylphthalate					7.59E-06		8E-05		4.76E-06		5E-05					
Diethyl phthalate					3.75E-08		5E-08		2.35E-08		3E-08					
Pentachlorophenol					2.94E-05	4.20E-07	1E-03	5E-08	1.84E-05	2.63E-07	6E-04	3E-08				
Pyrene					3.66E-06		1E-04		2.29E-06		8E-05					
Pesticides/PCBs																
4,4'-DDD						7.25E-10		9E-10		4.55E-10		5E-10				
4,4'-DDT					1.76E-07	2.51E-09	2E-03	4E-09	1.10E-07	1.58E-09	1E-03	3E-09				
Aldrin					2.77E-10	3.95E-12	2E-05	1E-10	1.73E-10	2.48E-12	1E-05	8E-11				
Alpha-BHC						5.71E-11		4E-10		3.58E-11		2E-10				
Alpha-Chlordane					2.81E-10	4.02E-12	6E-07	1E-12	1.76E-10	2.52E-12	[illegible]-07	9E-13				
Aroclor-1242																
Beta-BHC						3.22E-11		6E-11		2.02E-11		4E-11				
Delta-BHC																
Endrin aldehyde																
Endrin ketone																
gamma-BHC (Lindane)					2.18E-09	3.12E-11	7E-06	6E-11	1.37E-09	1.96E-11	5E-06	4E-11				
Heptachlor					2.37E-09	3.38E-11	5E-06	2E-10	1.48E-09	2.12E-11	3E-06	1E-10				
Heptachlor epoxide					1.17E-10	1.67E-12	9E-06	2E-11	7.34E-11	1.05E-12	6E-06	1E-11				
Hexachlorobenzene					3.30E-08	4.71E-10	4E-05	8E-10	2.07E-08	2.96E-10	3E-05	5E-10				
Metals																
Cadmium																
Mercury																
Zinc																
Total Hazard Quotient and Cancer Risk:							3E-03	4E-06			2E-03	3E-06				

Assumptions for Future Outdoor Park Worker

CF =	1E-03	liter/cm3
BW =	70	kg
SA =	1,980	cm2
ET =	1	hour/day
EF =	8	days/year
ED =	7	years
AT (Nc) =	365	days
AT (Car) =	25,550	days

Assumptions for Future Recreational Visitor (Child)

CF =	1E-03	liter/cm3
BW =	15	kg
SA =	3725	cm2
ET =	1	hour/day
EF =	4	days/year
ED =	1	years
AT (Nc) =	365	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-4F (Surface Water)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SURFACE WATER
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For organics: DA = Kp x CW x [ET/(1+B) + 2Tau(1+3B)/(1+B)] x CF

For inorganics: DA = Kp x CW x ET x CF

Kp = Permeability Coefficient
CW = EPC Surface Water
ET = Exposure Time
Tau = Lag Time
CF = Conversion Factor
B = Bunge Model Value

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient Kp (cm/hr)	Tau (hours)	B (unitless)	EPC Surface Water (mg/L)	Absorbed Dose/Event (mg-cm²/event)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics																
Acetone	1.00E-01	NA	5.69E-04	2.00E-01	5.80E-05	3.11E-03	2.48E-09	9.25E-09		9E-08		1.08E-08		1E-07		
Toluene	2.00E-01	NA	4.50E-02	3.20E-01	5.40E-02	4.00E-04	2.98E-08	1.11E-07		6E-07		1.30E-07		6E-07		
Trichloroethene	NA	1.22E-02	1.60E-02	5.50E-01	2.60E-02	8.00E-04	2.62E-08		9.80E-09		1E-10		3.27E-09		4E-11	2E-10
Semivolatile Organics						7.30E-04										
Benzo(a)anthracene	NA	7.30E-01	8.10E-01	2.20E+00	4.60E+01	7.74E-04	2.42E-06		9.05E-07		7E-07		3.02E-07		2E-07	9E-07
Benzo(a)pyrene	NA	1.46E+01	1.20E+00	2.90E+00	1.30E+02	7.78E-04	4.37E-06		1.63E-06		2E-05		5.44E-07		8E-06	3E-05
Benzo(k)fluoranthene	NA	7.30E-02	1.10E+00	3.03E+00	1.15E+02	1.00E-03	4.12E-06		1.54E-06		1E-07		5.12E-07		4E-08	1E-07
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	5.27E-03	2.11E+01	9.50E-01	2.00E-04	6.69E-08	2.50E-07	2.50E-08	2E-05	7E-10	2.91E-07	8.32E-09	3E-05	2E-10	9E-10
Butylbenzylphthalate	2.00E-01	NA	6.06E-02	7.04E+00	6.31E+00	7.73E-04	8.89E-08	3.32E-07		2E-06		3.87E-07		2E-06		
Chrysene	NA	7.30E-03	8.10E-01	2.20E+00	4.60E+01	8.39E-04	2.57E-06		9.58E-07		7E-09		3.19E-07		2E-09	9E-09
Di-n-butylphthalate	9.00E-02	NA	3.61E-01	4.36E+00	3.98E+01	4.60E-04	1.75E-06	6.53E-06		7E-05		7.62E-06		8E-05		
Diethyl phthalate	8.00E-01	NA	4.80E-03	2.00E+00	3.00E-02	1.96E-03	8.63E-09	3.22E-08		4E-08		3.76E-08		5E-08		
Pentachlorophenol	3.00E-02	1.20E-01	6.50E-01	3.70E+00	7.20E+01	7.78E-04	6.77E-06	2.53E-05	2.53E-06	8E-04	3E-07	2.95E-05	8.43E-07	1E-03	1E-07	4E-07
Pyrene	3.00E-02	NA	3.20E-01	1.50E+00	7.59E+00	ERR	8.43E-07	3.15E-06		1E-04		3.67E-06		1E-04		
Pesticides/PCBs						5.41E-06										
4,4'-DDD	NA	1.20E+00	2.80E-01	7.80E+00	6.30E+01	9.46E-06	1.17E-08		4.37E-09		5E-09		1.46E-09		2E-09	7E-09
4,4'-DDT	1.00E-04	1.70E+00	4.30E-01	1.30E+01	2.30E+02	3.72E-06	4.05E-08	1.51E-07	1.51E-08	2E-03	3E-08	1.77E-07	5.05E-09	2E-03	9E-09	3E-08
Aldrin	1.50E-05	3.40E+01	1.60E-03	1.50E+01	1.00E-01	7.76E-06	6.37E-11	2.38E-10	2.38E-11	2E-05	8E-10	2.78E-10	7.93E-12	2E-05	3E-10	1E-09
Alpha-BHC	NA	6.30E+00	1.88E-02	5.20E+00	7.94E-01	3.25E-06	9.21E-10		3.44E-10		2E-09		1.15E-10		7E-10	3E-09
Alpha-Chlordane	5.00E-04	3.50E-01	1.37E-03	2.76E+01	2.09E-01	9.94E-05	6.48E-11	2.42E-10	2.42E-11	5E-07	8E-12	2.82E-10	8.07E-12	6E-07	3E-12	1E-11
Aroclor-1242	NA	NA	8.87E-01	3.42E+00	1.00E+02	4.38E-06	4.51E-07									
Beta-BHC	NA	1.80E+00	1.88E-02	5.20E+00	7.94E-01	4.14E-06	5.20E-10		1.94E-10		3E-10		6.47E-11		1E-10	5E-10
Delta-BHC	NA	NA	2.61E-02	5.20E+00	1.26E+00	8.51E-06	6.82E-10									
Endrin aldehyde	NA	NA	6.09E-03	1.90E+01	1.00E+00	8.54E-06	6.23E-10									
Endrin ketone	NA	NA	6.09E-03	1.90E+01	1.00E+00	5.70E-06	6.25E-10									
gamma-BHC (Lindane)	3.00E-04	1.80E+00	1.40E-02	5.20E+00	5.20E-02	4.35E-06	5.03E-10	1.88E-09	1.88E-10	6E-06	3E-10	2.19E-09	6.26E-11	7E-06	1E-10	5E-10
Heptachlor	5.00E-04	4.50E+00	1.10E-02	1.70E+01	1.90E+00	3.23E-06	5.45E-10	2.04E-09	2.04E-10	4E-06	9E-10	2.38E-09	6.79E-11	5E-06	3E-10	1E-09
Heptachlor epoxide	1.30E-05	9.10E+00	6.64E-04	2.07E+01	5.01E-02	5.98E-06	2.70E-11	1.01E-10	1.01E-11	8E-06	9E-11	1.18E-10	3.36E-12	9E-06	3E-11	1E-10
Hexachlorobenzene	8.00E-04	1.60E+00	2.10E-01	4.80E+00	2.00E+01		7.60E-09	2.84E-08	2.84E-09	4E-05	5E-09	3.31E-08	9.46E-10	4E-05	2E-09	6E-09
Metals																
Cadmium	5.00E-05	NA		NA		2.92E-04										
Mercury	3.00E-06	NA		NA		1.10E-04										
Zinc	7.50E-02	NA		NA		2.81E-02										
Total Hazard Quotient and Cancer Risk:										3E-03				3E-03		3E-05

Assumptions for Future Resident (Adult)

CF =	1E-03	liter/cm3
BW =	70	kg
SA =	6,360	cm2
ET =	1	hour/day
EF =	15	days/year
ED =	7	years
AT (Nc) =	2,555	days
AT (Car) =	25,550	days

Assumptions for Future Resident (Child)

CF =	1E-03	liter/cm3
BW =	15	kg
SA =	1,590	cm2
ET =	1	hour/day
EF =	15	days/year
ED =	2	years
AT (Nc) =	730	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-4G (Downgradient Sediment)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SEDIMENT
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Sediment, from Sediment EPC
CF = Conversion Factor
SA = Surface Area Contact
AF = Adherence Factor
ABS = Absorption Factor
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Absorption Factor* (unitless)	EPC Sediment (mg/kg)	Future off-Site Wader (Child) Absorbed Dose (mg/kg-day) (Nc)	Absorbed Dose (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk
Volatile Organics								
Acetone	1.00E-01	NA	NA	1.90E-01				
Semivolatile Organics								
2-Methylnaphthalene	4.00E-02	NA	NA	3.30E-02				
4-Methylphenol	5.00E-03	NA	NA	1.40E-02				
Acenaphthene	6.00E-02	NA	NA	1.90E-02				
Acenaphthylene	NA	NA	NA	5.40E-02				
Anthracene	3.00E-01	NA	NA	9.20E-02				
Benzo(a)anthracene	NA	7.30E-01	NA	1.25E+00				
Benzo(a)pyrene	NA	1.46E+01	NA	9.77E-01				
Benzo(b)fluoranthene	NA	7.30E-01	NA	1.20E+00				
Benzo(ghi)perylene	NA	NA	NA	2.12E-01				
Benzo(k)fluoranthene	NA	7.30E-02	NA	4.90E-02				
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	NA	7.24E-02				
Carbazole	NA	2.00E-02	NA	5.01E-02				
Chrysene	NA	7.30E-03	NA	1.40E+00				
Di-n-octylphthalate	2.00E-02	NA	NA	1.49E-01				
Dibenz(a,h)anthracene	NA	7.30E+00	NA	1.25E-01				
Dibenzofuran	NA	NA	NA	2.40E-02				
Fluoranthene	4.00E-02	NA	NA	2.60E+00				
Fluorene	4.00E-02	NA	NA	5.88E-02				
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	NA	2.23E-01				
N-Nitrosodiphenylamine	NA	4.90E-03	NA	9.23E-02				
Naphthalene	2.00E-02	NA	NA	1.60E-02				
Phenanthrene	NA	NA	NA	8.40E-01				
Pyrene	3.00E-02	NA	NA	2.00E+00				
Pesticides/PCBs								
4,4'-DDD	NA	1.20E+00	NA	3.36E-03				
4,4'-DDE	NA	1.70E+00	NA	3.38E-03				
Total Hazard Quotient and Cancer Risk:								

Assumptions for Future Recreational Visitor (Child)

CF =	1E-06	kg/mg
SA =	3725	cm2
AF =	0.2	mg/cm2
EF =	7	days/year
ED =	1	years
BW =	15	kg
AT (Nc) =	365	days
AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* USEPA Region 2 recommends quantifying dermal exposure only for cadmium, arsenic, PCBs, dioxins/furans and pentachlorophenol, since absorption factors are not available for [illegible]hemicals of concern.

TABLE L-4H (Downgradient Surface Water)
CALCULATION OF ABSORBED DOSE AND RISK FROM DERMAL CONTACT TO SURFACE WATER
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{DA \times SA \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

DA = Absorbed Dose per Event
SA = Surface Area Contact
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Absorbed Dose per Event (DA):

For organics with ET < t*: $DA = 2Kp \times CW \sqrt{\frac{6 \times \tau \times ET}{\pi}} \times CF$

For organics with ET > t*: DA = Kp x CW x [ET/(1+B) + 2Tau(1+3B)/(1+B)] x C

For inorganics: DA = Kp x CW x ET x CF

Kp = Permeability Coefficient
CW = EPC Surface Water
ET = Exposure Time
Tau = Lag Ti
CF = Conversion Factor
B = Bunge Model Value

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Dermal RfD (mg/kg-day)	Carc. Slope Dermal (mg/kg-day)-1	Permeability Coefficient Kp (cm/hr)	Tau (hours)	B (unitless)	EPC Surface Water (mg/L)	Absorbed Dose/Event (mg-cm²/event)	Future off-Site Wader (Child) Intake (mg/kg-day) (Nc)	Intake (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk
Semivolatile Organics											
Bis(2-Ethylhexyl)phthalate	1.00E-02	2.80E-02	5.27E-03	2.11E+01		1.40E-04	9.36E-09	4.46E-08	6.37E-10	4E-06	2E-11
Butylbenzylphthalate	2.00E-01	NA	6.06E-02	7.04E+00		1.20E-04	5.33E-08	2.54E-07		1E-06	
Diethyl phthalate	8.00E-01	NA	5.65E-02	9.16E-01		7.20E-05	1.08E-08	5.13E-08		6E-08	
Hexachlorobenzene	8.00E-04	1.60E+00	8.10E-01	2.20E+00		6.88E-06	2.28E-08	1.09E-07	1.55E-09	1E-04	2E-09
Metals											
Barium	3.50E-02	NA	1.00E-03	NA		5.02E-02	5.02E-08	2.39E-07		7E-06	
Beryllium	2.00E-05	NA	1.00E-03	NA		1.54E-04	1.54E-10	7.33E-10		4E-05	
Calcium	NA	NA	1.00E-03	NA		9.50E+01	9.50E-05				
Magnesium	NA	NA	1.00E-03	NA		1.46E+01	1.46E-05				
Sodium	NA	NA	1.00E-03	NA		2.53E+01	2.53E-05				
Total Hazard Quotient and Cancer Risk:										2E-04	3E-09

Assumptions for Future Recreational Visitor (Child)

CF =	1E-03	liter/cm3
BW =	15	kg
SA =	3725	cm2
ET =	1	hour/day
EF =	7	days/year
ED =	1	years
AT (Nc) =	365	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-5A (Disposal Pits A/B)
AMBIENT AIR EXPOSURE POINT CONCENTRATIONS - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Air EPC from Surface Soil (mg/m³) = CS_{surf} x PM_{10} x CF

Variables:
CS_{surf} = Chemical Concentration in Surface Soil, from EPC data (mg/kg)
PM_{10} = Average Measured PM_{10} Concentration = 17 ug/m³
CF = Conversion Factor = 1E-9 kg/ug

Equation for Air EPC from Total Soils (mg/m³) = CS_{tot} x PM_{10} x CF

Variables:
CS_{tot} = Chemical Concentration in Total Soils, from EPC data (mg/kg)
PM_{10} = PM_{10} Concentration Calculated for Construction Worker= 138 ug/m³
CF = Conversion Factor = 1E-9 kg/ug

Analyte	EPC Data for Surface Soil (mg/kg)	EPC Data for Total Soils (mg/kg)	Calculated Air EPC Surface Soil (mg/m³)	Calculated Air EPC Total Soils (mg/m³)
Volatile Organics				
Acetone	1.21E-02	1.07E-02	2.06E-10	1.48E-09
Benzene	ND	6.00E-03		8.28E-10
Ethyl benzene	ND	9.00E-03		1.24E-09
Methyl butyl ketone	1.00E-03	1.00E-03	1.70E-11	1.38E-10
Methylene chloride	1.00E-03	3.00E-03	ND	4.14E-10
Styrene	ND	7.31E-03	ND	1.01E-09
Toluene	4.00E-03	7.16E-03	6.80E-11	9.88E-10
Total Xylenes	ND	1.44E-02		1.99E-09
Trichloroethene	ND	7.32E-03		1.01E-09
Semivolatile Organics				
2,4-Dimethylphenol	ND	2.50E-02		3.45E-09
2-Methylnaphthalene	ND	5.00E-02		6.90E-09
4-Methylphenol	ND	7.78E-02		1.07E-08
Acenaphthene	ND	2.30E-02		3.17E-09
Acenaphthylene	ND	3.30E-02		4.55E-09
Anthracene	ND	8.06E-02		1.11E-08
Benzo(a)anthracene	2.70E-02	8.48E-02	4.59E-10	1.17E-08
Benzo(a)pyrene	2.70E-02	8.04E-02	4.59E-10	1.11E-08
Benzo(b)fluoranthene	3.60E-02	8.20E-02	6.12E-10	1.13E-08
Benzo(ghi)perylene	3.10E-02	8.83E-02	5.27E-10	1.22E-08
Benzo(k)fluoranthene	2.60E-02	7.79E-02	4.42E-10	1.08E-08
Bis(2-Ethylhexyl)phthalate	7.32E-02	1.66E-01	1.24E-09	2.29E-08
Butylbenzylphthalate	2.29E-02	2.29E-02	3.89E-10	3.16E-09
Carbazole	2.75E-02	2.75E-02	4.68E-10	3.80E-09
Chrysene	5.10E-02	8.98E-02	8.67E-10	1.24E-08
Di-n-butylphthalate	5.35E-02	1.10E-01	9.10E-10	1.52E-08
Di-n-octylphthalate	2.34E-02	5.40E-02	3.98E-10	7.45E-09
Dibenz(a,h)anthracene	2.75E-02	5.26E-02	4.68E-10	7.26E-09
Dibenzofuran	2.23E-02	2.23E-02	3.79E-10	3.08E-09
Fluoranthene	2.44E-02	9.57E-02	4.15E-10	1.32E-08
Fluorene	2.22E-02	4.98E-02	3.77E-10	6.87E-09
Indeno(1,2,3-cd)pyrene	2.85E-02	8.60E-02	4.85E-10	1.19E-08
Naphthalene	ND	9.76E-02		1.35E-08
Phenanthrene	2.38E-02	9.61E-02	4.05E-10	1.33E-08
Phenol	ND	7.71E-02		1.06E-08
Pyrene	2.20E-02	1.02E-01	3.74E-10	1.41E-08
Pesticides/PCBs				
4,4'-DDE	4.08E-03	3.86E-03	6.94E-11	5.33E-10
4,4'-DDT	6.09E-03	2.91E-03	1.04E-10	4.02E-10
Aldrin	ND	7.90E-04		1.09E-10
Alpha-BHC	ND	1.59E-03		2.19E-10
Alpha-Chlordane	ND	1.26E-03		1.74E-10
Aroclor-1254	1.90E-01	2.09E-01	3.23E-09	2.88E-08
Aroclor-1260	ND	2.50E-02	ND	3.45E-09
Beta-BHC	ND	1.18E-03		1.63E-10
Dieldrin	4.13E-03	3.82E-03	7.02E-11	5.27E-10
Endosulfan I	1.17E-03	1.16E-03	1.99E-11	1.60E-10
Endosulfan II	2.14E-03	2.72E-03	ND	3.75E-10
Endrin	2.43E-03	3.15E-03	4.13E-11	4.35E-10
Endrin aldehyde	2.75E-03	2.37E-03	4.68E-11	3.27E-10
Gamma-Chlordane	3.76E-03	3.19E-03	6.39E-11	4.40E-10
Heptachlor	ND	1.45E-03		2.00E-10
Heptachlor epoxide	1.85E-03	1.64E-03	3.15E-11	2.26E-10
Metals				
Copper	2.25E+01	3.33E+01	3.83E-07	4.60E-06
Cyanide	6.25E-01	4.31E-01	1.06E-08	5.95E-08
Selenium	7.39E-01	5.98E-01	1.26E-08	8.25E-08
Thallium	1.07E+00	8.48E-01	1.82E-08	1.17E-07

ND = Compound was not detected.

TABLE L-5B (Disposal Pit C)
AMBIENT AIR EXPOSURE POINT CONCENTRATIONS - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Air EPC from Surface Soil (mg/m³) = CS_{surf} x PM_{10} x CF	Equation for Air EPC from Total Soils (mg/m³) = CS_{tot} x PM_{10} x CF
Variables:	Variables:
CS_{surf} = Chemical Concentration in Surface Soil, from EPC data (mg/kg)	CS_{tot} = Chemical Concentration in Total Soils, from EPC data (mg/kg)
PM_{10} = Average Measured PM_{10} Concentration = 17 ug/m³	PM_{10} = PM_{10} Concentration Calculated for Construction Worker= 143 ug/m³
CF = Conversion Factor = 1E-9 kg/ug	CF = Conversion Factor = 1E-9 kg/ug

Analyte	EPC Data for Surface Soil (mg/kg)	EPC Data for Total Soils (mg/kg)	Calculated Air EPC Surface Soil (mg/m³)	Calculated Air EPC Total Soils (mg/m³)
Volatile Organics				
Acetone	9.95E-03	8.64E-03	1.69E-10	1.24E-09
Chlorobenzene	ND	5.00E-03		7.15E-10
Methylene chloride	ND	7.84E-03		1.12E-09
Tetrachloroethene	ND	2.00E-03		2.86E-10
Toluene	ND	7.37E-03		1.05E-09
Total Xylenes	ND	6.32E-03		9.04E-10
Trichloroethene	ND	2.00E-03		2.86E-10
Semivolatile Organics				
2-Methylnaphthalene	ND	2.20E-02		3.15E-09
Acenaphthene	ND	4.40E-02		6.29E-09
Anthracene	4.60E-03	6.30E-02	7.82E-11	9.01E-09
Benzo(a)anthracene	2.60E-02	1.08E-01	4.42E-10	1.54E-08
Benzo(a)pyrene	2.00E-02	8.61E-02	3.40E-10	1.23E-08
Benzo(b)fluoranthene	2.80E-02	1.07E-01	4.76E-10	1.53E-08
Benzo(ghi)perylene	2.65E-02	8.01E-02	4.51E-10	1.15E-08
Benzo(k)fluoranthene	2.75E-02	1.05E-01	4.68E-10	1.50E-08
Bis(2-Ethylhexyl)phthalate	5.80E-03	1.60E-02	9.86E-11	2.29E-09
Butylbenzylphthalate	ND	3.00E-02		4.29E-09
Carbazole	2.37E-02	4.00E-02	4.03E-10	5.72E-09
Chrysene	2.23E-02	1.13E-01	3.79E-10	1.62E-08
Di-n-butylphthalate	4.50E-03	5.20E-02	7.65E-11	7.44E-09
Di-n-octylphthalate	7.30E-03	2.00E-02	1.24E-10	2.86E-09
Dibenz(a,h)anthracene	2.33E-02	8.68E-02	3.96E-10	1.24E-08
Fluoranthene	3.61E-02	1.06E-01	6.14E-10	1.52E-08
Fluorene	ND	3.50E-02		5.01E-09
Indeno(1,2,3-cd)pyrene	2.65E-02	9.27E-02	4.51E-10	1.33E-08
N-Nitrosodiphenylamine	ND	1.49E-01		2.13E-08
Naphthalene	ND	1.30E-02		1.86E-09
Phenanthrene	2.10E-02	1.06E-01	3.57E-10	1.52E-08
Pyrene	3.60E-02	1.03E-01	6.12E-10	1.47E-08
Dibenzofuran	ND	4.10E-03		5.86E-10
Pesticides/PCBs				
4,4'-DDD	4.43E-03	2.56E-03	7.53E-11	3.66E-10
4,4'-DDE	ND	2.26E-03		3.23E-10
4,4'-DDT	2.13E-03	2.33E-03	3.62E-11	3.33E-10
Alpha-BHC	ND	1.16E-03		1.66E-10
Alpha-Chlordane	ND	1.07E-03		1.53E-10
Aroclor-1254	ND	2.03E-02		2.90E-09
Aroclor-1260	ND	2.03E-02	ND	2.90E-09
Beta-BHC	ND	1.06E-03		1.52E-10
Gamma-Chlordane	ND	1.07E-03		1.53E-10
Heptachlor	ND	1.21E-03		1.73E-10
Heptachlor epoxide	ND	1.07E-03	ND	1.53E-10
Metals				
Calcium	7.59E+01	9.59E+04	1.29E-06	1.37E-02
Selenium	7.54E-04	7.18E-01	1.28E-11	1.03E-07
Thallium	1.67E-03	8.77E-01	2.84E-11	1.25E-07
Cyanide	ND	3.53E-01		5.05E-08

ND = Compound was not detected.

TABLE L-5C (Former Dry Waste Disposal Pit)
AMBIENT AIR EXPOSURE POINT CONCENTRATIONS - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Air EPC from Surface Soil (mg/m³) = $CS_{surf} \times PM_{10} \times CF$	Equation for Air EPC from Total Soils (mg/m³) = $CS_{tot} \times PM_{10} \times CF$
Variables:	Variables:
CS_{surf} = Chemical Concentration in Surface Soil, from EPC data (mg/kg)	CS_{tot} = Chemical Concentration in Total Soils, from EPC data (mg/kg)
PM_{10} = Average Measured PM_{10} Concentration = 17 ug/m³	PM_{10} = PM_{10} Concentration Calculated for Construction Worker= 143 ug/m³
CF = Conversion Factor = 1E-9 kg/ug	CF = Conversion Factor = 1E-9 kg/ug

Analyte	EPC Data for Surface Soil (mg/kg)	EPC Data for Total Soils (mg/kg)	Calculated Air EPC Surface Soil (mg/m³)	Calculated Air EPC Total Soils (mg/m³)
Volatile Organics				
Acetone	6.23E-03	1.10E-02	1.06E-10	1.57E-09
Benzene	ND	2.00E-03	ND	2.86E-10
Carbon disulfide	ND	3.00E-03	ND	4.29E-10
Methyl ethyl ketone	ND	3.00E-03	ND	4.29E-10
Methylene chloride	ND	2.00E-03	ND	2.86E-10
Toluene	8.02E-03	6.18E-03	1.36E-10	8.84E-10
Semivolatile Organics				
1,2,4 -Trichlorobenzene	2.35E-02	2.35E-02	4.00E-10	3.36E-09
2-Methylnaphthalene	5.50E-03	5.50E-03	9.35E-11	7.87E-10
Benzo(a)anthracene	2.60E-02	2.60E-02	4.42E-10	3.72E-09
Benzo(a)pyrene	2.00E-02	2.00E-02	3.40E-10	2.86E-09
Benzo(b)fluoranthene	3.40E-02	3.40E-02	5.78E-10	4.86E-09
Benzo(ghi)perylene	2.35E-02	2.35E-02	4.00E-10	3.36E-09
Benzo(k)fluoranthene	2.00E-02	2.00E-02	3.40E-10	2.86E-09
Bis(2-Ethylhexyl)phthalate	3.60E-02	7.02E-02	6.12E-10	1.00E-08
Butylbenzylphthalate	5.90E-03	7.20E-03	1.00E-10	1.03E-09
Chrysene	3.20E-02	3.20E-02	5.44E-10	4.58E-09
Di-n-butylphthalate	2.01E-02	1.19E-01	3.42E-10	1.70E-08
Di-n-octylphthalate	1.50E-02	3.40E-02	2.55E-10	4.86E-09
Diethyl phthalate	1.10E-02	1.10E-02	1.87E-10	1.57E-09
Fluoranthene	5.55E-02	6.40E-02	9.44E-10	9.15E-09
Indeno(1,2,3-cd)pyrene	6.15E-03	6.10E-03	1.05E-10	8.72E-10
Naphthalene	5.40E-03	5.40E-03	9.18E-11	7.72E-10
Phenanthrene	3.40E-02	3.40E-02	5.78E-10	4.86E-09
Pyrene	3.07E-02	5.10E-02	5.22E-10	7.29E-09
Pesticides/PCBs				
4,4'-DDE	2.00E-03	1.92E-03	3.40E-11	2.75E-10
4,4'-DDT	2.54E-03	1.98E-03	4.32E-11	2.83E-10
Aroclor-1242	1.70E-02	1.70E-02	2.89E-10	2.43E-09
Aroclor-1254	2.08E-02	1.93E-02	3.54E-10	2.76E-09
Aroclor-1260	2.13E-02	1.93E-02	3.62E-10	2.76E-09
Endrin aldehyde	2.06E-03	1.93E-03	3.50E-11	2.76E-10
Metals				
Calcium	8.04E+04	1.11E+05	1.37E-03	1.59E-02
Copper	2.33E+01	2.31E+01	3.96E-07	3.30E-06
Magnesium	1.37E+04	1.52E+04	2.33E-04	2.17E-03
Selenium	7.56E-01	6.18E-01	1.29E-08	8.84E-08
Thallium	1.16E+00	8.40E-01	1.97E-08	1.20E-07

ND = Compound was not detected.

TABLE L-6A (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	EPC from Total Soils	Current Site Worker				Future Outdoor Park Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	1.00E-01	NA	1.21E-02	1.07E-02	9.47E-10		9E-09		8.29E-09		8E-08	
Benzene	3.00E-03	2.90E-02	ND	6.00E-03								
Ethyl benzene	1.00E-01	NA	ND	9.00E-03								
Methyl butyl ketone	NA	NA	1.00E-03	1.00E-03								
Methylene chloride	6.00E-02	7.50E-03	1.00E-03	3.00E-03	7.83E-11	2.80E-11	1E-09	2E-13	6.85E-10	2.45E-10	1E-08	2E-12
Styrene	2.00E-01	NA	ND	7.31E-03								
Toluene	2.00E-01	NA	4.00E-03	7.16E-03	3.13E-10		2E-09		2.74E-09		1E-08	
Total Xylenes	2.00E+00	NA	ND	1.44E-02								
Trichloroethene	NA	1.10E-02	ND	7.32E-03								
Semivolatile Organics												
2,4-Dimethylphenol	2.00E-02	NA	ND	2.50E-02								
2-Methylnaphthalene	4.00E-02	NA	ND	5.00E-02								
4-Methylphenol	5.00E-03	NA	ND	7.78E-02								
Acenaphthene	6.00E-02	NA	ND	2.30E-02								
Acenaphthylene	NA	NA	ND	3.30E-02								
Anthracene	3.00E-01	NA	ND	8.06E-02								
Benzo(a)anthracene	NA	7.30E-01	2.70E-02	8.48E-02		7.55E-10		6E-10		6.60E-09		5E-09
Benzo(a)pyrene	NA	7.30E+00	2.70E-02	8.04E-02		7.55E-10		6E-09		6.60E-09		5E-08
Benzo(b)fluoranthene	NA	7.30E-01	3.60E-02	8.20E-02		1.01E-09		7E-10		8.81E-09		6E-09
Benzo(ghi)perylene	NA	NA	3.10E-02	8.83E-02								
Benzo(k)fluoranthene	NA	7.30E-02	2.60E-02	7.79E-02		7.27E-10		5E-11		6.36E-09		5E-10
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	7.32E-02	1.66E-01	5.73E-09	2.05E-09	3E-07	3E-11	5.01E-08	1.79E-08	3E-06	3E-10
Butylbenzylphthalate	2.00E-01	NA	2.29E-02	2.29E-02	1.79E-09		9E-09		1.57E-08		8E-08	
Carbazole	NA	2.00E-02	2.75E-02	2.75E-02		7.69E-10		2E-11		6.73E-09		1E-10
Chrysene	NA	7.30E-03	5.10E-02	8.98E-02		1.43E-09		1E-11		1.25E-08		9E-11
Di-n-butylphthalate	1.00E-01	NA	5.35E-02	1.10E-01	4.19E-09		4E-08		3.66E-08		4E-07	
Di-n-octylphthalate	2.00E-02	NA	2.34E-02	5.40E-02	1.83E-09		9E-08		1.60E-08		8E-07	
Dibenz(a,h)anthracene	NA	7.30E+00	2.75E-02	5.26E-02		7.69E-10		6E-09		6.73E-09		5E-08
Dibenzofuran	NA	NA	2.23E-02	2.23E-02								
Fluoranthene	4.00E-02	NA	2.44E-02	9.57E-02	1.91E-09		5E-08		1.67E-08		4E-07	
Fluorene	4.00E-02	NA	2.22E-02	4.98E-02	1.74E-09		4E-08		1.52E-08		4E-07	
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	2.85E-02	8.60E-02		7.97E-10		6E-10		6.97E-09		5E-09
Naphthalene	2.00E-02	NA	ND	9.76E-02								
Phenanthrene	NA	NA	2.38E-02	9.61E-02								
Phenol	6.00E-01	NA	ND	7.71E-02								
Pyrene	3.00E-02	NA	2.20E-02	1.02E-01	1.72E-09		6E-08		1.51E-08		5E-07	
Pesticides/PCBs												
4,4'-DDE	NA	3.40E-01	4.08E-03	3.86E-03		1.14E-10		4E-11		9.98E-10		3E-10
4,4'-DDT	5.00E-04	3.40E-01	6.09E-03	2.91E-03	4.77E-10	1.70E-10	1E-06	6E-11	4.17E-09	1.49E-09	8E-06	5E-10
Aldrin	3.00E-05	1.70E+01	ND	7.90E-04								
Alpha-BHC	NA	6.30E+00	ND	1.59E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	ND	1.26E-03								
Aroclor-1254	2.00E-05	2.00E+00	1.90E-01	2.09E-01	1.49E-08	5.31E-09	7E-04	1E-08	1.30E-07	4.65E-08	7E-03	9E-08
Aroclor-1260	2.00E-05	2.00E+00	ND	2.50E-02								
Beta-BHC	NA	1.80E+00	ND	1.18E-03								
Dieldrin	5.00E-05	1.60E+01	4.13E-03	3.82E-03	3.23E-10	1.15E-10	6E-06	2E-09	2.83E-09	1.01E-09	6E-05	2E-08
Endosulfan I	6.00E-03	NA	1.17E-03	1.16E-03	9.16E-11		2E-08		8.01E-10		1E-07	
Endosulfan II	6.00E-03	NA	2.14E-03	2.72E-03	1.68E-10		3E-08		1.47E-09		2E-07	
Endrin	3.00E-04	NA	2.43E-03	3.15E-03	1.90E-10		6E-07		1.66E-09		6E-06	
Endrin aldehyde	NA	NA	2.75E-03	2.37E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	3.76E-03	3.19E-03	2.94E-10	1.05E-10	6E-07	4E-11	2.58E-09	9.20E-10	5E-06	3E-10
Heptachlor	5.00E-04	4.50E+00	ND	1.45E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	1.85E-03	1.64E-03	1.45E-10	5.17E-11	1E-05	5E-10	1.27E-09	4.53E-10	1E-04	4E-09
Metals												
Copper	4.00E-02	NA	2.25E+01	3.33E+01	1.76E-06		4E-05		1.54E-05		4E-04	
Cyanide	2.00E-02	NA	6.25E-01	4.31E-01	4.89E-08		2E-06		4.28E-07		2E-05	
Selenium	5.00E-03	NA	7.39E-01	5.98E-01	5.78E-08		1E-05		5.06E-07		1E-04	
Thallium	8.00E-05	NA	1.07E+00	8.48E-01	8.38E-08		1E-03		7.33E-07		9E-03	
Total Hazard Quotient and Cancer Risk:							**2E-03**	**3E-08**			**2E-02**	**2E-07**

Assumptions for Current Site Worker			Assumptions for Future Outdoor Park Worker		
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
CS =	EPC Surface Only		CS =	EPC Surface Only	
BW =	70	kg	BW =	70	kg
IR =	100	mg soil/day	IR =	100	mg soil/day
FI =	1	unitless	FI =	1	unitless
EF =	20	days/year	EF =	175	days/year
ED =	25	years	ED =	25	years
AT (Nc) =	9,125	days	AT (Nc) =	9,125	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data
NA= Information not available
ND= Compound not detected

TABLE L-6A (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	EPC from Total Soils	Future Recreational Visitor (Child)				Future Construction Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	1.00E-01	NA	1.21E-02	1.07E-02	6.19E-09		6E-08		5.03E-08		5E-07	
Benzene	3.00E-03	2.90E-02	ND	6.00E-03					2.82E-08	4.03E-10	9E-06	1E-11
Ethyl benzene	1.00E-01	NA	ND	9.00E-03					4.23E-08		4E-07	
Methyl butyl ketone	NA	NA	1.00E-03	1.00E-03								
Methylene chloride	6.00E-02	7.50E-03	1.00E-03	3.00E-03	5.11E-10	3.65E-11	9E-09	3E-13	1.41E-08	2.01E-10	2E-07	2E-12
Styrene	2.00E-01	NA	ND	7.31E-03					3.43E-08		2E-07	
Toluene	2.00E-01	NA	4.00E-03	7.16E-03	2.05E-09		1E-08		3.36E-08		2E-07	
Total Xylenes	2.00E+00	NA	ND	1.44E-02					6.76E-08		3E-08	
Trichloroethene	NA	1.10E-02	ND	7.32E-03						4.91E-10		5E-12
Semivolatile Organics												
2,4-Dimethylphenol	2.00E-02	NA	ND	2.50E-02					1.17E-07		6E-06	
2-Methylnaphthalene	4.00E-02	NA	ND	5.00E-02					2.35E-07		6E-06	
4-Methylphenol	5.00E-03	NA	ND	7.78E-02					3.65E-07		7E-05	
Acenaphthene	6.00E-02	NA	ND	2.30E-02					1.08E-07		2E-06	
Acenaphthylene	NA	NA	ND	3.30E-02								
Anthracene	3.00E-01	NA	ND	8.06E-02					3.79E-07		1E-06	
Benzo(a)anthracene	NA	7.30E-01	2.70E-02	8.48E-02		9.86E-10		7E-10		5.69E-09		4E-09
Benzo(a)pyrene	NA	7.30E+00	2.70E-02	8.04E-02		9.86E-10		7E-09		5.39E-09		4E-08
Benzo(b)fluoranthene	NA	7.30E-01	3.60E-02	8.20E-02		1.32E-09		1E-09		5.50E-09		4E-09
Benzo(ghi)perylene	NA	NA	3.10E-02	8.83E-02								
Benzo(k)fluoranthene	NA	7.30E-02	2.60E-02	7.79E-02		9.50E-10		7E-11		5.23E-09		4E-10
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	7.32E-02	1.66E-01	3.74E-08	2.67E-09	2E-06	4E-11	7.80E-07	1.11E-08	4E-05	2E-10
Butylbenzylphthalate	2.00E-01	NA	2.29E-02	2.29E-02	1.17E-08		6E-08		1.08E-07		5E-07	
Carbazole	NA	2.00E-02	2.75E-02	2.75E-02		1.00E-09		2E-11		1.85E-09		4E-11
Chrysene	NA	7.30E-03	5.10E-02	8.98E-02		1.86E-09		1E-11		6.03E-09		4E-11
Di-n-butylphthalate	1.00E-01	NA	5.35E-02	1.10E-01	2.74E-08		3E-07		5.17E-07		5E-06	
Di-n-octylphthalate	2.00E-02	NA	2.34E-02	5.40E-02	1.20E-08		6E-07		2.54E-07		1E-05	
Dibenz(a,h)anthracene	NA	7.30E+00	2.75E-02	5.26E-02		1.00E-09		7E-09		3.53E-09		3E-08
Dibenzofuran	NA	NA	2.23E-02	2.23E-02								
Fluoranthene	4.00E-02	NA	2.44E-02	9.57E-02	1.25E-08		3E-07		4.49E-07		1E-05	
Fluorene	4.00E-02	NA	2.22E-02	4.98E-02	1.14E-08		3E-07		2.34E-07		6E-06	
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	2.85E-02	8.60E-02		1.04E-09		8E-10		5.77E-09		4E-09
Naphthalene	2.00E-02	NA	ND	9.76E-02					4.58E-07		2E-05	
Phenanthrene	NA	NA	2.38E-02	9.61E-02								
Phenol	6.00E-01	NA	ND	7.71E-02					3.62E-07		6E-07	
Pyrene	3.00E-02	NA	2.20E-02	1.02E-01	1.13E-08		4E-07		4.79E-07		2E-05	
Pesticides/PCBs												
4,4'-DDE	NA	3.40E-01	4.08E-03	3.86E-03		1.49E-10		5E-11		2.59E-10		9E-11
4,4'-DDT	5.00E-04	3.40E-01	6.09E-03	2.91E-03	3.11E-09	2.22E-10	6E-06	8E-11	1.37E-08	1.95E-10	3E-05	7E-11
Aldrin	3.00E-05	1.70E+01	ND	7.90E-04					3.71E-09	5.30E-11	1E-04	9E-10
Alpha-BHC	NA	6.30E+00	ND	1.59E-03						1.07E-10		7E-10
Alpha-Chlordane	5.00E-04	3.50E-01	ND	1.26E-03					5.92E-09	8.45E-11	1E-05	3E-11
Aroclor-1254	2.00E-05	2.00E+00	1.90E-01	2.09E-01	9.72E-08	6.94E-09	5E-03	1E-08	9.82E-07	1.40E-08	5E-02	3E-08
Aroclor-1260	2.00E-05	2.00E+00	ND	2.50E-02					1.17E-07	1.68E-09	6E-03	3E-09
Beta-BHC	NA	1.80E+00	ND	1.18E-03						7.92E-11		1E-10
Dieldrin	5.00E-05	1.60E+01	4.13E-03	3.82E-03	2.11E-09	1.51E-10	4E-05	2E-09	1.79E-08	2.56E-10	4E-04	4E-09
Endosulfan I	6.00E-03	NA	1.17E-03	1.16E-03	5.98E-10		1E-07		5.45E-09		9E-07	
Endosulfan II	6.00E-03	NA	2.14E-03	2.72E-03	1.09E-09		2E-07		1.28E-08		2E-06	
Endrin	3.00E-04	NA	2.43E-03	3.15E-03	1.24E-09		4E-06		1.48E-08		5E-05	
Endrin aldehyde	NA	NA	2.75E-03	2.37E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	3.76E-03	3.19E-03	1.92E-09	1.37E-10	4E-06	5E-11	1.50E-08	2.14E-10	3E-05	7E-11
Heptachlor	5.00E-04	4.50E+00	ND	1.45E-03					6.81E-09	9.73E-11	1E-05	4E-10
Heptachlor epoxide	1.30E-05	9.10E+00	1.85E-03	1.64E-03	9.46E-10	6.76E-11	7E-05	6E-10	7.70E-09	1.10E-10	6E-04	1E-09
Metals												
Copper	4.00E-02	NA	2.25E+01	3.33E+01	1.15E-05		3E-04		1.56E-04		4E-03	
Cyanide	2.00E-02	NA	6.25E-01	4.31E-01	3.20E-07		2E-05		2.02E-06		1E-04	
Selenium	5.00E-03	NA	7.39E-01	5.98E-01	3.78E-07		8E-05		2.81E-06		6E-04	
Thallium	8.00E-05	NA	1.07E+00	8.48E-01	5.47E-07		7E-03		3.98E-06		5E-02	
Total Hazard Quotient and Cancer Risk:							**1E-02**	**3E-08**			**1E-01**	**1E-07**

Assumptions for Future Recreational Visitor (Child)			Assumptions for Future Construction Worker		
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
CS =	EPC Surface Only		CS =	EPC Surface and Subsurf	
BW =	15	kg	BW =	70	kg
IR =	200	mg soil/day	IR =	480	mg soil/day
FI =	1	unitless	FI =	1	unitless
EF =	14	days/year	EF =	250	days/year
ED =	5	years	ED =	1	years
AT (Nc) =	1,825	days	AT (Nc) =	365	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note. Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available
ND= Compound not detected.

TABLE L-6A (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Surface Soil (mg/kg)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics												
Acetone	1.00E-01	NA	1.21E-02	1.66E-08		2E-07		1.55E-07		2E-06		
Benzene	3.00E-03	2.90E-02	ND									
Ethyl benzene	1.00E-01	NA	ND									
Methyl butyl ketone	NA	NA	1.00E-03									
Methylene chloride	6.00E-02	7.50E-03	1.00E-03	1.37E-09	4.70E-10	2E-08	4E-12	1.28E-08	1.10E-09	2E-07	8E-12	1E-11
Styrene	2.00E-01	NA	ND									
Toluene	2.00E-01	NA	4.00E-03	5.48E-09		3E-08		5.11E-08		3E-07		
Total Xylenes	2.00E+00	NA	ND									
Trichloroethene	NA	1.10E-02	ND									
Semivolatile Organics												
2,4-Dimethylphenol	2.00E-02	NA	ND									
2-Methylnaphthalene	4.00E-02	NA	ND									
4-Methylphenol	5.00E-03	NA	ND									
Acenaphthene	6.00E-02	NA	ND									
Acenaphthylene	NA	NA	ND									
Anthracene	3.00E-01	NA	ND									
Benzo(a)anthracene	NA	7.30E-01	2.70E-02		1.27E-08		9E-09		2.96E-08		2E-08	3E-08
Benzo(a)pyrene	NA	7.30E+00	2.70E-02		1.27E-08		9E-08		2.96E-08		2E-07	3E-07
Benzo(b)fluoranthene	NA	7.30E-01	3.60E-02		1.69E-08		1E-08		3.95E-08		3E-08	4E-08
Benzo(ghi)perylene	NA	NA	3.10E-02									
Benzo(k)fluoranthene	NA	7.30E-02	2.60E-02		1.22E-08		9E-10		2.85E-08		2E-09	3E-09
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	7.32E-02	1.00E-07	3.44E-08	5E-06	5E-10	9.36E-07	8.02E-08	5E-05	1E-09	2E-09
Butylbenzylphthalate	2.00E-01	NA	2.29E-02	3.14E-08		2E-07		2.93E-07		1E-06		
Carbazole	NA	2.00E-02	2.75E-02		1.29E-08		3E-10		3.01E-08		6E-10	9E-10
Chrysene	NA	7.30E-03	5.10E-02		2.40E-08		2E-10		5.59E-08		4E-10	6E-10
Di-n-butylphthalate	1.00E-01	NA	5.35E-02	7.33E-08		7E-07		6.84E-07		7E-06		
Di-n-octylphthalate	2.00E-02	NA	2.34E-02	3.21E-08		2E-06		2.99E-07		1E-05		
Dibenz(a,h)anthracene	NA	7.30E+00	2.75E-02		1.29E-08		9E-08		3.01E-08		2E-07	3E-07
Dibenzofuran	NA	NA	2.23E-02									
Fluoranthene	4.00E-02	NA	2.44E-02	3.34E-08		8E-07		3.12E-07		8E-06		
Fluorene	4.00E-02	NA	2.22E-02	3.04E-08		8E-07		2.84E-07		7E-06		
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	2.85E-02		1.34E-08		1E-08		3.12E-08		2E-08	3E-08
Naphthalene	2.00E-02	NA	ND									
Phenanthrene	NA	NA	2.38E-02									
Phenol	6.00E-01	NA	ND									
Pyrene	3.00E-02	NA	2.20E-02	3.01E-08		1E-06		2.81E-07		9E-06		
Pesticides/PCBs												
4,4'-DDE	NA	3.40E-01	4.08E-03		1.92E-09		7E-10		4.47E-09		2E-09	2E-09
4,4'-DDT	5.00E-04	3.40E-01	6.09E-03	8.34E-09	2.86E-09	2E-05	1E-09	7.79E-08	6.67E-09	2E-04	2E-09	3E-09
Aldrin	3.00E-05	1.70E+01	ND									
Alpha-BHC	NA	6.30E+00	ND									
Alpha-Chlordane	5.00E-04	3.50E-01	ND									
Aroclor-1254	2.00E-05	2.00E+00	1.90E-01	2.60E-07	8.92E-08	1E-02	2E-07	2.43E-06	2.08E-07	1E-01	4E-07	6E-07
Aroclor-1260	2.00E-05	2.00E+00	ND									
Beta-BHC	NA	1.80E+00	ND									
Dieldrin	5.00E-05	1.60E+01	4.13E-03	5.66E-09	1.94E-09	1E-04	3E-08	5.28E-08	4.53E-09	1E-03	7E-08	1E-07
Endosulfan I	6.00E-03	NA	1.17E-03	1.60E-09		3E-07		1.50E-08		2E-06		
Endosulfan II	6.00E-03	NA	2.14E-03	2.93E-09		5E-07		2.74E-08		5E-06		
Endrin	3.00E-04	NA	2.43E-03	3.33E-09		1E-05		3.11E-08		1E-04		
Endrin aldehyde	NA	NA	2.75E-03									
Gamma-Chlordane	5.00E-04	3.50E-01	3.76E-03	5.15E-09	1.77E-09	1E-05	6E-10	4.81E-08	4.12E-09	1E-04	1E-09	2E-09
Heptachlor	5.00E-04	4.50E+00	ND									
Heptachlor epoxide	1.30E-05	9.10E+00	1.85E-03	2.53E-09	8.69E-10	2E-04	8E-09	2.37E-08	2.03E-09	2E-03	2E-08	3E-08
Metals												
Copper	4.00E-02	NA	2.25E+01	3.08E-05		8E-04		2.88E-04		7E-03		
Cyanide	2.00E-02	NA	6.25E-01	8.56E-07		4E-05		7.99E-06		4E-04		
Selenium	5.00E-03	NA	7.39E-01	1.01E-06		2E-04		9.45E-06		2E-03		
Thallium	8.00E-05	NA	1.07E+00	1.47E-06		2E-02		1.37E-05		2E-01		
Total Hazard Quotient and Cancer Risk:						3E-02				3E-01		1E-06

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
CS =	EPC Surface Only		CS =	EPC Surface Only	
BW =	70	kg	BW =	15	kg
IR =	100	mg soil/day	IR =	200	mg soil/day
FI =	1	unitless	FI =	1	unitless
EF =	350	days/year	EF =	350	days/year
ED =	24	years	ED =	6	years
AT (Nc) =	8,760	days	AT (Nc) =	2,190	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected

TABLE L-6B (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	EPC from Total Soils	Current Site Worker				Future Outdoor Park Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	1.00E-01	NA	9.62E-03	8.49E-03	7.53E-10		8E-09		6.59E-09		7E-08	
Chlorobenzene	2.00E-02	NA	ND	5.00E-03								
Methylene chloride	6.00E-02	7.50E-03	ND	8.01E-03								
Tetrachloroethene	1.00E-02	5.20E-02	ND	2.00E-03								
Toluene	2.00E-01	NA	ND	7.50E-03								
Total Xylenes	2.00E+00	NA	ND	6.38E-03								
Trichloroethene	NA	1.10E-02	ND	2.00E-03								
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	ND	2.20E-02								
Acenaphthene	6.00E-02	NA	ND	4.40E-02								
Anthracene	3.00E-01	NA	4.60E-03	6.30E-02	3.60E-10		1E-09		3.15E-09		1E-08	
Benzo(a)anthracene	NA	7.30E-01	2.60E-02	9.85E-02		7.27E-10		5E-10		6.36E-09		5E-09
Benzo(a)pyrene	NA	7.30E+00	2.00E-02	8.97E-02		5.59E-10		4E-09		4.89E-09		4E-08
Benzo(b)fluoranthene	NA	7.30E-01	2.80E-02	9.85E-02		7.83E-10		6E-10		6.85E-09		5E-09
Benzo(ghi)perylene	NA	NA	2.65E-02	8.31E-02								
Benzo(k)fluoranthene	NA	7.30E-02	2.75E-02	9.61E-02		7.69E-10		6E-11		6.73E-09		5E-10
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	5.80E-03	1.60E-02	4.54E-10	1.62E-10	2E-08	2E-12	3.97E-09	1.42E-09	2E-07	2E-11
Butylbenzylphthalate	2.00E-01	NA	ND	3.00E-02								
Carbazole	NA	2.00E-02	2.37E-02	4.00E-02		6.63E-10		1E-11		5.80E-09		1E-10
Chrysene	NA	7.30E-03	2.70E-02	1.04E-01		7.55E-10		6E-12		6.60E-09		5E-11
Di-n-butylphthalate	1.00E-01	NA	4.50E-03	5.20E-02	3.52E-10		4E-09		3.08E-09		3E-08	
Di-n-octylphthalate	2.00E-02	NA	7.30E-03	2.00E-02	5.71E-10		3E-08		5.00E-09		3E-07	
Dibenz(a,h)anthracene	NA	7.30E+00	2.33E-02	8.15E-02		6.51E-10		5E-09		5.70E-09		4E-08
Fluoranthene	4.00E-02	NA	4.00E-02	1.08E-01	3.13E-09		8E-08		2.74E-08		7E-07	
Fluorene	4.00E-02	NA	ND	3.50E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	2.65E-02	8.38E-02		7.41E-10		5E-10		6.48E-09		5E-09
N-Nitrosodiphenylamine	NA	4.90E-03	ND	1.43E-01								
Naphthalene	2.00E-02	NA	ND	1.30E-02								
Phenanthrene	NA	NA	2.10E-02	9.71E-02								
Pyrene	3.00E-02	NA	3.40E-02	1.08E-01	2.66E-09		9E-08		2.33E-08		8E-07	
Dibenzofuran	NA	NA	3.40E-02	1.08E-01								
Pesticides/PCBs												
4,4'-DDD	NA	2.40E-01	3.96E-03	2.60E-03		1.11E-10		3E-11		9.69E-10		2E-10
4,4'-DDE	NA	3.40E-01	ND	2.28E-03								
4,4'-DDT	5.00E-04	3.40E-01	2.12E-03	2.35E-03	1.66E-10	5.93E-11	3E-07	2E-11	1.45E-09	5.19E-10	3E-06	2E-10
Alpha-BHC	NA	6.30E+00	ND	1.17E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	ND	1.08E-03								
Aroclor-1254	2.00E-05	2.00E+00	ND	2.04E-02								
Aroclor-1260	2.00E-05	2.00E+00	ND	2.04E-02								
Beta-BHC	NA	1.80E+00	ND	1.06E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	ND	1.07E-03								
Heptachlor	5.00E-04	4.50E+00	ND	1.22E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	ND	1.07E-03								
Metals												
Calcium	NA	NA	7.59E+01	9.59E+04								
Selenium	5.00E-03	NA	7.54E-04	7.18E-01	5.90E-11		1E-08		5.16E-10		1E-07	
Thallium	8.00E-05	NA	1.67E-03	8.77E-01	1.31E-10		2E-06		1.14E-09		1E-05	
Cyanide	2.00E-02	NA	ND	3.53E-01								
Total Hazard Quotient and Cancer Risk:							**2E-06**	**1E-08**			**2E-05**	**9E-08**

Assumptions for Current Site Worker		Assumptions for Future Outdoor Park Worker	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	CS =	EPC Surface Only
BW =	70 kg	BW =	70 kg
IR =	100 mg soil/day	IR =	100 mg soil/day
FI =	1 unitless	FI =	1 unitless
EF =	20 days/year	EF =	175 days/year
ED =	25 years	ED =	25 years
AT (Nc) =	9,125 days	AT (Nc) =	9,125 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-6B (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	EPC from Total Soils	Future Recreational Visitor (Child)				Future Construction Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	1.00E-01	NA	9.62E-03	8.49E-03	4.92E-09		5E-08		3.99E-08		4E-07	
Chlorobenzene	2.00E-02	NA	ND	5.00E-03					2.35E-08		1E-06	
Methylene chloride	6.00E-02	7.50E-03	ND	8.01E-03					3.76E-08	5.37E-10	6E-07	4E-12
Tetrachloroethene	1.00E-02	5.20E-02	ND	2.00E-03					9.39E-09	1.34E-10	9E-07	7E-12
Toluene	2.00E-01	NA	ND	7.50E-03					3.52E-08		2E-07	
Total Xylenes	2.00E+00	NA	ND	6.38E-03					3.00E-08		1E-08	
Trichloroethene	NA	1.10E-02	ND	2.00E-03						1.34E-10		1E-12
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	ND	2.20E-02					1.03E-07		3E-06	
Acenaphthene	6.00E-02	NA	ND	4.40E-02					2.07E-07		3E-06	
Anthracene	3.00E-01	NA	4.60E-03	6.30E-02	2.35E-09		8E-09		2.96E-07		1E-06	
Benzo(a)anthracene	NA	7.30E-01	2.60E-02	9.85E-02		9.50E-10		7E-10		6.61E-09		5E-09
Benzo(a)pyrene	NA	7.30E+00	2.00E-02	8.97E-02		7.31E-10		5E-09		6.02E-09		4E-08
Benzo(b)fluoranthene	NA	7.30E-01	2.80E-02	9.85E-02		1.02E-09		7E-10		6.61E-09		5E-09
Benzo(ghi)perylene	NA	NA	2.65E-02	8.31E-02								
Benzo(k)fluoranthene	NA	7.30E-02	2.75E-02	9.61E-02		1.00E-09		7E-11		6.45E-09		5E-10
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	5.80E-03	1.60E-02	2.97E-09	2.12E-10	1E-07	3E-12	7.51E-08	1.07E-09	4E-06	2E-11
Butylbenzylphthalate	2.00E-01	NA	ND	3.00E-02					1.41E-07		7E-07	
Carbazole	NA	2.00E-02	2.37E-02	4.00E-02		8.66E-10		2E-11		2.68E-09		5E-11
Chrysene	NA	7.30E-03	2.70E-02	1.04E-01		9.86E-10		7E-12		6.98E-09		5E-11
Di-n-butylphthalate	1.00E-01	NA	4.50E-03	5.20E-02	2.30E-09		2E-08		2.44E-07		2E-06	
Di-n-octylphthalate	2.00E-02	NA	7.30E-03	2.00E-02	3.73E-09		2E-07		9.39E-08		5E-06	
Dibenz(a,h)anthracene	NA	7.30E+00	2.33E-02	8.15E-02		8.51E-10		6E-09		5.47E-09		4E-08
Fluoranthene	4.00E-02	NA	4.00E-02	1.08E-01	2.05E-08		5E-07		5.07E-07		1E-05	
Fluorene	4.00E-02	NA	ND	3.50E-02					1.64E-07		4E-06	
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	2.65E-02	8.38E-02		9.68E-10		7E-10		5.62E-09		4E-09
N-Nitrosodiphenylamine	NA	4.90E-03	ND	1.43E-01						9.59E-09		5E-11
Naphthalene	2.00E-02	NA	ND	1.30E-02					6.11E-08		3E-06	
Phenanthrene	NA	NA	2.10E-02	9.71E-02								
Pyrene	3.00E-02	NA	3.40E-02	1.08E-01	1.74E-08		6E-07		5.07E-07		2E-05	
Dibenzofuran	NA	NA	3.40E-02	1.08E-01								
Pesticides/PCBs												
4,4'-DDD	NA	2.40E-01	3.96E-03	2.60E-03		1.45E-10		3E-11		1.74E-10		4E-11
4,4'-DDE	NA	3.40E-01	ND	2.28E-03						1.53E-10		5E-11
4,4'-DDT	5.00E-04	3.40E-01	2.12E-03	2.35E-03	1.08E-09	7.74E-11	2E-06	3E-11	1.10E-08	1.58E-10	2E-05	5E-11
Alpha-BHC	NA	6.30E+00	ND	1.17E-03						7.85E-11		5E-10
Alpha-Chlordane	5.00E-04	3.50E-01	ND	1.08E-03					5.07E-09	7.25E-11	1E-05	3E-11
Aroclor-1254	2.00E-05	2.00E+00	ND	2.04E-02					9.58E-08	1.37E-09	5E-03	3E-09
Aroclor-1260	2.00E-05	2.00E+00	ND	2.04E-02					9.58E-08	1.37E-09	5E-03	3E-09
Beta-BHC	NA	1.80E+00	ND	1.06E-03						7.11E-11		1E-10
Gamma-Chlordane	5.00E-04	3.50E-01	ND	1.07E-03					5.03E-09	7.18E-11	1E-05	3E-11
Heptachlor	5.00E-04	4.50E+00	ND	1.22E-03					5.73E-09	8.19E-11	1E-05	4E-10
Heptachlor epoxide	1.30E-05	9.10E+00	ND	1.07E-03					5.03E-09	7.18E-11	4E-04	7E-10
Metals												
Calcium	NA	NA	7.59E+01	9.59E+04								
Selenium	5.00E-03	NA	7.54E-04	7.18E-01	3.86E-10		8E-08		3.37E-06		7E-04	
Thallium	8.00E-05	NA	1.67E-03	8.77E-01	8.54E-10		1E-05		4.12E-06		5E-02	
Cyanide	2.00E-02	NA	ND	3.53E-01					1.66E-06		8E-05	
Total Hazard Quotient and Cancer Risk:							**1E-05**	**1E-08**			**6E-02**	**1E-07**

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	CS =	EPC Surface and Subsurf
BW =	15 kg	BW =	70 kg
IR =	200 mg soil/day	IR =	480 mg soil/day
FI =	1 unitless	FI =	1 unitless
EF =	14 days/year	EF =	250 days/year
ED =	5 years	ED =	1 years
AT (Nc) =	1,825 days	AT (Nc) =	365 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-6B (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	Future Resident (Adult)				Future Resident (Child)				Resident
				Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Total Lifetime Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			
Volatile Organics												
Acetone	1.00E-01	NA	9.62E-03	1.32E-08		1E-07		1.23E-07		1E-06		
Chlorobenzene	2.00E-02	NA	ND									
Methylene chloride	6.00E-02	7.50E-03	ND									
Tetrachloroethene	1.00E-02	5.20E-02	ND									
Toluene	2.00E-01	NA	ND									
Total Xylenes	2.00E+00	NA	ND									
Trichloroethene	NA	1.10E-02	ND									
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	ND									
Acenaphthene	6.00E-02	NA	ND									
Anthracene	3.00E-01	NA	4.60E-03	6.30E-09		2E-08		5.88E-08		2E-07		
Benzo(a)anthracene	NA	7.30E-01	2.60E-02		1.22E-08		9E-09		2.85E-08		2E-08	3E-08
Benzo(a)pyrene	NA	7.30E+00	2.00E-02		9.39E-09		7E-08		2.19E-08		2E-07	2E-07
Benzo(b)fluoranthene	NA	7.30E-01	2.80E-02		1.32E-08		1E-08		3.07E-08		2E-08	3E-08
Benzo(ghi)perylene	NA	NA	2.65E-02									
Benzo(k)fluoranthene	NA	7.30E-02	2.75E-02		1.29E-08		9E-10		3.01E-08		2E-09	3E-09
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	5.80E-03	7.95E-09	2.72E-09	4E-07	4E-11	7.42E-08	6.36E-09	4E-06	9E-11	1E-10
Butylbenzylphthalate	2.00E-01	NA	ND									
Carbazole	NA	2.00E-02	2.37E-02		1.11E-08		2E-10		2.60E-08		5E-10	7E-10
Chrysene	NA	7.30E-03	2.70E-02		1.27E-08		9E-11		2.96E-08		2E-10	3E-10
Di-n-butylphthalate	1.00E-01	NA	4.50E-03	6.16E-09		6E-08		5.75E-08		6E-07		
Di-n-octylphthalate	2.00E-02	NA	7.30E-03	1.00E-08		5E-07		9.33E-08		5E-06		
Dibenz(a,h)anthracene	NA	7.30E+00	2.33E-02		1.09E-08		8E-08		2.55E-08		2E-07	3E-07
Fluoranthene	4.00E-02	NA	4.00E-02	5.48E-08		1E-06		5.11E-07		1E-05		
Fluorene	4.00E-02	NA	ND									
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	2.65E-02		1.24E-08		9E-09		2.90E-08		2E-08	3E-08
N-Nitrosodiphenylamine	NA	4.90E-03	ND									
Naphthalene	2.00E-02	NA	ND									
Phenanthrene	NA	NA	2.10E-02									
Pyrene	3.00E-02	NA	3.40E-02	4.66E-08		2E-06		4.35E-07		1E-05		
Dibenzofuran	NA	NA	3.40E-02									
Pesticides/PCBs												
4,4'-DDD	NA	2.40E-01	3.96E-03		1.86E-09		4E-10		4.34E-09		1E-09	1E-09
4,4'-DDE	NA	3.40E-01	ND									
4,4'-DDT	5.00E-04	3.40E-01	2.12E-03	2.90E-09	9.96E-10	6E-06	3E-10	2.71E-08	2.32E-09	5E-05	8E-10	1E-09
Alpha-BHC	NA	6.30E+00	ND									
Alpha-Chlordane	5.00E-04	3.50E-01	ND									
Aroclor-1254	2.00E-05	2.00E+00	ND									
Aroclor-1260	2.00E-05	2.00E+00	ND									
Beta-BHC	NA	1.80E+00	ND									
Gamma-Chlordane	5.00E-04	3.50E-01	ND									
Heptachlor	5.00E-04	4.50E+00	ND									
Heptachlor epoxide	1.30E-05	9.10E+00	ND									
Metals												
Calcium	NA	NA	7.59E+01									
Selenium	5.00E-03	NA	7.54E-04	1.03E-09		2E-07		9.64E-09		2E-06		
Thallium	8.00E-05	NA	1.67E-03	2.29E-09		3E-05		2.14E-08		3E-04		
Cyanide	2.00E-02	NA	ND									
Total Hazard Quotient and Cancer Risk:						4E-05				4E-04		6E-07

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
CS =	EPC Surface Only		CS =	EPC Surface Only	
BW =	70	kg	BW =	15	kg
IR =	100	mg soil/day	IR =	200	mg soil/day
FI =	1	unitless	FI =	1	unitless
EF =	350	days/year	EF =	350	days/year
ED =	24	years	ED =	6	years
AT (Nc) =	8,760	days	AT (Nc) =	2,190	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-6C (Former Dry Waste Disposal Pit)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Surface Soil (mg/kg)	EPC from Total Soils (mg/kg)	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk
Volatile Organics												
Acetone	1.00E-01	NA	6.23E-03	1.10E-02	4.88E-10		5E-09		4.27E-09		4E-08	
Benzene	3.00E-03	2.90E-02	ND	2.00E-03								
Carbon disulfide	1.00E-01	NA	ND	3.00E-03								
Methyl ethyl ketone	6.00E-01	NA	ND	3.00E-03								
Methylene chloride	6.00E-02	7.50E-03	ND	2.00E-03								
Toluene	2.00E-01	NA	8.02E-03	6.18E-03	6.28E-10		3E-09		5.49E-09		3E-08	
Semivolatile Organics												
1,2,4-Trichlorobenzene	1.00E-02	NA	2.35E-02	2.35E-02	1.84E-09		2E-07		1.61E-08		2E-06	
2-Methylnaphthalene	4.00E-02	NA	5.50E-03	5.50E-03	4.31E-10		1E-08		3.77E-09		9E-08	
Anthracene	3.00E-01	NA										
Benzo(a)anthracene	NA	7.30E-01	2.60E-02	2.60E-02		7.27E-10		5E-10		6.36E-09		5E-09
Benzo(a)pyrene	NA	7.30E+00	2.00E-02	2.00E-02		5.59E-10		4E-09		4.89E-09		4E-08
Benzo(b)fluoranthene	NA	7.30E-01	3.40E-02	3.40E-02		9.51E-10		7E-10		8.32E-09		6E-09
Benzo(ghi)perylene	NA	NA	2.35E-02	2.35E-02								
Benzo(k)fluoranthene	NA	7.30E-02	2.00E-02	2.00E-02		5.59E-10		4E-11		4.89E-09		4E-10
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	3.60E-02	7.02E-02	2.82E-09	1.01E-09	1E-07	1E-11	2.47E-08	8.81E-09	1E-06	1E-10
Butylbenzylphthalate	2.00E-01	NA	5.90E-03	7.20E-03	4.62E-10		2E-09		4.04E-09		2E-08	
Carbazole	NA	2.00E-02										
Chrysene	NA	7.30E-03	3.20E-02	3.20E-02		8.95E-10		7E-12		7.83E-09		6E-11
Di-n-butylphthalate	1.00E-01	NA	2.01E-02	1.19E-01	1.57E-09		2E-08		1.38E-08		1E-07	
Di-n-octylphthalate	2.00E-02	NA	1.50E-02	3.40E-02	1.17E-09		6E-08		1.03E-08		5E-07	
Dibenzofuran	NA	NA										
Diethyl phthalate	8.00E-01	NA	1.10E-02	1.10E-02	8.61E-10		1E-09		7.53E-09		9E-09	
Fluoranthene	4.00E-02	NA	5.55E-02	6.40E-02	4.34E-09		1E-07		3.80E-08		1E-06	
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	6.15E-03	6.10E-03		1.72E-10		1E-10		1.50E-09		1E-09
Naphthalene	2.00E-02	NA	5.40E-03	5.40E-03	4.23E-10		2E-08		3.70E-09		2E-07	
Phenanthrene	NA	NA	3.40E-02	3.40E-02								
Pyrene	3.00E-02	NA	3.07E-02	5.10E-02	2.40E-09		8E-08		2.10E-08		7E-07	
Pesticides/PCBs												
4,4'-DDE	NA	3.40E-01	2.00E-03	1.92E-03		5.59E-11		2E-11		4.89E-10		2E-10
4,4'-DDT	5.00E-04	3.40E-01	2.54E-03	1.98E-03	1.99E-10	7.10E-11	4E-07	2E-11	1.74E-09	6.21E-10	3E-06	2E-10
Aroclor-1242	2.00E-05	2.00E+00	1.70E-02	1.70E-02	1.33E-09	4.75E-10	7E-05	1E-09	1.16E-08	4.16E-09	6E-04	8E-09
Aroclor-1254	2.00E-05	2.00E+00	2.08E-02	1.93E-02	1.63E-09	5.81E-10	8E-05	1E-09	1.42E-08	5.09E-09	7E-04	1E-08
Aroclor-1260	2.00E-05	2.00E+00	2.13E-02	1.93E-02	1.67E-09	5.95E-10	8E-05	1E-09	1.46E-08	5.21E-09	7E-04	1E-08
Endrin aldehyde	NA	NA	2.06E-03	1.93E-03								
Metals												
Calcium	NA	NA	8.04E+04	1.11E+05								
Copper	4.00E-02	NA	2.33E+01	2.31E+01	1.82E-06		5E-05		1.60E-05		4E-04	
Magnesium	NA	NA	1.37E+04	1.52E+04								
Selenium	5.00E-03	NA	7.56E-01	6.18E-01	5.92E-08		1E-05		5.18E-07		1E-04	
Thallium	8.00E-05	NA	1.16E+00	8.40E-01	9.08E-08		1E-03		7.95E-07		1E-02	
Total Hazard Quotient and Cancer Risk:							**1E-03**	**9E-09**			**1E-02**	**8E-08**

Assumptions for Current Site Worker			Assumptions for Future Outdoor Park Worker		
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
CS =	EPC Surface Only		CS =	EPC Surface Only	
BW =	70	kg	BW =	70	kg
IR =	100	mg soil/day	IR =	100	mg soil/day
FI =	1	unitless	FI =	1	unitless
EF =	20	days/year	EF =	175	days/year
ED =	25	years	ED =	25	years
AT (Nc) =	9,125	days	AT (Nc) =	9,125	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-6C (Former Dry Waste Disposal Pit)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	EPC from Total Soils	Future Recreational Visitor (Child)				Future Construction Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	1.00E-01	NA	6.23E-03	1.10E-02	3.19E-09		3E-08		5.17E-08		5E-07	
Benzene	3.00E-03	2.90E-02	ND	2.00E-03					9.39E-09	1.34E-10	3E-06	4E-12
Carbon disulfide	1.00E-01	NA	ND	3.00E-03					1.41E-08		1E-07	
Methyl ethyl ketone	6.00E-01	NA	ND	3.00E-03					1.41E-08		2E-08	
Methylene chloride	6.00E-02	7.50E-03	ND	2.00E-03					9.39E-09	1.34E-10	2E-07	1E-12
Toluene	2.00E-01	NA	8.02E-03	6.18E-03	4.10E-09		2E-08		2.90E-08		1E-07	
Semivolatile Organics												
1,2,4-Trichlorobenzene	1.00E-02	NA	2.35E-02	2.35E-02	1.20E-08		1E-06		1.10E-07		1E-05	
2-Methylnaphthalene	4.00E-02	NA	5.50E-03	5.50E-03	2.81E-09		7E-08		2.58E-08		6E-07	
Anthracene	3.00E-01	NA										
Benzo(a)anthracene	NA	7.30E-01	2.60E-02	2.60E-02		9.50E-10		7E-10		1.74E-09		1E-09
Benzo(a)pyrene	NA	7.30E+00	2.00E-02	2.00E-02		7.31E-10		5E-09		1.34E-09		1E-08
Benzo(b)fluoranthene	NA	7.30E-01	3.40E-02	3.40E-02		1.24E-09		9E-10		2.28E-09		2E-09
Benzo(ghi)perylene	NA	NA	2.35E-02	2.35E-02								
Benzo(k)fluoranthene	NA	7.30E-02	2.00E-02	2.00E-02		7.31E-10		5E-11		1.34E-09		1E-10
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	3.60E-02	7.02E-02	1.84E-08	1.32E-09	9E-07	2E-11	3.30E-07	4.71E-09	2E-05	7E-11
Butylbenzylphthalate	2.00E-01	NA	5.90E-03	7.20E-03	3.02E-09		2E-08		3.38E-08		2E-07	
Carbazole	NA	2.00E-02										
Chrysene	NA	7.30E-03	3.20E-02	3.20E-02		1.17E-09		9E-12		2.15E-09		2E-11
Di-n-butylphthalate	1.00E-01	NA	2.01E-02	1.19E-01	1.03E-08		1E-07		5.59E-07		6E-06	
Di-n-octylphthalate	2.00E-02	NA	1.50E-02	3.40E-02	7.67E-09		4E-07		1.60E-07		8E-06	
Dibenzofuran	NA	NA										
Diethyl phthalate	8.00E-01	NA	1.10E-02	1.10E-02	5.63E-09		7E-09		5.17E-08		6E-08	
Fluoranthene	4.00E-02	NA	5.55E-02	6.40E-02	2.84E-08		7E-07		3.01E-07		8E-06	
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	6.15E-03	6.10E-03		2.25E-10		2E-10		4.09E-10		3E-10
Naphthalene	2.00E-02	NA	5.40E-03	5.40E-03	2.76E-09		1E-07		2.54E-08		1E-06	
Phenanthrene	NA	NA	3.40E-02	3.40E-02								
Pyrene	3.00E-02	NA	3.07E-02	5.10E-02	1.57E-08		5E-07		2.40E-07		8E-06	
Pesticides/PCBs												
4,4'-DDE	NA	3.40E-01	2.00E-03	1.92E-03		7.31E-11		2E-11		1.29E-10		4E-11
4,4'-DDT	5.00E-04	3.40E-01	2.54E-03	1.98E-03	1.30E-09	9.28E-11	3E-06	3E-11	9.30E-09	1.33E-10	2E-05	5E-11
Aroclor-1242	2.00E-05	2.00E+00	1.70E-02	1.70E-02	8.69E-09	6.21E-10	4E-04	1E-09	7.98E-08	1.14E-09	4E-03	2E-09
Aroclor-1254	2.00E-05	2.00E+00	2.08E-02	1.93E-02	1.06E-08	7.60E-10	5E-04	2E-09	9.06E-08	1.29E-09	5E-03	3E-09
Aroclor-1260	2.00E-05	2.00E+00	2.13E-02	1.93E-02	1.09E-08	7.78E-10	5E-04	2E-09	9.06E-08	1.29E-09	5E-03	3E-09
Endrin aldehyde	NA	NA	2.06E-03	1.93E-03								
Metals												
Calcium	NA	NA	8.04E+04	1.11E+05								
Copper	4.00E-02	NA	2.33E+01	2.31E+01	1.19E-05		3E-04		1.08E-04		3E-03	
Magnesium	NA	NA	1.37E+04	1.52E+04								
Selenium	5.00E-03	NA	7.56E-01	6.18E-01	3.87E-07		8E-05		2.90E-06		6E-04	
Thallium	8.00E-05	NA	1.16E+00	8.40E-01	5.93E-07		7E-03		3.95E-06		5E-02	
Total Hazard Quotient and Cancer Risk:							**9E-03**	**1E-08**			**7E-02**	**2E-08**

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	CS =	EPC Surface and Subsurf
BW =	15 kg	BW =	70 kg
IR =	200 mg soil/day	IR =	480 mg soil/day
FI =	1 unitless	FI =	1 unitless
EF =	14 days/year	EF =	250 days/year
ED =	5 years	ED =	1 years
AT (Nc) =	1,825 days	AT (Nc) =	365 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-6C (Former Dry Waste Disposal Pit)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Surface Soil (mg/kg)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics												
Acetone	1.00E-01	NA	6.23E-03	8.53E-09		9E-08		7.97E-08		8E-07		
Benzene	3.00E-03	2.90E-02	ND									
Carbon disulfide	1.00E-01	NA	ND									
Methyl ethyl ketone	6.00E-01	NA	ND									
Methylene chloride	6.00E-02	7.50E-03	ND									
Toluene	2.00E-01	NA	8.02E-03	1.10E-08		5E-08		1.03E-07		5E-07		
Semivolatile Organics												
1,2,4-Trichlorobenzene	1.00E-02	NA	2.35E-02	3.22E-08		3E-06		3.00E-07		3E-05		
2-Methylnaphthalene	4.00E-02	NA	5.50E-03	7.53E-09		2E-07		7.03E-08		2E-06		
Anthracene	3.00E-01	NA										
Benzo(a)anthracene	NA	7.30E-01	2.60E-02		1.22E-08		9E-09		2.85E-08		2E-08	3E-08
Benzo(a)pyrene	NA	7.30E+00	2.00E-02		9.39E-09		7E-08		2.19E-08		2E-07	2E-07
Benzo(b)fluoranthene	NA	7.30E-01	3.40E-02		1.60E-08		1E-08		3.73E-08		3E-08	4E-08
Benzo(ghi)perylene	NA	NA	2.35E-02									
Benzo(k)fluoranthene	NA	7.30E-02	2.00E-02		9.39E-09		7E-10		2.19E-08		2E-09	2E-09
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	3.60E-02	4.93E-08	1.69E-08	2E-06	2E-10	4.60E-07	3.95E-08	2E-05	6E-10	8E-10
Butylbenzylphthalate	2.00E-01	NA	5.90E-03	8.08E-09		4E-08		7.54E-08		4E-07		
Carbazole	NA	2.00E-02										
Chrysene	NA	7.30E-03	3.20E-02		1.50E-08		1E-10		3.51E-08		3E-10	4E-10
Di-n-butylphthalate	1.00E-01	NA	2.01E-02	2.75E-08		3E-07		2.57E-07		3E-06		
Di-n-octylphthalate	2.00E-02	NA	1.50E-02	2.05E-08		1E-06		1.92E-07		1E-05		
Dibenzofuran	NA	NA										
Diethyl phthalate	8.00E-01	NA	1.10E-02	1.51E-08		2E-08		1.41E-07		2E-07		
Fluoranthene	4.00E-02	NA	5.55E-02	7.60E-08		2E-06		7.10E-07		2E-05		
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	6.15E-03		2.89E-09		2E-09		6.74E-09		5E-09	7E-09
Naphthalene	2.00E-02	NA	5.40E-03	7.40E-09		4E-07		6.90E-08		3E-06		
Phenanthrene	NA	NA	3.40E-02									
Pyrene	3.00E-02	NA	3.07E-02	4.21E-08		1E-06		3.93E-07		1E-05		
Pesticides/PCBs												
4,4'-DDE	NA	3.40E-01	2.00E-03		9.39E-10		3E-10		2.19E-09		7E-10	1E-09
4,4'-DDT	5.00E-04	3.40E-01	2.54E-03	3.48E-09	1.19E-09	7E-06	4E-10	3.25E-08	2.78E-09	6E-05	9E-10	1E-09
Aroclor-1242	2.00E-05	2.00E+00	1.70E-02	2.33E-08	7.98E-09	1E-03	2E-08	2.17E-07	1.86E-08	1E-02	4E-08	5E-08
Aroclor-1254	2.00E-05	2.00E+00	2.08E-02	2.85E-08	9.77E-09	1E-03	2E-08	2.66E-07	2.28E-08	1E-02	5E-08	7E-08
Aroclor-1260	2.00E-05	2.00E+00	2.13E-02	2.92E-08	1.00E-08	1E-03	2E-08	2.72E-07	2.33E-08	1E-02	5E-08	7E-08
Endrin aldehyde	NA	NA	2.06E-03									
Metals												
Calcium	NA	NA	8.04E+04									
Copper	4.00E-02	NA	2.33E+01	3.19E-05		8E-04		2.98E-04		7E-03		
Magnesium	NA	NA	1.37E+04									
Selenium	5.00E-03	NA	7.56E-01	1.04E-06		2E-04		9.67E-06		2E-03		
Thallium	8.00E-05	NA	1.16E+00	1.59E-06		2E-02		1.48E-05		2E-01		
Total Hazard Quotient and Cancer Risk:						**2E-02**				**2E-01**		**5E-07**

Assumptions for Future Resident (Adult)

CF =	1E-06	kg/mg
CS =	EPC Surface Only	
BW =	70	kg
IR =	100	mg soil/day
FI =	1	unitless
EF =	350	days/year
ED =	24	years
AT (Nc) =	8,760	days
AT (Car) =	25,550	days

Assumptions for Future Resident (Child)

CF =	1E-06	kg/mg
CS =	EPC Surface Only	
BW =	15	kg
IR =	200	mg soil/day
FI =	1	unitless
EF =	350	days/year
ED =	6	years
AT (Nc) =	2,190	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-6D (Sediment)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Sediment, from Sediment EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Sediment	Current Site Worker				Future Outdoor Park Worker			
				Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics											
1,1,1-Trichloroethane	2.80E-01	NA	3.00E-03								
Acetone	1.00E-01	NA	2.32E-02								
Methyl chloride	NA	1.30E-02	9.84E-03		Ingestion of Onsite Sediment Not Applicable for Current Site Worker				Ingestion of Onsite Sediment Not Applicable for Future Outdoor Park Worker		
Methyl ethyl ketone	6.00E-01	NA	1.01E-02								
Tetrachloroethene	1.00E-02	5.20E-02	4.00E-03								
Toluene	2.00E-01	NA	1.04E-02								
Trichloroethene	NA	1.10E-02	1.05E-02								
Semivolatile Organics											
2-Methylnaphthalene	4.00E-02	NA	3.60E-02								
4-Chlorophenyl phenyl ether	NA	NA	6.00E-03								
4-Methylphenol	5.00E-03	NA	9.85E-02								
Acenaphthene	6.00E-02	NA	1.01E-01								
Acenaphthylene	NA	NA	1.50E-02								
Anthracene	3.00E-01	NA	1.14E-01								
Benzo(a)anthracene	NA	7.30E-01	2.86E-01								
Benzo(a)pyrene	NA	7.30E+00	2.99E-01								
Benzo(b)fluoranthene	NA	7.30E-01	3.89E-01								
Benzo(ghi)perylene	NA	NA	2.13E-01								
Benzo(k)fluoranthene	NA	7.30E-02	2.12E-01								
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.42E-01								
Butylbenzylphthalate	2.00E-01	NA	4.20E-02								
Carbazole	NA	2.00E-02	1.29E-01								
Chrysene	NA	7.30E-03	3.45E-01								
Di-n-butylphthalate	1.00E-01	NA	9.93E-02								
Di-n-octylphthalate	2.00E-02	NA	9.82E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	1.13E-01								
Dibenzofuran	NA	NA	6.40E-02								
Diethyl phthalate	8.00E-01	NA	4.00E-02								
Fluoranthene	4.00E-02	NA	8.07E-01								
Fluorene	4.00E-02	NA	9.30E-02								
Hexachlorobenzene	8.00E-04	1.60E+00	6.20E-03								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.94E-01								
Naphthalene	2.00E-02	NA	4.90E-02								
Phenanthrene	NA	NA	4.36E-01								
Pyrene	3.00E-02	NA	6.64E-01								
Pesticides/PCBs											
4,4'-DDD	NA	2.40E-01	6.14E-03								
4,4'-DDE	NA	3.40E-01	6.86E-03								
4,4'-DDT	5.00E-04	3.40E-01	5.89E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	1.73E-03								
Aroclor-1254	2.00E-05	2.00E+00	4.75E-02								
Aroclor-1260	2.00E-05	2.00E+00	3.26E-02								
Endosulfan I	6.00E-03	NA	1.71E-03								
Endrin	3.00E-04	NA	3.40E-03								
Endrin aldehyde	NA	NA	3.47E-03								
Endrin ketone	NA	NA	3.73E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	2.04E-03								
Metals											
Arsenic	3.00E-04	1.50E+00	6.64E+00								
Copper	4.00E-02	NA	4.58E+01								
Lead	NA	NA	2.85E+01								
Magnesium	NA	NA	1.27E+04								
Vanadium	7.00E-03	NA	2.77E+01								
Zinc	3.00E-01	NA	2.77E+02								
Total Hazard Quotient and Cancer Risk:											

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available

TABLE L-6D (Sediment)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Sediment, from Sediment EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Make NA for SEAD-12 RI

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Sediment (mg/kg)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Future Construction Worker Intake (mg/kg-day) (Car)	Future Construction Worker Hazard Quotient	Future Construction Worker Cancer Risk
Volatile Organics											
1,1,1-Trichloroethane	2.80E-01	NA	3.00E-03								
Acetone	1.00E-01	NA	2.32E-02								
Methyl chloride	NA	1.30E-02	9.84E-03								
Methyl ethyl ketone	6.00E-01	NA	1.01E-02								
Tetrachloroethene	1.00E-02	5.20E-02	4.00E-03								
Toluene	2.00E-01	NA	1.04E-02								
Trichloroethene	NA	1.10E-02	1.05E-02								
Semivolatile Organics											
2-Methylnaphthalene	4.00E-02	NA	3.60E-02								
4-Chlorophenyl phenyl ether	NA	NA	6.00E-03								
4-Methylphenol	5.00E-03	NA	9.85E-02								
Acenaphthene	6.00E-02	NA	1.01E-01								
Acenaphthylene	NA	NA	1.50E-02								
Anthracene	3.00E-01	NA	1.14E-01								
Benzo(a)anthracene	NA	7.30E-01	2.86E-01								
Benzo(a)pyrene	NA	7.30E+00	2.99E-01								
Benzo(b)fluoranthene	NA	7.30E-01	3.89E-01								
Benzo(ghi)perylene	NA	NA	2.13E-01								
Benzo(k)fluoranthene	NA	7.30E-02	2.12E-01								
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.42E-01								
Butylbenzylphthalate	2.00E-01	NA	4.20E-02								
Carbazole	NA	2.00E-02	1.29E-01								
Chrysene	NA	7.30E-03	3.45E-01								
Di-n-butylphthalate	1.00E-01	NA	9.93E-02								
Di-n-octylphthalate	2.00E-02	NA	9.82E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	1.13E-01								
Dibenzofuran	NA	NA	6.40E-02								
Diethyl phthalate	8.00E-01	NA	4.00E-02								
Fluoranthene	4.00E-02	NA	8.07E-01								
Fluorene	4.00E-02	NA	9.30E-02								
Hexachlorobenzene	8.00E-04	1.60E+00	6.20E-03								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.94E-01								
Naphthalene	2.00E-02	NA	4.90E-02								
Phenanthrene	NA	NA	4.36E-01								
Pyrene	3.00E-02	NA	6.64E-01								
Pesticides/PCBs											
4,4'-DDD	NA	2.40E-01	6.14E-03								
4,4'-DDE	NA	3.40E-01	6.86E-03								
4,4'-DDT	5.00E-04	3.40E-01	5.89E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	1.73E-03								
Aroclor-1254	2.00E-05	2.00E+00	4.75E-02								
Aroclor-1260	2.00E-05	2.00E+00	3.26E-02								
Endosulfan I	6.00E-03	NA	1.71E-03								
Endrin	3.00E-04	NA	3.40E-03								
Endrin aldehyde	NA	NA	3.47E-03								
Endrin ketone	NA	NA	3.73E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	2.04E-03								
Metals											
Arsenic	3.00E-04	1.50E+00	6.64E+00								
Copper	4.00E-02	NA	4.58E+01								
Lead	NA	NA	2.85E+01								
Magnesium	NA	NA	1.27E+04								
Vanadium	7.00E-03	NA	2.77E+01								
Zinc	3.00E-01	NA	2.77E+02								
Total Hazard Quotient and Cancer Risk:											

Ingestion of Onsite Sediment Not Applicable for Future Recreational Visitor Child

Ingestion of Onsite Sediment Not Applicable for Future Construction Worker

Assumptions for Future Recreational Visitor (Child)

IR =	200	mg sed/day
CF =	1E-06	kg/mg
FI =	1	unitless
EF =	7	days/year
ED =	5	years
BW =	15	kg
AT (Nc) =	1825	days
AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available

TABLE L-6D (Sediment)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SEDIMENT
REASONABLE MAXIMUM EXPOSURE (RME)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Sediment, from Sediment EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Sediment (mg/kg)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	2.80E-01	NA	3.00E-03	5.28E-10		2E-09		4.93E-09		2E-08		
Acetone	1.00E-01	NA	2.32E-02	4.09E-09		4E-08		3.81E-08		4E-07		
Methyl chloride	NA	1.30E-02	9.84E-03		5.94E-10		8E-12		1.39E-09		2E-11	3E-11
Methyl ethyl ketone	6.00E-01	NA	1.01E-02	1.78E-09		3E-09		1.66E-08		3E-08		
Tetrachloroethene	1.00E-02	5.20E-02	4.00E-03	7.05E-10	2.42E-10	7E-08	1E-11	6.58E-09	5.64E-10	7E-07	3E-11	4E-11
Toluene	2.00E-01	NA	1.04E-02	1.83E-09		9E-09		1.71E-08		9E-08		
Trichloroethene	NA	1.10E-02	1.05E-02		6.34E-10		7E-12		1.48E-09		2E-11	2E-11
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	3.60E-02	6.34E-09		2E-07		5.92E-08		1E-06		
4-Chlorophenyl phenyl ether	NA	NA	6.00E-03									
4-Methylphenol	5.00E-03	NA	9.85E-02	1.73E-08		3E-06		1.62E-07		3E-05		
Acenaphthene	6.00E-02	NA	1.01E-01	1.78E-08		3E-07		1.66E-07		3E-06		
Acenaphthylene	NA	NA	1.50E-02									
Anthracene	3.00E-01	NA	1.14E-01	2.01E-08		7E-08		1.87E-07		6E-07		
Benzo(a)anthracene	NA	7.30E-01	2.86E-01		1.73E-08		1E-08		4.03E-08		3E-08	4E-08
Benzo(a)pyrene	NA	7.30E+00	2.99E-01		1.81E-08		1E-07		4.21E-08		3E-07	4E-07
Benzo(b)fluoranthene	NA	7.30E-01	3.89E-01		2.35E-08		2E-08		5.48E-08		4E-08	6E-08
Benzo(ghi)perylene	NA	NA	2.13E-01									
Benzo(k)fluoranthene	NA	7.30E-02	2.12E-01		1.28E-08		9E-10		2.99E-08		2E-09	3E-09
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.42E-01	2.50E-08	8.57E-09	1E-06	1E-10	2.33E-07	2.00E-08	1E-05	3E-10	4E-10
Butylbenzylphthalate	2.00E-01	NA	4.20E-02	7.40E-09		4E-08		6.90E-08		3E-07		
Carbazole	NA	2.00E-02	1.29E-01		7.79E-09		2E-10		1.82E-08		4E-10	5E-10
Chrysene	NA	7.30E-03	3.45E-01		2.08E-08		2E-10		4.86E-08		4E-10	5E-10
Di-n-butylphthalate	1.00E-01	NA	9.93E-02	1.75E-08		2E-07		1.63E-07		2E-06		
Di-n-octylphthalate	2.00E-02	NA	9.82E-02	1.73E-08		9E-07		1.61E-07		8E-06		
Dibenz(a,h)anthracene	NA	7.30E+00	1.13E-01		6.82E-09		5E-08		1.59E-08		1E-07	2E-07
Dibenzofuran	NA	NA	6.40E-02									
Diethyl phthalate	8.00E-01	NA	4.00E-02	7.05E-09		9E-09		6.58E-08		8E-08		
Fluoranthene	4.00E-02	NA	8.07E-01	1.42E-07		4E-06		1.33E-06		3E-05		
Fluorene	4.00E-02	NA	9.30E-02	1.64E-08		4E-07		1.53E-07		4E-06		
Hexachlorobenzene	8.00E-04	1.60E+00	6.20E-03	1.09E-09	3.74E-10	1E-06	6E-10	1.02E-08	8.74E-10	1E-05	1E-09	2E-09
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.94E-01		1.17E-08		9E-09		2.73E-08		2E-08	3E-08
Naphthalene	2.00E-02	NA	4.90E-02	8.63E-09		4E-07		8.05E-08		4E-06		
Phenanthrene	NA	NA	4.36E-01									
Pyrene	3.00E-02	NA	6.64E-01	1.17E-07		4E-06		1.09E-06		4E-05		
Pesticides/PCBs												
4,4'-DDD	NA	2.40E-01	6.14E-03		3.71E-10		9E-11		8.65E-10		2E-10	3E-10
4,4'-DDE	NA	3.40E-01	6.86E-03		4.14E-10		1E-10		9.67E-10		3E-10	5E-10
4,4'-DDT	5.00E-04	3.40E-01	5.89E-03	1.04E-09	3.56E-10	2E-06	1E-10	9.68E-09	8.30E-10	2E-05	3E-10	4E-10
Alpha-Chlordane	5.00E-04	3.50E-01	1.73E-03	3.05E-10	1.04E-10	6E-07	4E-11	2.84E-09	2.44E-10	6E-06	9E-11	1E-10
Aroclor-1254	2.00E-05	2.00E+00	4.75E-02	8.37E-09	2.87E-09	4E-04	6E-09	7.81E-08	6.69E-09	4E-03	1E-08	2E-08
Aroclor-1260	2.00E-05	2.00E+00	3.26E-02	5.74E-09	1.97E-09	3E-04	4E-09	5.36E-08	4.59E-09	3E-03	9E-09	1E-08
Endosulfan I	6.00E-03	NA	1.71E-03	3.01E-10		5E-08		2.81E-09		5E-07		
Endrin	3.00E-04	NA	3.40E-03	5.99E-10		2E-06		5.59E-09		2E-05		
Endrin aldehyde	NA	NA	3.47E-03									
Endrin ketone	NA	NA	3.73E-03									
Heptachlor epoxide	1.30E-05	9.10E+00	2.04E-03	3.59E-10	1.23E-10	3E-05	1E-09	3.35E-09	2.87E-10	3E-04	3E-09	4E-09
Metals												
Arsenic	3.00E-04	1.50E+00	6.64E+00	1.17E-06	4.01E-07	4E-03	6E-07	1.09E-05	9.36E-07	4E-02	1E-06	2E-06
Copper	4.00E-02	NA	4.58E+01	8.07E-06		2E-04		7.53E-05		2E-03		
Lead	NA	NA	2.85E+01									
Magnesium	NA	NA	1.27E+04									
Vanadium	7.00E-03	NA	2.77E+01	4.88E-06		7E-04		4.55E-05		7E-03		
Zinc	3.00E-01	NA	2.77E+02	4.88E-05		2E-04		4.55E-04		2E-03		
Total Hazard Quotient and Cancer Risk:						**6E-03**				**5E-02**		**3E-06**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
IR =	100	mg sed/day	IR =	200	mg sed/day
CF =	1E-06	kg/mg	CF =	1E-06	kg/mg
FI =	1	unitless	FI =	1	unitless
EF =	45	days/year	EF =	45	days/year
ED =	24	years	ED =	6	years
BW =	70	kg	BW =	15	kg
AT (Nc) =	8,760	days	AT (Nc) =	2,190	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
A= Information not available.

TABLE L-6E (Groundwater)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CW \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CW = Chemical Concentration in Groundwater, from Groundwater EPC Data
IR = Ingestion Rate
EF = Exposure Frequency
ED=Exposure Duration
BW=Bodyweight
AT=Averaging Time

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Groundwater (mg/liter)	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Future Construction Worker Intake (mg/kg-day) (Car)	Future Construction Worker Hazard Quotient	Future Construction Worker Cancer Risk
Volatile Organics																			
1,1,1-Trichloroethane	2.80E-01	NA	1.13E-03					7.74E-06		3E-05		2.89E-06		1E-05					
1,2-Dichloroethene (total)	9.00E-03	NA	1.79E-02					1.23E-04		1E-02		4.58E-05		5E-03					
Acetone	1.00E-01	NA	3.99E-03					2.73E-05		3E-04		1.02E-05		1E-04					
Toluene	2.00E-01	NA	1.16E-03					7.95E-06		4E-05		2.97E-06		1E-05					
Trichloroethene	NA	1.10E-02	2.41E-03						5.90E-06		6E-08		4.40E-07		5E-09				
Semivolatile Organics																			
1,4-Dichlorobenzene	NA	2.40E-02	9.30E-05						2.27E-07		5E-09		1.70E-08		4E-10				
Benzo(a)pyrene	NA	7.30E+00	9.70E-05						2.37E-07		2E-06		1.77E-08		1E-07				
Benzo(b)fluoranthene	NA	7.30E-01	7.60E-05						1.86E-07		1E-07		1.39E-08		1E-08				
Benzo(ghi)perylene	NA	NA	1.80E-04																
Benzo(k)fluoranthene	NA	7.30E-02	9.10E-05						2.23E-07		2E-08		1.66E-08		1E-09				
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	2.06E-04					1.41E-06	5.04E-07	7E-05	7E-09	5.27E-07	3.76E-08	3E-05	5E-10				
Butylbenzylphthalate	2.00E-01	NA	6.40E-05					4.38E-07		2E-06		1.64E-07		8E-07					
Di-n-butylphthalate	1.00E-01	NA	2.10E-04					1.44E-06		1E-05		5.37E-07		5E-06					
Di-n-octylphthalate	2.00E-02	NA	4.10E-04					2.81E-06		1E-04		1.05E-06		5E-05					
Diethyl phthalate	8.00E-01	NA	1.03E-03					7.05E-06		9E-06		2.63E-06		3E-06					
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.00E-04						2.45E-07		2E-07		1.83E-08		1E-08				
Phenol	6.00E-01	NA	4.30E-04					2.95E-06		5E-06		1.10E-06		2E-06					
Pyrene	3.00E-02	NA	8.00E-05					5.48E-07		2E-05		2.05E-07		7E-06					
Pesticides/PCBs																			
Beta-BHC	NA	1.80E+00	3.30E-06						1.08E-08		2E-08		8.05E-10		1E-09				
Gamma-Chlordane	5.00E-04	3.50E-01	4.41E-06					1.85E-08	6.60E-09	4E-05	2E-09	6.90E-09	4.93E-10	1E-05	2E-10				
Heptachlor	5.00E-04	4.50E+00	2.70E-06																
Metals																			
Barium	7.00E-02	NA	9.42E-02					1.08E-05		2E-04		4.01E-06		6E-05					
Cobalt	6.00E-02	NA	1.57E-03																
Total Hazard Quotient and Cancer Risk:										**1E-02**	**2E-06**			**5E-03**	**2E-07**				

Ingestion of Groundwater Not Applicable Current Site Worker

Ingestion of Groundwater Not Applicable for Future Construction Worker

Assumptions for Future Outdoor Park Worker

BW =	70	kg
IR =	1	liter/day
EF =	175	days/year
ED =	25	years
AT (Nc) =	9,125	days
AT (Car) =	25,550	days

Assumptions for Future Recreational Visitor (Child)

BW =	15	kg
IR =	1	liter/day
EF =	14	days/year
ED =	5	years
AT (Nc) =	1,825	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-6E (Groundwater)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CW \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CW = Chemical Concentration in Groundwater, from Groundwater EPC Data
IR = Ingestion Rate
EF = Exposure Frequency
ED=Exposure Duration
BW=Bodyweight
AT=Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Contribution to Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD	Carc. Slope Oral	EPC Groundwater	Future Resident (Adult)				Future Resident (Child)				Resident
				Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Total Lifetime Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/liter)	(Nc)	(Car)			(Nc)	(Car)			
Volatile Organics												
1,1,1-Trichloroethane	2.80E-01	NA	1.13E-03	3.10E-05		1E-04		7.22E-05		3E-04		
1,2-Dichloroethene (total)	9.00E-03	NA	1.79E-02	4.90E-04		5E-02		1.14E-03		1E-01		
Acetone	1.00E-01	NA	3.99E-03	1.09E-04		1E-03		2.55E-04		3E-03		
Toluene	2.00E-01	NA	1.16E-03	3.18E-05		2E-04		7.42E-05		4E-04		
Trichloroethene	NA	1.10E-02	2.41E-03		2.26E-05		2E-07		1.32E-05		1E-07	4E-07
Semivolatile Organics												
1,4-Dichlorobenzene	NA	2.40E-02	9.30E-05		8.74E-07		2E-08		5.10E-07		1E-08	3E-08
Benzo(a)pyrene	NA	7.30E+00	9.70E-05		9.11E-07		7E-06		5.32E-07		4E-06	1E-05
Benzo(b)fluoranthene	NA	7.30E-01	7.60E-05		7.14E-07		5E-07		4.16E-07		3E-07	8E-07
Benzo(ghi)perylene	NA	NA	1.80E-04									
Benzo(k)fluoranthene	NA	7.30E-02	9.10E-05		8.55E-07		6E-08		4.99E-07		4E-08	1E-07
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	2.06E-04	5.64E-06	1.94E-06	3E-04	3E-08	1.32E-05	1.13E-06	7E-04	2E-08	4E-08
Butylbenzylphthalate	2.00E-01	NA	6.40E-05	1.75E-06		9E-06		4.09E-06		2E-05		
Di-n-butylphthalate	1.00E-01	NA	2.10E-04	5.75E-06		6E-05		1.34E-05		1E-04		
Di-n-octylphthalate	2.00E-02	NA	4.10E-04	1.12E-05		6E-04		2.62E-05		1E-03		
Diethyl phthalate	8.00E-01	NA	1.03E-03	2.82E-05		4E-05		6.58E-05		8E-05		
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.00E-04		9.39E-07		7E-07		5.48E-07		4E-07	1E-06
Phenol	6.00E-01	NA	4.30E-04	1.18E-05		2E-05		2.75E-05		5E-05		
Pyrene	3.00E-02	NA	8.00E-05	2.19E-06		7E-05		5.11E-06		2E-04		
Pesticides/PCBs			3.30E-06									
Beta-BHC	NA	1.80E+00	4.41E-06		4.14E-08		7E-08		2.42E-08		4E-08	1E-07
Gamma-Chlordane	5.00E-04	3.50E-01	2.70E-06	7.40E-08	2.54E-08	1E-04	9E-09	1.73E-07	1.48E-08	3E-04	5E-09	1E-08
Heptachlor	5.00E-04	4.50E+00										
Metals			9.42E-02									
Barium	7.00E-02	NA	1.57E-03	4.30E-05		6E-04		1.00E-04		1E-03		
Cobalt	6.00E-02	NA										
			ERR									
Total Hazard Quotient and Cancer Risk:						**6E-02**				**1E-01**		**1E-05**

Assumptions for Future Resident (Adult)

BW =	70	kg
IR =	2	liters/day
EF =	350	days/year
ED =	24	years
AT (Nc) =	8,760	days
AT (Car) =	25,550	days

Assumptions for Future Resident (Child)

BW =	15	kg
IR =	1	liters/day
EF =	350	days/year
ED =	6	years
AT (Nc) =	2,190	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-7A (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CS = Chemical Concentration in Soil. Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	EPC from Total Soils	Current Site Worker				Future Outdoor Park Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	1.00E-01	NA	1.21E-02	1.07E-02	2.37E-10		2E-09		3.62E-09		4E-08	
Benzene	3.00E-03	2.90E-02	ND	6.00E-03								
Ethyl benzene	1.00E-01	NA	ND	9.00E-03								
Methyl butyl ketone	NA	NA	1.00E-03	1.00E-03								
Methylene chloride	6.00E-02	7.50E-03	1.00E-03	3.00E-03	1.96E-11	1.96E-12	3E-10	1E-14	2.99E-10	2.99E-11	5E-09	2E-13
Styrene	2.00E-01	NA	ND	7.31E-03								
Toluene	2.00E-01	NA	4.00E-03	7.16E-03	7.83E-11		4E-10		1.20E-09		6E-09	
Total Xylenes	2.00E+00	NA	ND	1.44E-02								
Trichloroethene	NA	1.10E-02	ND	7.32E-03								
Semivolatile Organics												
2,4-Dimethylphenol	2.00E-02	NA	ND	2.50E-02								
2-Methylnaphthalene	4.00E-02	NA	ND	5.00E-02								
4-Methylphenol	5.00E-03	NA	ND	7.78E-02								
Acenaphthene	6.00E-02	NA	ND	2.30E-02								
Acenaphthylene	NA	NA	ND	3.30E-02								
Anthracene	3.00E-01	NA	ND	8.06E-02								
Benzo(a)anthracene	NA	7.30E-01	2.70E-02	8.48E-02		5.28E-11		4E-11		8.08E-10		6E-10
Benzo(a)pyrene	NA	7.30E+00	2.70E-02	8.04E-02		5.28E-11		4E-10		8.08E-10		6E-09
Benzo(b)fluoranthene	NA	7.30E-01	3.60E-02	8.20E-02		7.05E-11		5E-11		1.08E-09		8E-10
Benzo(ghi)perylene	NA	NA	3.10E-02	8.83E-02								
Benzo(k)fluoranthene	NA	7.30E-02	2.60E-02	7.79E-02		5.09E-11		4E-12		7.78E-10		6E-11
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	7.32E-02	1.66E-01	1.43E-09	1.43E-10	7E-08	2E-12	2.19E-08	2.19E-09	1E-06	3E-11
Butylbenzylphthalate	2.00E-01	NA	2.29E-02	2.29E-02	4.48E-10		2E-09		6.86E-09		3E-08	
Carbazole	NA	2.00E-02	2.75E-02	2.75E-02		5.38E-11		1E-12		8.23E-10		2E-11
Chrysene	NA	7.30E-03	5.10E-02	8.98E-02		9.98E-11		7E-13		1.53E-09		1E-11
Di-n-butylphthalate	1.00E-01	NA	5.35E-02	1.10E-01	1.05E-09		1E-08		1.60E-08		2E-07	
Di-n-octylphthalate	2.00E-02	NA	2.34E-02	5.40E-02	4.58E-10		2E-08		7.01E-09		4E-07	
Dibenz(a,h)anthracene	NA	7.30E+00	2.75E-02	5.26E-02		5.38E-11		4E-10		8.23E-10		6E-09
Dibenzofuran	NA	NA	2.23E-02	2.23E-02								
Fluoranthene	4.00E-02	NA	2.44E-02	9.57E-02	4.77E-10		1E-08		7.31E-09		2E-07	
Fluorene	4.00E-02	NA	2.22E-02	4.98E-02	4.34E-10		1E-08		6.65E-09		2E-07	
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	2.85E-02	8.60E-02		5.58E-11		4E-11		8.53E-10		6E-10
Naphthalene	2.00E-02	NA	ND	9.76E-02								
Phenanthrene	NA	NA	2.38E-02	9.61E-02								
Phenol	6.00E-01	NA	ND	7.71E-02								
Pyrene	3.00E-02	NA	2.20E-02	1.02E-01	4.31E-10		1E-08		6.59E-09		2E-07	
Pesticides/PCBs												
4,4'-DDE	NA	3.40E-01	4.08E-03	3.86E-03		7.98E-12		3E-12		1.22E-10		4E-11
4,4'-DDT	5.00E-04	3.40E-01	6.09E-03	2.91E-03	1.19E-10	1.19E-11	2E-07	4E-12	1.82E-09	1.82E-10	4E-06	6E-11
Aldrin	3.00E-05	1.70E+01	ND	7.90E-04								
Alpha-BHC	NA	6.30E+00	ND	1.59E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	ND	1.26E-03								
Aroclor-1254	2.00E-05	2.00E+00	1.90E-01	2.09E-01	3.72E-09	3.72E-10	2E-04	7E-10	5.69E-08	5.69E-09	3E-03	1E-08
Aroclor-1260	2.00E-05	2.00E+00	ND	2.50E-02								
Beta-BHC	NA	1.80E+00	ND	1.18E-03								
Dieldrin	5.00E-05	1.60E+01	4.13E-03	3.82E-03	8.08E-11	8.08E-12	2E-06	1E-10	1.24E-09	1.24E-10	2E-05	2E-09
Endosulfan I	6.00E-03	NA	1.17E-03	1.16E-03	2.29E-11		4E-09		3.50E-10		6E-08	
Endosulfan II	6.00E-03	NA	2.14E-03	2.72E-03	4.19E-11		7E-09		6.41E-10		1E-07	
Endrin	3.00E-04	NA	2.43E-03	3.15E-03	4.76E-11		2E-07		7.28E-10		2E-06	
Endrin aldehyde	NA	NA	2.75E-03	2.37E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	3.76E-03	3.19E-03	7.36E-11	7.36E-12	1E-07	3E-12	1.13E-09	1.13E-10	2E-06	4E-11
Heptachlor	5.00E-04	4.50E+00	ND	1.45E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	1.85E-03	1.64E-03	3.62E-11	3.62E-12	3E-06	3E-11	5.54E-10	5.54E-11	4E-05	5E-10
Metals												
Copper	4.00E-02	NA	2.25E+01	3.33E+01	4.40E-07		1E-05		6.74E-06		2E-04	
Cyanide	2.00E-02	NA	6.25E-01	4.31E-01	1.22E-08		6E-07		1.87E-07		9E-06	
Selenium	5.00E-03	NA	7.39E-01	5.98E-01	1.45E-08		3E-06		2.21E-07		4E-05	
Thallium	8.00E-05	NA	1.07E+00	8.48E-01	2.09E-08		3E-04		3.20E-07		4E-03	
Total Hazard Quotient and Cancer Risk:							5E-04	2E-09			7E-03	3E-08

Assumptions for Current Site Worker		Assumptions for Future Outdoor Park Worker	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	CS =	EPC Surface Only
BW =	70 kg	BW =	70 kg
IR =	50 mg soil/day	IR =	50 mg soil/day
FI =	1 unitless	FI =	1 unitless
EF =	10 days/year	EF =	153 days/year
ED =	7 years	ED =	7 years
AT (Nc) =	2555 days	AT (Nc) =	2555 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-7A (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Surface Soil (mg/kg)	EPC from Total Soils (mg/kg)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Intake (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Intake (mg/kg-day) (Car)	Hazard Quotient	Cancer Risk
Volatile Organics												
Acetone	1.00E-01	NA	1.21E-02	1.07E-02	1.55E-09		2E-08		9.17E-09		9E-08	
Benzene	3.00E-03	2.90E-02	ND	6.00E-03					5.14E-09	7.35E-11	2E-06	2E-12
Ethyl benzene	1.00E-01	NA	ND	9.00E-03					7.71E-09		8E-08	
Methyl butyl ketone	NA	NA	1.00E-03	1.00E-03								
Methylene chloride	6.00E-02	7.50E-03	1.00E-03	3.00E-03	1.28E-10	1.83E-12	2E-09	1E-14	2.57E-09	3.67E-11	4E-08	3E-13
Styrene	2.00E-01	NA	ND	7.31E-03					6.27E-09		3E-08	
Toluene	2.00E-01	NA	4.00E-03	7.16E-03	5.11E-10		3E-09		6.14E-09		3E-08	
Total Xylenes	2.00E+00	NA	ND	1.44E-02					1.23E-08		6E-09	
Trichloroethene	NA	1.10E-02	ND	7.32E-03						8.96E-11		1E-12
Semivolatile Organics												
2,4-Dimethylphenol	2.00E-02	NA	ND	2.50E-02					2.14E-08		1E-06	
2-Methylnaphthalene	4.00E-02	NA	ND	5.00E-02					4.29E-08		1E-06	
4-Methylphenol	5.00E-03	NA	ND	7.78E-02					6.67E-08		1E-05	
Acenaphthene	6.00E-02	NA	ND	2.30E-02					1.97E-08		3E-07	
Acenaphthylene	NA	NA	ND	3.30E-02								
Anthracene	3.00E-01	NA	ND	8.06E-02					6.91E-08		2E-07	
Benzo(a)anthracene	NA	7.30E-01	2.70E-02	8.48E-02		4.93E-11		4E-11		1.04E-09		8E-10
Benzo(a)pyrene	NA	7.30E+00	2.70E-02	8.04E-02		4.93E-11		4E-10		9.84E-10		7E-09
Benzo(b)fluoranthene	NA	7.30E-01	3.60E-02	8.20E-02		6.58E-11		5E-11		1.00E-09		7E-10
Benzo(ghi)perylene	NA	NA	3.10E-02	8.83E-02								
Benzo(k)fluoranthene	NA	7.30E-02	2.60E-02	7.79E-02		4.75E-11		3E-12		9.54E-10		7E-11
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	7.32E-02	1.66E-01	9.36E-09	1.34E-10	5E-07	2E-12	1.42E-07	2.03E-09	7E-06	3E-11
Butylbenzylphthalate	2.00E-01	NA	2.29E-02	2.29E-02	2.93E-09		1E-08		1.96E-08		1E-07	
Carbazole	NA	2.00E-02	2.75E-02	2.75E-02		5.02E-11		1E-12		3.37E-10		7E-12
Chrysene	NA	7.30E-03	5.10E-02	8.98E-02		9.32E-11		7E-13		1.10E-09		8E-12
Di-n-butylphthalate	1.00E-01	NA	5.35E-02	1.10E-01	6.84E-09		7E-08		9.43E-08		9E-07	
Di-n-oetylphthalate	2.00E-02	NA	2.34E-02	5.40E-02	2.99E-09		1E-07		4.63E-08		2E-06	
Dibenz(a,h)anthracene	NA	7.30E+00	2.75E-02	5.26E-02		5.02E-11		4E-10		6.44E-10		5E-09
Dibenzofuran	NA	NA	2.23E-02	2.23E-02								
Fluoranthene	4.00E-02	NA	2.44E-02	9.57E-02	3.12E-09		8E-08		8.20E-08		2E-06	
Fluorene	4.00E-02	NA	2.22E-02	4.98E-02	2.84E-09		7E-08		4.27E-08		1E-06	
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	2.85E-02	8.60E-02		5.21E-11		4E-11		1.05E-09		8E-10
Naphthalene	2.00E-02	NA	ND	9.76E-02					8.37E-08		4E-06	
Phenanthrene	NA	NA	2.38E-02	9.61E-02								
Phenol	6.00E-01	NA	ND	7.71E-02					6.61E-08		1E-07	
Pyrene	3.00E-02	NA	2.20E-02	1.02E-01	2.81E-09		9E-08		8.74E-08		3E-06	
Pesticides/PCBs												
4,4'-DDE	NA	3.40E-01	4.08E-03	3.86E-03		7.45E-12		3E-12		4.73E-11		2E-11
4,4'-DDT	5.00E-04	3.40E-01	6.09E-03	2.91E-03	7.79E-10	1.11E-11	2E-06	4E-12	2.49E-09	3.56E-11	5E-06	1E-11
Aldrin	3.00E-05	1.70E+01	ND	7.90E-04					6.77E-10	9.67E-12	2E-05	2E-10
Alpha-BHC	NA	6.30E+00	ND	1.59E-03						1.95E-11		1E-10
Alpha-Chlordane	5.00E-04	3.50E-01	ND	1.26E-03					1.08E-09	1.54E-11	2E-06	5E-12
Aroclor-1254	2.00E-05	2.00E+00	1.90E-01	2.09E-01	2.43E-08	3.47E-10	1E-03	7E-10	1.79E-07	2.56E-09	9E-03	5E-09
Aroclor-1260	2.00E-05	2.00E+00	ND	2.50E-02					2.14E-08	3.06E-10	1E-03	6E-10
Beta-BHC	NA	1.80E+00	ND	1.18E-03						1.44E-11		3E-11
Dieldrin	5.00E-05	1.60E+01	4.13E-03	3.82E-03	5.28E-10	7.54E-12	1E-05	1E-10	3.27E-09	4.68E-11	7E-05	7E-10
Endosulfan I	6.00E-03	NA	1.17E-03	1.16E-03	1.50E-10		2E-08		9.94E-10		2E-07	
Endosulfan II	6.00E-03	NA	2.14E-03	2.72E-03	2.74E-10		5E-08		2.33E-09		4E-07	
Endrin	3.00E-04	NA	2.43E-03	3.15E-03	3.11E-10		1E-06		2.70E-09		9E-06	
Endrin aldehyde	NA	NA	2.75E-03	2.37E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	3.76E-03	3.19E-03	4.81E-10	6.87E-12	1E-06	2E-12	2.73E-09	3.91E-11	5E-06	1E-11
Heptachlor	5.00E-04	4.50E+00	ND	1.45E-03					1.24E-09	1.78E-11	2E-06	8E-11
Heptachlor epoxide	1.30E-05	9.10E+00	1.85E-03	1.64E-03	2.37E-10	3.38E-12	2E-05	3E-11	1.41E-09	2.01E-11	1E-04	2E-10
Metals												
Copper	4.00E-02	NA	2.25E+01	3.33E+01	2.88E-06		7E-05		2.85E-05		7E-04	
Cyanide	2.00E-02	NA	6.25E-01	4.31E-01	7.99E-08		4E-06		3.69E-07		2E-05	
Selenium	5.00E-03	NA	7.39E-01	5.98E-01	9.45E-08		2E-05		5.13E-07		1E-04	
Thallium	8.00E-05	NA	1.07E+00	8.48E-01	1.37E-07		2E-03		7.27E-07		9E-03	
Total Hazard Quotient and Cancer Risk:							**3E-03**	**2E-09**			**2E-02**	**2E-08**

Assumptions for Future Recreational Visitor (Child)

CF =	1E-06 kg/mg
CS =	EPC Surface Only
BW =	15 kg
IR =	100 mg soil/day
FI =	1 unitless
EF =	7 days/year
ED =	1 years
AT (Nc) =	365 days
AT (Car) =	25,550 days

Assumptions for Future Construction Worker

CF =	1E-06 kg/mg
CS =	EPC Surface and Subsurface
BW =	70 kg
IR =	100 mg soil/day
FI =	1 unitless
EF =	219 days/year
ED =	1 years
AT (Nc) =	365 days
AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-7A (Disposal Pits A/B)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom)
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose
Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Surface Soil (mg/kg)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics												
Acetone	1.00E-01	NA	1.21E-02	5.54E-09		6E-08		5.17E-08		5E-07		
Benzene	3.00E-03	2.90E-02	ND									
Ethyl benzene	1.00E-01	NA	ND									
Methyl butyl ketone	NA	NA	1.00E-03									
Methylene chloride	6.00E-02	7.50E-03	1.00E-03	4.58E-10	4.58E-11	8E-09	3E-13	4.27E-09	1.22E-10	7E-08	9E-13	1E-12
Styrene	2.00E-01	NA	ND									
Toluene	2.00E-01	NA	4.00E-03	1.83E-09		9E-09		1.71E-08		9E-08		
Total Xylenes	2.00E+00	NA	ND									
Trichloroethene	NA	1.10E-02	ND									
Semivolatile Organics												
2,4-Dimethylphenol	2.00E-02	NA	ND									
2-Methylnaphthalene	4.00E-02	NA	ND									
4-Methylphenol	5.00E-03	NA	ND									
Acenaphthene	6.00E-02	NA	ND									
Acenaphthylene	NA	NA	ND									
Anthracene	3.00E-01	NA	ND									
Benzo(a)anthracene	NA	7.30E-01	2.70E-02		1.24E-09		9E-10		3.30E-09		2E-09	3E-09
Benzo(a)pyrene	NA	7.30E+00	2.70E-02		1.24E-09		9E-09		3.30E-09		2E-08	3E-08
Benzo(b)fluoranthene	NA	7.30E-01	3.60E-02		1.65E-09		1E-09		4.40E-09		3E-09	4E-09
Benzo(ghi)perylene	NA	NA	3.10E-02									
Benzo(k)fluoranthene	NA	7.30E-02	2.60E-02		1.19E-09		9E-11		3.17E-09		2E-10	3E-10
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	7.32E-02	3.35E-08	3.35E-09	2E-06	5E-11	3.13E-07	8.94E-09	2E-05	1E-10	2E-10
Butylbenzylphthalate	2.00E-01	NA	2.29E-02	1.05E-08		5E-08		9.79E-08		5E-07		
Carbazole	NA	2.00E-02	2.75E-02		1.26E-09		3E-11		3.36E-09		7E-11	9E-11
Chrysene	NA	7.30E-03	5.10E-02		2.34E-09		2E-11		6.23E-09		5E-11	6E-11
Di-n-butylphthalate	1.00E-01	NA	5.35E-02	2.45E-08		2E-07		2.29E-07		2E-06		
Di-n-octylphthalate	2.00E-02	NA	2.34E-02	1.07E-08		5E-07		1.00E-07		5E-06		
Dibenz(a,h)anthracene	NA	7.30E+00	2.75E-02		1.26E-09		9E-09		3.36E-09		2E-08	3E-08
Dibenzofuran	NA	NA	2.23E-02									
Fluoranthene	4.00E-02	NA	2.44E-02	1.12E-08		3E-07		1.04E-07		3E-06		
Fluorene	4.00E-02	NA	2.22E-02	1.02E-08		3E-07		9.49E-08		2E-06		
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	2.85E-02		1.31E-09		1E-09		3.48E-09		3E-09	3E-09
Naphthalene	2.00E-02	NA	ND									
Phenanthrene	NA	NA	2.38E-02									
Phenol	6.00E-01	NA	ND									
Pyrene	3.00E-02	NA	2.20E-02	1.01E-08		3E-07		9.40E-08		3E-06		
Pesticides/PCBs												
4,4'-DDE	NA	3.40E-01	4.08E-03		1.87E-10		6E-11		4.98E-10		2E-10	2E-10
4,4'-DDT	5.00E-04	3.40E-01	6.09E-03	2.79E-09	2.79E-10	6E-06	9E-11	2.60E-08	7.44E-10	5E-05	3E-10	3E-10
Aldrin	3.00E-05	1.70E+01	ND									
Alpha-BHC	NA	6.30E+00	ND									
Alpha-Chlordane	5.00E-04	3.50E-01	ND									
Aroclor-1254	2.00E-05	2.00E+00	1.90E-01	8.70E-08	8.70E-09	4E-03	2E-08	8.12E-07	2.32E-08	4E-02	5E-08	6E-08
Aroclor-1260	2.00E-05	2.00E+00	ND									
Beta-BHC	NA	1.80E+00	ND									
Dieldrin	5.00E-05	1.60E+01	4.13E-03	1.89E-09	1.89E-10	4E-05	3E-09	1.77E-08	5.04E-10	4E-04	8E-09	1E-08
Endosulfan I	6.00E-03	NA	1.17E-03	5.36E-10		9E-08		5.00E-09		8E-07		
Endosulfan II	6.00E-03	NA	2.14E-03	9.80E-10		2E-07		9.15E-09		2E-06		
Endrin	3.00E-04	NA	2.43E-03	1.11E-09		4E-06		1.04E-08		3E-05		
Endrin aldehyde	NA	NA	2.75E-03									
Gamma-Chlordane	5.00E-04	3.50E-01	3.76E-03	1.72E-09	1.72E-10	3E-06	6E-11	1.61E-08	4.59E-10	3E-05	2E-10	2E-10
Heptachlor	5.00E-04	4.50E+00	ND									
Heptachlor epoxide	1.30E-05	9.10E+00	1.85E-03	8.47E-10	8.47E-11	7E-05	8E-10	7.91E-09	2.26E-10	6E-04	2E-09	3E-09
Metals												
Copper	4.00E-02	NA	2.25E+01	1.03E-05		3E-04		9.62E-05		2E-03		
Cyanide	2.00E-02	NA	6.25E-01	2.86E-07		1E-05		2.67E-06		1E-04		
Selenium	5.00E-03	NA	7.39E-01	3.38E-07		7E-05		3.16E-06		6E-04		
Thallium	8.00E-05	NA	1.07E+00	4.90E-07		6E-03		4.57E-06		6E-02		
Total Hazard Quotient and Cancer Risk:						**1E-02**				**1E-01**		**2E-07**

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	CS =	EPC Surface Only
BW =	70 kg	BW =	15 kg
IR =	50 mg soil/day	IR =	100 mg soil/day
FI =	1 unitless	FI =	1 unitless
EF =	234 days/year	EF =	234 days/year
ED =	7 years	ED =	2 years
AT (Nc) =	-2555 days	AT (Nc) =	730 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available
ND= Compound not detected

TABLE L-7B (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	EPC from Total Soils	Current Site Worker				Future Outdoor Park Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	1.00E-01	NA	9.95E-03	8.64E-03	1.95E-10		2E-09		2.98E-09		3E-08	
Chlorobenzene	2.00E-02	NA	ND	5.00E-03								
Methylene chloride	6.00E-02	7.50E-03	ND	7.84E-03								
Tetrachloroethene	1.00E-02	5.20E-02	ND	2.00E-03								
Toluene	2.00E-01	NA	ND	7.37E-03								
Total Xylenes	2.00E+00	NA	ND	6.32E-03								
Trichloroethene	NA	1.10E-02	ND	2.00E-03								
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	ND	2.20E-02								
Acenaphthene	6.00E-02	NA	ND	4.40E-02								
Anthracene	3.00E-01	NA	4.60E-03	6.30E-02	9.00E-11		3E-10		1.38E-09		5E-09	
Benzo(a)anthracene	NA	7.30E-01	2.60E-02	1.08E-01		5.09E-11		4E-11		7.78E-10		6E-10
Benzo(a)pyrene	NA	7.30E+00	2.00E-02	8.61E-02		3.91E-11		3E-10		5.99E-10		4E-09
Benzo(b)fluoranthene	NA	7.30E-01	2.80E-02	1.07E-01		5.48E-11		4E-11		8.38E-10		6E-10
Benzo(ghi)perylene	NA	NA	2.65E-02	8.01E-02								
Benzo(k)fluoranthene	NA	7.30E-02	2.75E-02	1.05E-01		5.38E-11		4E-12		8.23E-10		6E-11
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	5.80E-03	1.60E-02	1.14E-10	1.14E-11	6E-09	2E-13	1.74E-09	1.74E-10	9E-08	2E-12
Butylbenzylphthalate	2.00E-01	NA	ND	3.00E-02								
Carbazole	NA	2.00E-02	2.37E-02	4.00E-02		4.64E-11		9E-13		7.10E-10		1E-11
Chrysene	NA	7.30E-03	2.23E-02	1.13E-01		4.36E-11		3E-13		6.68E-10		5E-12
Di-n-butylphthalate	1.00E-01	NA	4.50E-03	5.20E-02	8.81E-11		9E-10		1.35E-09		1E-08	
Di-n-octylphthalate	2.00E-02	NA	7.30E-03	2.00E-02	1.43E-10		7E-09		2.19E-09		1E-07	
Dibenz(a,h)anthracene	NA	7.30E+00	2.33E-02	8.68E-02		4.56E-11		3E-10		6.98E-10		5E-09
Fluoranthene	4.00E-02	NA	3.61E-02	1.06E-01	7.06E-10		2E-08		1.08E-08		3E-07	
Fluorene	4.00E-02	NA	ND	3.50E-02								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	2.65E-02	9.27E-02		5.19E-11		4E-11		7.93E-10		6E-10
N-Nitrosodiphenylamine	NA	4.90E-03	ND	1.49E-01								
Naphthalene	2.00E-02	NA	ND	1.30E-02								
Phenanthrene	NA	NA	2.10E-02	1.06E-01								
Pyrene	3.00E-02	NA	3.60E-02	1.03E-01	7.05E-10		2E-08		1.08E-08		4E-07	
Dibenzofuran	NA	NA	ND	4.10E-03								
Pesticides/PCBs												
4,4'-DDD	NA	2.40E-01	4.43E-03	2.56E-03		8.67E-12		2E-12		1.33E-10		3E-11
4,4'-DDE	NA	3.40E-01	ND	2.26E-03								
4,4'-DDT	5.00E-04	3.40E-01	2.13E-03	2.33E-03	4.17E-11	4.17E-12	8E-08	1E-12	6.38E-10	6.38E-11	1E-06	2E-11
Alpha-BHC	NA	6.30E+00	ND	1.16E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	ND	1.07E-03								
Aroclor-1254	2.00E-05	2.00E+00	ND	2.03E-02								
Aroclor-1260	2.00E-05	2.00E+00	ND	2.03E-02								
Beta-BHC	NA	1.80E+00	ND	1.06E-03								
Gamma-Chlordane	5.00E-04	3.50E-01	ND	1.07E-03								
Heptachlor	5.00E-04	4.50E+00	ND	1.21E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	ND	1.07E-03								
Metals												
Calcium	NA	NA	7.59E+01	9.59E+04								
Selenium	5.00E-03	NA	7.54E-04	7.18E-01	1.48E-11		3E-09		2.26E-10		5E-08	
Thallium	8.00E-05	NA	1.67E-03	8.77E-01	3.27E-11		4E-07		5.00E-10		6E-06	
Cyanide	2.00E-02	NA	ND	3.53E-01								
Total Hazard Quotient and Cancer Risk:							**6E-07**	**7E-10**			**8E-06**	**1E-08**

Assumptions for Current Site Worker		Assumptions for Future Outdoor Park Worker	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	CS =	EPC Surface Only
BW =	70 kg	BW =	70 kg
IR =	50 mg soil/day	IR =	50 mg soil/day
FI =	1 unitless	FI =	1 unitless
EF =	10 days/year	EF =	153 days/year
ED =	7 years	ED =	7 years
AT (Nc) =	2555 days	AT (Nc) =	2555 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-7B (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	EPC from Total Soils	Future Recreational Visitor (Child)				Future Construction Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	1.00E-01	NA	9.95E-03	8.64E-03	1.27E-09		1E-08		7.41E-09		7E-08	
Chlorobenzene	2.00E-02	NA	ND	5.00E-03					4.29E-09		2E-07	
Methylene chloride	6.00E-02	7.50E-03	ND	7.84E-03					6.72E-09	9.60E-11	1E-07	7E-13
Tetrachloroethene	1.00E-02	5.20E-02	ND	2.00E-03					1.71E-09	2.45E-11	2E-07	1E-12
Toluene	2.00E-01	NA	ND	7.37E-03					6.32E-09		3E-08	
Total Xylenes	2.00E+00	NA	ND	6.32E-03					5.42E-09		3E-09	
Trichloroethene	NA	1.10E-02	ND	2.00E-03						2.45E-11		3E-13
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	ND	2.20E-02					1.89E-08		5E-07	
Acenaphthene	6.00E-02	NA	ND	4.40E-02					3.77E-08		6E-07	
Anthracene	3.00E-01	NA	4.60E-03	6.30E-02	5.88E-10		2E-09		5.40E-08		2E-07	
Benzo(a)anthracene	NA	7.30E-01	2.60E-02	1.08E-01		4.75E-11		3E-11		1.32E-09		1E-09
Benzo(a)pyrene	NA	7.30E+00	2.00E-02	8.61E-02		3.65E-11		3E-10		1.05E-09		8E-09
Benzo(b)fluoranthene	NA	7.30E 01	2.80E-02	1.07E-01		5.11E-11		4E-11		1.31E-09		1E-09
Benzo(ghi)perylene	NA	NA	2.65E-02	8.01E-02								
Benzo(k)fluoranthene	NA	7.30E-02	2.75E-02	1.05E-01		5.02E-11		4E-12		1.29E-09		9E-11
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	5.80E-03	1.60E-02	7.42E-10	1.06E-11	4E-08	1E-13	1.37E-08	1.96E-10	7E-07	3E-12
Butylbenzylphthalate	2.00E-01	NA	ND	3.00E-02					2.57E-08		1E-07	
Carbazole	NA	2.00E-02	2.37E-02	4.00E-02		4.33E-11		9E-13		4.90E-10		1E-11
Chrysene	NA	7.30E-03	2.23E-02	1.13E-01		4.07E-11		3E-13		1.38E-09		1E-11
Di-n-butylphthalate	1.00E-01	NA	4.50E-03	5.20E-02	5.75E-10		6E-09		4.46E-08		4E-07	
Di-n-octylphthalate	2.00E-02	NA	7.30E-03	2.00E-02	9.33E-10		5E-08		1.71E-08		9E-07	
Dibenz(a,h)anthracene	NA	7.30E+00	2.33E-02	8.68E-02		4.26E-11		3E-10		1.06E-09		8E-09
Fluoranthene	4.00E-02	NA	3.61E-02	1.06E-01	4.62E-09		1E-07		9.09E-08		2E-06	
Fluorene	4.00E-02	NA	ND	3.50E-02					3.00E-08		8E-07	
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	2.65E-02	9.27E-02		4.84E-11		4E-11		1.14E-09		8E-10
N-Nitrosodiphenylamine	NA	4.90E-03	ND	1.49E-01						1.82E-09		9E-12
Naphthalene	2.00E-02	NA	ND	1.30E-02					1.11E-08		6E-07	
Phenanthrene	NA	NA	2.10E-02	1.06E-01								
Pyrene	3.00E-02	NA	3.60E-02	1.03E-01	4.60E-09		2E-07		8.83E-08		3E-06	
Dibenzofuran	NA	NA	ND	4.10E-03								
Pesticides/PCBs												
4,4'-DDD	NA	2.40E-01	4.43E-03	2.56E-03		8.09E-12		2E-12		3.13E-11		8E-12
4,4'-DDE	NA	3.40E-01	ND	2 26E-03						2.77E-11		9E-12
4,4'-DDT	5.00E-04	3.40E-01	2.13E-03	2.33E-03	2.72E-10	3.89E-12	5E-07	1E-12	2.00E-09	2.85E-11	4E-06	1E-11
Alpha-BHC	NA	6.30E+00	ND	1.16E-03						1.42E-11		9E-11
Alpha-Chlordane	5.00E-04	3.50E-01	ND	1.07E-03					9.17E-10	1.31E-11	2E-06	5E-12
Aroclor-1254	2.00E-05	2.00E+00	ND	2.03E-02					1.74E-08	2.49E-10	9E-04	5E-10
Aroclor-1260	2.00E-05	2.00E+00	ND	2.03E-02					1.74E-08	2.49E-10	9E-04	5E-10
Beta-BHC	NA	1.80E+00	ND	1.06E-03						1.30E-11		2E-11
Gamma-Chlordane	5.00E-04	3.50E-01	ND	1.07E-03					9.17E-10	1.31E-11	2E-06	5E-12
Heptachlor	5.00E-04	4.50E+00	ND	1.21E-03					1.04E-09	1.48E-11	2E-06	7E-11
Heptachlor epoxide	1.30E-05	9.10E+00	ND	1.07E-03					9.17E-10	1.31E-11	7E-05	1E-10
Metals												
Calcium	NA	NA	7.59E+01	9.59E+04								
Selenium	5.00E-03	NA	7 54E-04	7.18E-01	9.64E-11		2E-08		6.15E-07		1E-04	
Thallium	8.00E-05	NA	1.67E-03	8.77E-01	2.14E-10		3E-06		7.52E-07		9E-03	
Cyanide	2.00E-02	NA	ND	3.53E-01					3.03E-07		2E-05	
Total Hazard Quotient and Cancer Risk:							**4E-06**	**7E-10**			**1E-02**	**2E-08**

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	CS =	EPC Surface and Subsurface
BW =	15 kg	BW =	70 kg
IR =	100 mg soil/day	IR =	100 mg soil/day
FI =	1 unitless	FI =	1 unitless
EF =	7 days/year	EF =	219 days/year
ED =	1 years	ED =	1 years
AT (Nc) =	365 days	AT (Nc) =	365 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-7B (Disposal Pit C)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Surface Soil (mg/kg)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics												
Acetone	1.00E-01	NA	9.95E-03	4.56E-09		5E-08		4.25E-08		4E-07		
Chlorobenzene	2.00E-02	NA	ND									
Methylene chloride	6.00E-02	7.50E-03	ND									
Tetrachloroethene	1.00E-02	5.20E-02	ND									
Toluene	2.00E-01	NA	ND									
Total Xylenes	2.00E+00	NA	ND									
Trichloroethene	NA	1.10E-02	ND									
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	ND									
Acenaphthene	6.00E-02	NA	ND									
Anthracene	3.00E-01	NA	4.60E-03	2.11E-09		7E-09		1.97E-08		7E-08		
Benzo(a)anthracene	NA	7.30E-01	2.60E-02		1.19E-09		9E-10		3.17E-09		2E-09	3E-09
Benzo(a)pyrene	NA	7.30E+00	2.00E-02		9.16E-10		7E-09		2.44E-09		2E-08	2E-08
Benzo(b)fluoranthene	NA	7.30E-01	2.80E-02		1.28E-09		9E-10		3.42E-09		2E-09	3E-09
Benzo(ghi)perylene	NA	NA	2.65E-02									
Benzo(k)fluoranthene	NA	7.30E-02	2.75E-02		1.26E-09		9E-11		3.36E-09		2E-10	3E-10
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	5.80E-03	2.66E-09	2.66E-10	1E-07	4E-12	2.48E-08	7.08E-10	1E-06	1E-11	1E-11
Butylbenzylphthalate	2.00E-01	NA	ND									
Carbazole	NA	2.00E-02	2.37E-02		1.09E-09		2E-11		2.89E-09		6E-11	8E-11
Chrysene	NA	7.30E-03	2.23E-02		1.02E-09		7E-12		2.72E-09		2E-11	3E-11
Di-n-butylphthalate	1.00E-01	NA	4.50E-03	2.06E-09		2E-08		1.92E-08		2E-07		
Di-n-octylphthalate	2.00E-02	NA	7.30E-03	3.34E-09		2E-07		3.12E-08		2E-06		
Dibenz(a,h)anthracene	NA	7.30E+00	2.33E-02		1.07E-09		8E-09		2.85E-09		2E-08	3E-08
Fluoranthene	4.00E-02	NA	3.61E-02	1.65E-08		4E-07		1.54E-07		4E-06		
Fluorene	4.00E-02	NA	ND									
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	2.65E-02		1.21E-09		9E-10		3.24E-09		2E-09	3E-09
N-Nitrosodiphenylamine	NA	4.90E-03	ND									
Naphthalene	2.00E-02	NA	ND									
Phenanthrene	NA	NA	2.10E-02									
Pyrene	3.00E-02	NA	3.60E-02	1.65E-08		5E-07		1.54E-07		5E-06		
Dibenzofuran	NA	NA	ND									
Pesticides/PCBs												
4,4'-DDD	NA	2.40E-01	4.43E-03		2.03E-10		5E-11		5.41E-10		1E-10	2E-10
4,4'-DDE	NA	3.40E-01	ND									
4,4'-DDT	5.00E-04	3.40E-01	2.13E-03	9.75E-10	9.75E-11	2E-06	3E-11	9.10E-09	2.60E-10	2E-05	9E-11	1E-10
Alpha-BHC	NA	6.30E+00	ND									
Alpha-Chlordane	5.00E-04	3.50E-01	ND									
Aroclor-1254	2.00E-05	2.00E+00	ND									
Aroclor-1260	2.00E-05	2.00E+00	ND									
Beta-BHC	NA	1.80E+00	ND									
Gamma-Chlordane	5.00E-04	3.50E-01	ND									
Heptachlor	5.00E-04	4.50E+00	ND									
Heptachlor epoxide	1.30E-05	9.10E+00	ND									
Metals												
Calcium	NA	NA	7.59E+01									
Selenium	5.00E-03	NA	7.54E-04	3.45E-10		7E-08		3.22E-09		6E-07		
Thallium	8.00E-05	NA	1.67E-03	7.65E-10		1E-05		7.14E-09		9E-05		
Cyanide	2.00E-02	NA	ND									
Total Hazard Quotient and Cance. Risk:						**1E-05**				**1E-04**		**6E-08**

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	CS =	EPC Surface Only
BW =	70 kg	BW =	15 kg
IR =	50 mg soil/day	IR =	100 mg soil/day
FI =	1 unitless	FI =	1 unitless
EF =	234 days/year	EF =	234 days/year
ED =	7 years	ED =	2 years
AT (Nc) =	2555 days	AT (Nc) =	730 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-7C (Former Dry Waste Disposal Pit)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	EPC from Total Soils	Current Site Worker				Future Outdoor Park Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	1.00E-01	NA	6.23E-03	1.10E-02	1.22E-10		1E-09		1.87E-09		2E-08	
Benzene	3.00E-03	2.90E-02	ND	2.00E-03								
Carbon disulfide	1.00E-01	NA	ND	3.00E-03								
Methyl ethyl ketone	6.00E-01	NA	ND	3.00E-03								
Methylene chloride	6.00E-02	7.50E-03	ND	2.00E-03								
Toluene	2.00E-01	NA	8.02E-03	6.18E-03	1.57E-10		8E-10		2.40E-09		1E-08	
Semivolatile Organics												
1,2,4-Trichlorobenzene	1.00E-02	NA	2.35E-02	2.35E-02	4.60E-10		5E-08		7.04E-09		7E-07	
2-Methylnaphthalene	4.00E-02	NA	5.50E-03	5.50E-03	1.08E-10		3E-09		1.65E-09		4E-08	
Anthracene	3.00E-01	NA										
Benzo(a)anthracene	NA	7.30E-01	2.60E-02	2.60E-02		5.09E-11		4E-11		7.78E-10		6E-10
Benzo(a)pyrene	NA	7.30E+00	2.00E-02	2.00E-02		3.91E-11		3E-10		5.99E-10		4E-09
Benzo(b)fluoranthene	NA	7.30E-01	3.40E-02	3.40E-02		6.65E-11		5E-11		1.02E-09		7E-10
Benzo(ghi)perylene	NA	NA	2.35E-02	2.35E-02								
Benzo(k)fluoranthene	NA	7.30E-02	2.00E-02	2.00E-02		3.91E-11		3E-12		5.99E-10		4E-11
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	3.60E-02	7.02E-02	7.05E-10	7.05E-11	4E-08	1E-12	1.08E-08	1.08E-09	5E-07	2E-11
Butylbenzylphthalate	2.00E-01	NA	5.90E-03	7.20E-03	1.15E-10		6E-10		1.77E-09		9E-09	
Carbazole	NA	2.00E-02										
Chrysene	NA	7.30E-03	3.20E-02	3.20E-02		6.26E-11		5E-13		9.58E-10		7E-12
Di-n-butylphthalate	1.00E-01	NA	2.01E-02	1.19E-01	3.93E-10		4E-09		6.02E-09		6E-08	
Di-n-octylphthalate	2.00E-02	NA	1.50E-02	3.40E-02	2.94E-10		1E-08		4.49E-09		2E-07	
Dibenzofuran	NA	NA										
Diethyl phthalate	8.00E-01	NA	1.10E-02	1.10E-02	2.15E-10		3E-10		3.29E-09		4E-09	
Fluoranthene	4.00E-02	NA	5.55E-02	6.40E-02	1.09E-09		3E-08		1.66E-08		4E-07	
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	6.15E-03	6.10E-03		1.20E-11		9E-12		1.84E-10		1E-10
Naphthalene	2.00E-02	NA	5.40E-03	5.40E-03	1.06E-10		5E-09		1.62E-09		8E-08	
Phenanthrene	NA	NA	3.40E-02	3.40E-02								
Pyrene	3.00E-02	NA	3.07E-02	5.10E-02	6.01E-10		2E-08		9.19E-09		3E-07	
Pesticides/PCBs												
4,4'-DDE	NA	3.40E-01	2.00E-03	1.92E-03		3.91E-12		1E-12		5.99E-11		2E-11
4,4'-DDT	5.00E-04	3.40E-01	2.54E-03	1.98E-03	4.97E-11	4.97E-12	1E-07	2E-12	7.61E-10	7.61E-11	2E-06	3E-11
Aroclor-1242	2.00E-05	2.00E+00	1.70E-02	1.70E-02	3.33E-10	3.33E-11	2E-05	7E-11	5.09E-09	5.09E-10	3E-04	1E-09
Aroclor-1254	2.00E-05	2.00E+00	2.08E-02	1.93E-02	4.07E-10	4.07E-11	2E-05	8E-11	6.23E-09	6.23E-10	3E-04	1E-09
Aroclor-1260	2.00E-05	2.00E+00	2.13E-02	1.93E-02	4.17E-10	4.17E-11	2E-05	8E-11	6.38E-09	6.38E-10	3E-04	1E-09
Endrin aldehyde	NA	NA	2.06E-03	1.93E-03								
Metals												
Calcium	NA	NA	8.04E+04	1.11E+05								
Copper	4.00E-02	NA	2.33E+01	2.31E+01	4.56E-07		1E-05		6.98E-06		2E-04	
Magnesium	NA	NA	1.37E+04	1.52E+04								
Selenium	5.00E-03	NA	7.56E-01	6.18E-01	1.48E-08		3E-06		2.26E-07		5E-05	
Thallium	8.00E-05	NA	1.16E+00	8.40E-01	2.27E-08		3E-04		3.47E-07		4E-03	
Total Hazard Quotient and Cancer Risk:							**4E-04**	**6E-10**			**5E-03**	**9E-09**

Assumptions for Current Site Worker		Assumptions for Future Outdoor Park Worker	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	CS =	EPC Surface Only
BW =	70 kg	BW =	70 kg
IR =	50 mg soil/day	IR =	50 mg soil/day
FI =	1 unitless	FI =	1 unitless
EF =	10 days/year	EF =	153 days/year
ED =	7 years	ED =	7 years
AT (Nc) =	2555 days	AT (Nc) =	2555 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-7C (Former Dry Waste Disposal Pit)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	EPC from Total Soils	Future Recreational Visitor (Child)				Future Construction Worker			
					Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics												
Acetone	1.00E-01	NA	6.23E-03	1.10E-02	7.97E-10		8E-09		9.43E-09		9E-08	
Benzene	3.00E-03	2.90E-02	ND	2.00E-03					1.71E-09	2.45E-11	6E-07	7E-13
Carbon disulfide	1.00E-01	NA	ND	3.00E-03					2.57E-09		3E-08	
Methyl ethyl ketone	6.00E-01	NA	ND	3.00E-03					2.57E-09		4E-09	
Methylene chloride	6.00E-02	7.50E-03	ND	2.00E-03					1.71E-09	2.45E-11	3E-08	2E-13
Toluene	2.00E-01	NA	8.02E-03	6.18E-03	1.03E-09		5E-09		5.30E-09		3E-08	
Semivolatile Organics												
1,2,4-Trichlorobenzene	1.00E-02	NA	2.35E-02	2.35E-02	3.00E-09		3E-07		2.01E-08		2E-06	
2-Methylnaphthalene	4.00E-02	NA	5.50E-03	5.50E-03	7.03E-10		2E-08		4.71E-09		1E-07	
Anthracene	3.00E-01	NA										
Benzo(a)anthracene	NA	7.30E-01	2.60E-02	2.60E-02		4.75E-11		3E-11		3.18E-10		2E-10
Benzo(a)pyrene	NA	7.30E+00	2.00E-02	2.00E-02		3.65E-11		3E-10		2.45E-10		2E-09
Benzo(b)fluoranthene	NA	7.30E-01	3.40E-02	3.40E-02		6.21E-11		5E-11		4.16E-10		3E-10
Benzo(ghi)perylene	NA	NA	2.35E-02	2.35E-02								
Benzo(k)fluoranthene	NA	7.30E-02	2.00E-02	2.00E-02		3.65E-11		3E-12		2.45E-10		2E-11
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	3.60E-02	7.02E-02	4.60E-09	6.58E-11	2E-07	9E-13	6.02E-08	8.60E-10	3E-06	1E-11
Butylbenzylphthalate	2.00E-01	NA	5.90E-03	7.20E-03	7.54E-10		4E-09		6.17E-09		3E-08	
Carbazole	NA	2.00E-02										
Chrysene	NA	7.30E-03	3.20E-02	3.20E-02		5.84E-11		4E-13		3.92E-10		3E-12
Di-n-butylphthalate	1.00E-01	NA	2.01E-02	1.19E-01	2.57E-09		3E-08		1.02E-07		1E-06	
Di-n-octylphthalate	2.00E-02	NA	1.50E-02	3.40E-02	1.92E-09		1E-07		2.91E-08		1E-06	
Dibenzofuran	NA	NA										
Diethyl phthalate	8.00E-01	NA	1.10E-02	1.10E-02	1.41E-09		2E-09		9.43E-09		1E-08	
Fluoranthene	4.00E-02	NA	5.55E-02	6.40E-02	7.10E-09		2E-07		5.49E-08		1E-06	
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	6.15E-03	6.10E-03		1.12E-11		8E-12		7.47E-11		5E-11
Naphthalene	2.00E-02	NA	5.40E-03	5.40E-03	6.90E-10		3E-08		4.63E-09		2E-07	
Phenanthrene	NA	NA	3.40E-02	3.40E-02								
Pyrene	3.00E-02	NA	3.07E-02	5.10E-02	3.93E-09		1E-07		4.37E-08		1E-06	
Pesticides/PCBs												
4,4'-DDE	NA	3.40E-01	2.00E-03	1.92E-03		3.65E-12		1E-12		2.35E-11		8E-12
4,4'-DDT	5.00E-04	3.40E-01	2.54E-03	1.98E-03	3.25E-10	4.64E-12	6E-07	2E-12	1.70E-09	2.42E-11	3E-06	8E-12
Aroclor-1242	2.00E-05	2.00E+00	1.70E-02	1.70E-02	2.17E-09	3.11E-11	1E-04	6E-11	1.46E-08	2.08E-10	7E-04	4E-10
Aroclor-1254	2.00E-05	2.00E+00	2.08E-02	1.93E-02	2.66E-09	3.80E-11	1E-04	8E-11	1.65E-08	2.36E-10	8E-04	5E-10
Aroclor-1260	2.00E-05	2.00E+00	2.13E-02	1.93E-02	2.72E-09	3.89E-11	1E-04	8E-11	1.65E-08	2.36E-10	8E-04	5E-10
Endrin aldehyde	NA	NA	2.06E-03	1.93E-03								
Metals												
Calcium	NA	NA	8.04E+04	1.11E+05								
Copper	4.00E-02	NA	2.33E+01	2.31E+01	2.98E-06		7E-05		1.98E-05		5E-04	
Magnesium	NA	NA	1.37E+04	1.52E+04								
Selenium	5.00E-03	NA	7.56E-01	6.18E-01	9.67E-08		2E-05		5.30E-07		1E-04	
Thallium	8.00E-05	NA	1.16E+00	8.40E-01	1.48E-07		2E-03		7.20E-07		9E-03	
Total Hazard Quotient and Cancer Risk:							**2E-03**	**6E-10**			**1E-02**	**4E-09**

Assumptions for Future Recreational Visitor (Child)		Assumptions for Future Construction Worker	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	CS =	EPC Surface and Subsurface
BW =	15 kg	BW =	70 kg
IR =	100 mg soil/day	IR =	100 mg soil/day
FI =	1 unitless	FI =	1 unitless
EF =	7 days/year	EF =	219 days/year
ED =	1 years	ED =	1 years
AT (Nc) =	365 days	AT (Nc) =	365 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-7C (Former Dry Waste Disposal Pit)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SOIL
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Soil, Calculated from Soil EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD	Carc. Slope Oral	EPC Surface Soil	Future Resident (Adult)				Future Resident (Child)				Resident
				Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Total Lifetime Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/kg)	(Nc)	(Car)			(Nc)	(Car)			
Volatile Organics												
Acetone	1.00E-01	NA	6.23E-03	2.85E-09		3E-08		2.66E-08		3E-07		
Benzene	3.00E-03	2.90E-02	ND									
Carbon disulfide	1.00E-01	NA	ND									
Methyl ethyl ketone	6.00E-01	NA	ND									
Methylene chloride	6.00E-02	7.50E-03	ND									
Toluene	2.00E-01	NA	8.02E-03	3.67E-09		2E-08		3.43E-08		2E-07		
Semivolatile Organics												
1,2,4-Trichlorobenzene	1.00E-02	NA	2.35E-02	1.08E-08		1E-06		1.00E-07		1E-05		
2-Methylnaphthalene	4.00E-02	NA	5.50E-03	2.52E-09		6E-08		2.35E-08		6E-07		
Anthracene	3.00E-01	NA										
Benzo(a)anthracene	NA	7.30E-01	2.60E-02		1.19E-09		9E-10		3.17E-09		2E-09	3E-09
Benzo(a)pyrene	NA	7.30E+00	2.00E-02		9.16E-10		7E-09		2.44E-09		2E-08	2E-08
Benzo(b)fluoranthene	NA	7.30E-01	3.40E-02		1.56E-09		1E-09		4.15E-09		3E-09	4E-09
Benzo(ghi)perylene	NA	NA	2.35E-02									
Benzo(k)fluoranthene	NA	7.30E-02	2.00E-02		9.16E-10		7E-11		2.44E-09		2E-10	2E-10
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	3.60E-02	1.65E-08	1.65E-09	8E-07	2E-11	1.54E-07	4.40E-09	8E-06	6E-11	8E-11
Butylbenzylphthalate	2.00E-01	NA	5.90E-03	2.70E-09		1E-08		2.52E-08		1E-07		
Carbazole	NA	2.00E-02										
Chrysene	NA	7.30E-03	3.20E-02		1.47E-09		1E-11		3.91E-09		3E-11	4E-11
Di-n-butylphthalate	1.00E-01	NA	2.01E-02	9.20E-09		9E-08		8.59E-08		9E-07		
Di-n-octylphthalate	2.00E-02	NA	1.50E-02	6.87E-09		3E-07		6.41E-08		3E-06		
Dibenzofuran	NA	NA										
Diethyl phthalate	8.00E-01	NA	1.10E-02	5.04E-09		6E-09		4.70E-08		6E-08		
Fluoranthene	4.00E-02	NA	5.55E-02	2.54E-08		6E-07		2.37E-07		6E-06		
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	6.15E-03		2.82E-10		2E-10		7.51E-10		5E-10	8E-10
Naphthalene	2.00E-02	NA	5.40E-03	2.47E-09		1E-07		2.31E-08		1E-06		
Phenanthrene	NA	NA	3.40E-02									
Pyrene	3.00E-02	NA	3.07E-02	1.41E-08		5E-07		1.31E-07		4E-06		
Pesticides/PCBs												
4,4'-DDE	NA	3.40E-01	2.00E-03		9.16E-11		3E-11		2.44E-10		8E-11	1E-10
4,4'-DDT	5.00E-04	3.40E-01	2.54E-03	1.16E-09	1.16E-10	2E-06	4E-11	1.09E-08	3.10E-10	2E-05	1E-10	1E-10
Aroclor-1242	2.00E-05	2.00E+00	1.70E-02	7.78E-09	7.78E-10	4E-04	2E-09	7.27E-08	2.08E-09	4E-03	4E-09	6E-09
Aroclor-1254	2.00E-05	2.00E+00	2.08E-02	9.52E-09	9.52E-10	5E-04	2E-09	8.89E-08	2.54E-09	4E-03	5E-09	7E-09
Aroclor-1260	2.00E-05	2.00E+00	2.13E-02	9.75E-09	9.75E-10	5E-04	2E-09	9.10E-08	2.60E-09	5E-03	5E-09	7E-09
Endrin aldehyde	NA	NA	2.06E-03									
Metals												
Calcium	NA	NA	8.04E+04									
Copper	4.00E-02	NA	2.33E+01	1.07E-05		3E-04		9.96E-05		2E-03		
Magnesium	NA	NA	1.37E+04									
Selenium	5.00E-03	NA	7.56E-01	3.46E-07		7E-05		3.23E-06		6E-04		
Thallium	8.00E-05	NA	1.16E+00	5.31E-07		7E-03		4.96E-06		6E-02		
Total Hazard Quotient and Cancer Risk:						8E-03				8E-02		5E-08

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
CF =	1E-06 kg/mg	CF =	1E-06 kg/mg
CS =	EPC Surface Only	CS =	EPC Surface Only
BW =	70 kg	BW =	15 kg
IR =	50 mg soil/day	IR =	100 mg soil/day
FI =	1 unitless	FI =	1 unitless
EF =	234 days/year	EF =	234 days/year
ED =	7 years	ED =	2 years
AT (Nc) =	2555 days	AT (Nc) =	730 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
ND= Compound not detected.

TABLE L-7D (Sediment)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SEDIMENT
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Sediment, from Sediment EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Sediment (mg/kg)	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk
Volatile Organics											
1,1,1-Trichloroethane	2.80E-01	NA	3.00E-03								
Acetone	1.00E-01	NA	2.32E-02								
Methyl chloride	NA	1.30E-02	9.84E-03		Ingestion of Onsite Sediment Not Applicable for Current Site Worker				Ingestion of Onsite Sediment Not Applicable for Future Outdoor Park Worker		
Methyl ethyl ketone	6.00E-01	NA	1.01E-02								
Tetrachloroethene	1.00E-02	5.20E-02	4.00E-03								
Toluene	2.00E-01	NA	1.04E-02								
Trichloroethene	NA	1.10E-02	1.05E-02								
Semivolatile Organics											
2-Methylnaphthalene	4.00E-02	NA	3.60E-02								
4-Chlorophenyl phenyl ether	NA	NA	6.00E-03								
4-Methylphenol	5.00E-03	NA	9.85E-02								
Acenaphthene	6.00E-02	NA	1.01E-01								
Acenaphthylene	NA	NA	1.50E-02								
Anthracene	3.00E-01	NA	1.14E-01								
Benzo(a)anthracene	NA	7.30E-01	2.86E-01								
Benzo(a)pyrene	NA	7.30E+00	2.99E-01								
Benzo(b)fluoranthene	NA	7.30E-01	3.89E-01								
Benzo(ghi)perylene	NA	NA	2.13E-01								
Benzo(k)fluoranthene	NA	7.30E-02	2.12E-01								
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.42E-01								
Butylbenzylphthalate	2.00E-01	NA	4.20E-02								
Carbazole	NA	2.00E-02	1.29E-01								
Chrysene	NA	7.30E-03	3.45E-01								
Di-n-butylphthalate	1.00E-01	NA	9.93E-02								
Di-n-octylphthalate	2.00E-02	NA	9.82E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	1.13E-01								
Dibenzofuran	NA	NA	6.40E-02								
Diethyl phthalate	8.00E-01	NA	4.00E-02								
Fluoranthene	4.00E-02	NA	8.07E-01								
Fluorene	4.00E-02	NA	9.30E-02								
Hexachlorobenzene	8.00E-04	1.60E+00	6.20E-03								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.94E-01								
Naphthalene	2.00E-02	NA	4.90E-02								
Phenanthrene	NA	NA	4.36E-01								
Pyrene	3.00E-02	NA	6.64E-01								
Pesticides/PCBs											
4,4'-DDD	NA	2.40E-01	6.14E-03								
4,4'-DDE	NA	3.40E-01	6.86E-03								
4,4'-DDT	5.00E-04	3.40E-01	5.89E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	1.73E-03								
Aroclor-1254	2.00E-05	2.00E+00	4.75E-02								
Aroclor-1260	2.00E-05	2.00E+00	3.26E-02								
Endosulfan I	6.00E-03	NA	1.71E-03								
Endrin	3.00E-04	NA	3.40E-03								
Endrin aldehyde	NA	NA	3.47E-03								
Endrin ketone	NA	NA	3.73E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	2.04E-03								
Metals											
Arsenic	3.00E-04	1.50E+00	6.64E+00								
Copper	4.00E-02	NA	4.58E+01								
Lead	NA	NA	2.85E+01								
Magnesium	NA	NA	1.27E+04								
Vanadium	7.00E-03	NA	2.77E+01								
Zinc	3.00E-01	NA	2.77E+02								
Total Hazard Quotient and Cancer Risk:											

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available

TABLE L-7D (Sediment)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SEDIMENT
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Sediment, from Sediment EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Make NA for SEAD-12 RI

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Sediment (mg/kg)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Future Construction Worker Intake (mg/kg-day) (Car)	Future Construction Worker Hazard Quotient	Future Construction Worker Cancer Risk
Volatile Organics											
1,1,1-Trichloroethane	2.80E-01	NA	3.00E-03								
Acetone	1.00E-01	NA	2.32E-02								
Methyl chloride	NA	1.30E-02	9.84E-03								
Methyl ethyl ketone	6.00E-01	NA	1.01E-02								
Tetrachloroethene	1.00E-02	5.20E-02	4.00E-03								
Toluene	2.00E-01	NA	1.04E-02								
Trichloroethene	NA	1.10E-02	1.05E-02								
Semivolatile Organics											
2-Methylnaphthalene	4.00E-02	NA	3.60E-02								
4-Chlorophenyl phenyl ether	NA	NA	6.00E-03								
4-Methylphenol	5.00E-03	NA	9.85E-02								
Acenaphthene	6.00E-02	NA	1.01E-01								
Acenaphthylene	NA	NA	1.50E-02								
Anthracene	3.00E-01	NA	1.14E-01								
Benzo(a)anthracene	NA	7.30E-01	2.86E-01								
Benzo(a)pyrene	NA	7.30E+00	2.99E-01								
Benzo(b)fluoranthene	NA	7.30E-01	3.89E-01								
Benzo(ghi)perylene	NA	NA	2.13E-01								
Benzo(k)fluoranthene	NA	7.30E-02	2.12E-01								
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.42E-01								
Butylbenzylphthalate	2.00E-01	NA	4.20E-02								
Carbazole	NA	2.00E-02	1.29E-01								
Chrysene	NA	7.30E-03	3.45E-01								
Di-n-butylphthalate	1.00E-01	NA	9.93E-02								
Di-n-octylphthalate	2.00E-02	NA	9.82E-02								
Dibenz(a,h)anthracene	NA	7.30E+00	1.13E-01								
Dibenzofuran	NA	NA	6.40E-02								
Diethyl phthalate	8.00E-01	NA	4.00E-02								
Fluoranthene	4.00E-02	NA	8.07E-01								
Fluorene	4.00E-02	NA	9.30E-02								
Hexachlorobenzene	8.00E-04	1.60E+00	6.20E-03								
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.94E-01								
Naphthalene	2.00E-02	NA	4.90E-02								
Phenanthrene	NA	NA	4.36E-01								
Pyrene	3.00E-02	NA	6.64E-01								
Pesticides/PCBs											
4,4'-DDD	NA	2.40E-01	6.14E-03								
4,4'-DDE	NA	3.40E-01	6.86E-03								
4,4'-DDT	5.00E-04	3.40E-01	5.89E-03								
Alpha-Chlordane	5.00E-04	3.50E-01	1.73E-03								
Aroclor-1254	2.00E-05	2.00E+00	4.75E-02								
Aroclor-1260	2.00E-05	2.00E+00	3.26E-02								
Endosulfan I	6.00E-03	NA	1.71E-03								
Endrin	3.00E-04	NA	3.40E-03								
Endrin aldehyde	NA	NA	3.47E-03								
Endrin ketone	NA	NA	3.73E-03								
Heptachlor epoxide	1.30E-05	9.10E+00	2.04E-03								
Metals											
Arsenic	3.00E-04	1.50E+00	6.64E+00								
Copper	4.00E-02	NA	4.58E+01								
Lead	NA	NA	2.85E+01								
Magnesium	NA	NA	1.27E+04								
Vanadium	7.00E-03	NA	2.77E+01								
Zinc	3.00E-01	NA	2.77E+02								

Ingestion of Onsite Sediment Not Applicable for Future Recreational Visitor Child

Ingestion of Onsite Sediment Not Applicable for Future Construction Worker

Total Hazard Quotient and Cancer Risk:

Assumptions for Future Recreational Visitor (Child)

IR =	100	mg sed/day
CF =	1E-06	kg/mg
FI =	1	unitless
EF =	4	days/year
ED =	1	year
BW =	15	kg
AT (Nc) =	365	days
AT (Car) =	25550	days

Note. Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-7D (Sediment)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SEDIMENT
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CS = Chemical Concentration in Sediment, from Sediment EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Sediment (mg/kg)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	2.80E-01	NA	3.00E-03	8.81E-11		3E-10		8.22E-10		3E-09		
Acetone	1.00E-01	NA	2.32E-02	6.81E-10		7E-09		6.36E-09		6E-08		
Methyl chloride	NA	1.30E-02	9.84E-03		2.89E-11		4E-13		7.70E-11		1E-12	1E-12
Methyl ethyl ketone	6.00E-01	NA	1.01E-02	2.96E-10		5E-10		2.77E-09		5E-09		
Tetrachloroethene	1.00E-02	5.20E-02	4.00E-03	1.17E-10	1.17E-11	1E-08	6E-13	1.10E-09	3.13E-11	1E-07	2E-12	2E-12
Toluene	2.00E-01	NA	1.04E-02	3.05E-10		2E-09		2.85E-09		1E-08		
Trichloroethene	NA	1.10E-02	1.05E-02		3.08E-11		3E-13		8.22E-11		9E-13	1E-12
Semivolatile Organics												
2-Methylnaphthalene	4.00E-02	NA	3.60E-02	1.06E-09		3E-08		9.86E-09		2E-07		
4-Chlorophenyl phenyl ether	NA	NA	6.00E-03									
4-Methylphenol	5.00E-03	NA	9.85E-02	2.89E-09		6E-07		2.70E-08		5E-06		
Acenaphthene	6.00E-02	NA	1.01E-01	2.96E-09		5E-08		2.77E-08		5E-07		
Acenaphthylene	NA	NA	1.50E-02									
Anthracene	3.00E-01	NA	1.14E-01	3.35E-09		1E-08		3.12E-08		1E-07		
Benzo(a)anthracene	NA	7.30E-01	2.86E-01		8.40E-10		6E-10		2.24E-09		2E-09	2E-09
Benzo(a)pyrene	NA	7.30E+00	2.99E-01		8.78E-10		6E-09		2.34E-09		2E-08	2E-08
Benzo(b)fluoranthene	NA	7.30E-01	3.89E-01		1.14E-09		8E-10		3.05E-09		2E-09	3E-09
Benzo(ghi)perylene	NA	NA	2.13E-01									
Benzo(k)fluoranthene	NA	7.30E-02	2.12E-01		6.22E-10		5E-11		1.66E-09		1E-10	2E-10
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	1.42E-01	4.17E-09	4.17E-10	2E-07	6E-12	3.89E-08	1.11E-09	2E-06	2E-11	2E-11
Butylbenzylphthalate	2.00E-01	NA	4.20E-02	1.23E-09		6E-09		1.15E-08		6E-08		
Carbazole	NA	2.00E-02	1.29E-01		3.79E-10		8E-12		1.01E-09		2E-11	3E-11
Chrysene	NA	7.30E-03	3.45E-01		1.01E-09		7E-12		2.70E-09		2E-11	3E-11
Di-n-butylphthalate	1.00E-01	NA	9.93E-02	2.91E-09		3E-08		2.72E-08		3E-07		
Di-n-octylphthalate	2.00E-02	NA	9.82E-02	2.88E-09		1E-07		2.69E-08		1E-06		
Dibenz(a,h)anthracene	NA	7.30E+00	1.13E-01		3.32E-10		2E-09		8.85E-10		6E-09	9E-09
Dibenzofuran	NA	NA	6.40E-02									
Diethyl phthalate	8.00E-01	NA	4.00E-02	1.17E-09		1E-09		1.10E-08		1E-08		
Fluoranthene	4.00E-02	NA	8.07E-01	2.37E-08		6E-07		2.21E-07		6E-06		
Fluorene	4.00E-02	NA	9.30E-02	2.73E-09		7E-08		2.55E-08		6E-07		
Hexachlorobenzene	8.00E-04	1.60E+00	6.20E-03	1.82E-10	1.82E-11	2E-07	3E-11	1.70E-09	4.85E-11	2E-06	8E-11	1E-10
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.94E-01		5.69E-10		4E-10		1.52E-09		1E-09	2E-09
Naphthalene	2.00E-02	NA	4.90E-02	1.44E-09		7E-08		1.34E-08		7E-07		
Phenanthrene	NA	NA	4.36E-01									
Pyrene	3.00E-02	NA	6.64E-01	1.95E-08		6E-07		1.82E-07		6E-06		
Pesticides/PCBs												
4,4'-DDD	NA	2.40E-01	6.14E-03		1.80E-11		4E-12		4.81E-11		1E-11	2E-11
4,4'-DDE	NA	3.40E-01	6.86E-03		2.01E-11		7E-12		5.37E-11		2E-11	3E-11
4,4'-DDT	5.00E-04	3.40E-01	5.89E-03	1.73E-10	1.73E-11	3E-07	6E-12	1.61E-09	4.61E-11	3E-06	2E-11	2E-11
Alpha-Chlordane	5.00E-04	3.50E-01	1.73E-03	5.08E-11	5.08E-12	1E-07	2E-12	4.74E-10	1.35E-11	9E-07	5E-12	7E-12
Aroclor-1254	2.00E-05	2.00E+00	4.75E-02	1.39E-09	1.39E-10	7E-05	3E-10	1.30E-08	3.72E-10	7E-04	7E-10	1E-09
Aroclor-1260	2.00E-05	2.00E+00	3.26E-02	9.57E-10	9.57E-11	5E-05	2E-10	8.93E-09	2.55E-10	4E-04	5E-10	7E-10
Endosulfan I	6.00E-03	NA	1.71E-03	5.02E-11		8E-09		4.68E-10		8E-08		
Endrin	3.00E-04	NA	3.40E-03	9.98E-11		3E-07		9.32E-10		3E-06		
Endrin aldehyde	NA	NA	3.47E-03									
Endrin ketone	NA	NA	3.73E-03									
Heptachlor epoxide	1.30E-05	9.10E+00	2.04E-03	5.99E-11	5.99E-12	5E-06	5E-11	5.59E-10	1.60E-11	4E-05	1E-10	2E-10
Metals												
Arsenic	3.00E-04	1.50E+00	6.64E+00	1.95E-07	1.95E-08	6E-04	3E-08	1.82E-06	5.20E-08	6E-03	8E-08	1E-07
Copper	4.00E-02	NA	4.58E+01	1.34E-06		3E-05		1.25E-05		3E-04		
Lead	NA	NA	2.85E+01									
Magnesium	NA	NA	1.27E+04									
Vanadium	7.00E-03	NA	2.77E+01	8.13E-07		1E-04		7.59E-06		1E-03		
Zinc	3.00E-01	NA	2.77E+02	8.13E-06		3E-05		7.59E-05		3E-04		
Total Hazard Quotient and Cancer Risk:						**1E-03**				**9E-03**		**1E-07**

Assumptions for Future Resident (Adult)

IR =	50	mg sed/day
CF =	1E-06	kg/mg
FI =	1	unitless
EF =	15	days/year
ED =	7	years
BW =	70	kg
AT (Nc) =	2,555	days
AT (Car) =	25,550	days

Assumptions for Future Resident (Child)

IR =	100	mg sed/day
CF =	1E-06	kg/mg
FI =	1	unitless
EF =	15	days/year
ED =	2	years
BW =	15	kg
AT (Nc) =	730	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-7D (Sediment)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF SEDIMENT
CENTRAL TENDENCY (CT)
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CS \times IR \times CF \times FI \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):

CS = Chemical Concentration in Sediment, from Sediment EPC Data
IR = Ingestion Rate
CF = Conversion Factor
FI = Fraction Ingested
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-	EPC Sediment (mg/kg)	Off-Site Wader (Child) Intake (mg/kg-day) (Nc)	(Car)	Hazard Quotient	Cancer Risk
Volatile Organics							
Acetone	2.80E-01	NA	2.36E-02	1.72E-09		6E-09	
Carbon disulfide	1.00E-01	NA	1.09E-02	7.96E-10		8E-09	
Chloroform	NA	1.30E-02	1.11E-02		1.16E-11		2E-13
Methyl chloride	6.00E-01	NA	5.00E-03	3.65E-10		6E-10	
Methyl ethyl ketone	1.00E-02	5.20E-02	1.16E-02	8.47E-10	1.21E-11	8E-08	6E-13
Methylene chloride	2.00E-01	NA	1.07E-02	7.82E-10		4E-09	
Styrene	NA	1.10E-02	3.00E-03		3.13E-12		3E-14
Semivolatile Organics							
1,4-Dichlorobenzene	4.00E-02	NA	7.30E-02	5.33E-09		1E-07	
2-Methylnaphthalene	NA	NA	3.10E-02				
4-Methylphenol	5.00E-03	NA	1.37E-01	1.00E-08		2E-06	
Acenaphthene	6.00E-02	NA	2.73E-01	1.99E-08		3E-07	
Acenaphthylene	NA	NA	1.29E-01				
Anthracene	3.00E-01	NA	3.04E-01	2.22E-08		7E-08	
Benzo(a)anthracene	NA	7.30E-01	5.62E-01		5.87E-10		4E-10
Benzo(a)pyrene	NA	7.30E+00	5.54E-01		5.78E-10		4E-09
Benzo(b)fluoranthene	NA	7.30E-01	5.67E-01		5.92E-10		4E-10
Benzo(ghi)perylene	NA	NA	3.25E-01				
Benzo(k)fluoranthene	NA	7.30E-02	3.98E-01		4.15E-10		3E-11
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	6.99E-01	5.11E-08	7.30E-10	3E-06	1E-11
Butylbenzylphthalate	2.00E-01	NA	1.60E-02	1.17E-09		6E-09	
Carbazole	NA	2.00E-02	3.53E-01		3.68E-10		7E-12
Chrysene	NA	7.30E-03	5.64E-01		5.89E-10		4E-12
Di-n-butylphthalate	1.00E-01	NA	2.29E-01	1.67E-08		2E-07	
Di-n-octylphthalate	2.00E-02	NA	4.60E-02	3.36E-09		2E-07	
Dibenz(a,h)anthracene	NA	7.30E+00	3.88E-01		4.05E-10		3E-09
Dibenzofuran	NA	NA	2.10E-01				
Diethyl phthalate	8.00E-01	NA	1.70E-02	1.24E-09		2E-09	
Fluoranthene	4.00E-02	NA	6.81E-01	4.98E-08		1E-06	
Fluorene	4.00E-02	NA	2.44E-01	1.78E-08		4E-07	
Hexachlorobenzene	8.00E-04	1.60E+00	2.76E-01	2.02E-08	2.88E-10	3E-05	5E-10
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	3.63E-01		3.79E-10		3E-10
N-Nitrosodiphenylamine	2.00E-02	NA	2.70E-01	1.97E-08		1E-06	
N-Nitrosodipropylamine	NA	NA	2.67E-01				
Naphthalene	3.00E-02	NA	1.30E-02	9.50E-10		3E-08	
Pesticides/PCBs							
4,4'-DDD	NA	2.40E-01	7.07E-03		7.38E-12		2E-12
4,4'-DDE	NA	3.40E-01	6.93E-03		7.23E-12		2E-12
4,4'-DDT	5.00E-04	3.40E-01	5.75E-03	4.20E-10	6.00E-12	8E-07	2E-12
Aldrin	5.00E-04	3.50E-01	1.88E-03	1.37E-10	1.96E-12	3E-07	7E-13
Alpha-Chlordane	2.00E-05	2.00E+00	3.73E-03	2.73E-10	3.89E-12	1E-05	8E-12
Aroclor-1254	2.00E-05	2.00E+00	8.58E-02	6.27E-09	8.95E-11	3E-04	2E-10
Aroclor-1260	6.00E-03	NA	4.97E-02	3.63E-09		6E-07	
Beta-BHC	3.00E-04	NA	1.91E-03	1.40E-10		5E-07	
Dieldrin	NA	NA	3.81E-03				
Endosulfan I	NA	NA	1.84E-03				
Endosulfan II	1.30E-05	9.10E+00	3.67E-03	2.68E-10	3.83E-12	2E-05	3E-11
Metals							
Aluminum	3.00E-04	1.50E+00	1.35E+04	9.89E-04	1.41E-05	3E+00	2E-05
Antimony	4.00E-02	NA	1.53E+01	1.12E-06		3E-05	
Arsenic	NA	NA	7.26E+00				
Barium	NA	NA	1.20E+02				
Beryllium	7.00E-03	NA	6.80E-01	4.97E-08		7E-06	
Cadmium	3.00E-01	NA	6.10E+00	4.46E-07		1E-06	
Total Hazard Quotient and Cancer Risk:						**3E+00**	**2E-05**

Assumptions for Off-Site Wader (Child)

IR =	100	mg sed/day
CF =	1E-06	kg/mg
FI =	1	unitless
EF =	4	days/year
ED =	1	year
BW =	15	kg
AT (Nc) =	365	days
AT (Car) =	25550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-7E (Groundwater)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF GROUNDWATER
CENTRAL TENDENCY (CT) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CW \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CW = Chemical Concentration in Groundwater, from Groundwater EPC Data
IR = Ingestion Rate
EF = Exposure Frequency
ED=Exposure Duration
BW=Bodyweight
AT=Averaging Time

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Groundwater (mg/liter)	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Future Construction Worker Intake (mg/kg-day) (Car)	Future Construction Worker Hazard Quotient	Future Construction Worker Cancer Risk
Volatile Organics																			
1,1,1-Trichloroethane	2.80E-01	NA	1.13E-03					6.77E-06		2E-05		1.07E-06		4E-06					
1,2-Dichloroethene (total)	9.00E-03	NA	1.79E-02					1.07E-04		1E-02		1.69E-05		2E-03					
Acetone	1.00E-01	NA	3.99E-03					2.39E-05		2E-04		3.78E-06		4E-05					
Toluene	2.00E-01	NA	1.16E-03					6.95E-06		3E-05		1.10E-06		5E-06					
Trichloroethene	NA	1.10E-02	2.41E-03						1.44E-06		2E-08		3.26E-08		4E-10				
Semivolatile Organics																			
1,4-Dichlorobenzene	NA	2.40E-02	9.30E-05						5.57E-08		1E-09		1.26E-09		3E-11				
Benzo(a)pyrene	NA	7.30E+00	9.70E-05						5.81E-08		4E-07		1.31E-09		1E-08				
Benzo(b)fluoranthene	NA	7.30E-01	7.60E-05						4.55E-08		3E-08		1.03E-09		7E-10				
Benzo(ghi)perylene	NA	NA	1.80E-04																
Benzo(k)fluoranthene	NA	7.30E-02	9.10E-05						5.45E-08		4E-09		1.23E-09		9E-11				
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	2.06E-04					1.23E-06	1.23E-07	6E-05	2E-09	1.95E-07	2.78E-09	1E-05	4E-11				
Butylbenzylphthalate	2.00E-01	NA	6.40E-05					3.83E-07		2E-06		6.06E-08		3E-07					
Di-n-butylphthalate	1.00E-01	NA	2.10E-04					1.26E-06		1E-05		1.99E-07		2E-06					
Di-n-octylphthalate	2.00E-02	NA	4.10E-04					2.46E-06		1E-04		3.88E-07		2E-05					
Diethyl phthalate	8.00E-01	NA	1.03E-03					6.17E-06		8E-06		9.75E-07		1E-06					
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.00E-04						5.99E-08		4E-08		1.35E-09		1E-09				
Phenol	6.00E-01	NA	4.30E-04					2.57E-06		4E-06		4.07E-07		7E-07					
Pyrene	3.00E-02	NA	8.00E-05					4.79E-07		2E-05		7.57E-08		3E-06					
Pesticides/PCBs																			
Beta-BHC	NA	1.80E+00	3.30E-06						1.98E-09		4E-09		4.46E-11		8E-11				
Gamma-Chlordane	5.00E-04	3.50E-01	4.41E-06					2.64E-08	2.64E-09	5E-05	9E-10	4.17E-09	5.96E-11	8E-06	2E-11				
Heptachlor	5.00E-04	4.50E+00	2.70E-06					1.62E-08	1.62E-09	3E-05	7E-09	2.55E-09	3.65E-11	5E-06	2E-10				
Metals																			
Barium	7.00E-02	NA	9.42E-02					5.64E-04		8E-03		8.91E-05		1E-03					
Cobalt	6.00E-02	NA	1.57E-03					9.40E-06		2E-04		1.49E-06		2E-05					
Total Hazard Quotient and Cancer Risk:										**2E-02**	**5E-07**			**3E-03**	**1E-08**				

Ingestion of Groundwater Not Applicable for Current Site Worker

Ingestion of Groundwater Not Applicable for Construction Worker

Assumptions for Future Outdoor Park Worker

BW =	70	kg
IR =	1	liter/day
EF =	153	days/year
ED =	7	years
AT (Nc) =	2555	days
AT (Car) =	25,550	days

Assumptions for Future Recreational Visitor (Child)

BW =	15	kg
IR =	0.74	liter/day
EF =	7	days/year
ED =	1	years
AT (Nc) =	365	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available

TABLE L-7E (Groundwater)
CALCULATION OF INTAKE AND RISK FROM THE INGESTION OF GROUNDWATER
CENTRAL TENDENCY (CT) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CW \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CW = Chemical Concentration in Groundwater, from Groundwater EPC Data
IR = Ingestion Rate
EF = Exposure Frequency
ED=Exposure Duration
BW=Bodyweight
AT=Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Contribution to Cancer Risk = Chronic Daily Intake (Car) x Slope Factor
Equation for Total Lifetime Cancer Risk = Adult Contribution + Child Contribution

Analyte	Oral RfD (mg/kg-day)	Carc. Slope Oral (mg/kg-day)-1	EPC Groundwater (mg/liter)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	2.80E-01	NA	1.13E-03	1.45E-05		5E-05		3.57E-05		1E-04		
1,2-Dichloroethene (total)	9.00E-03	NA	1.79E-02	2.30E-04		3E-02		5.66E-04		6E-02		
Acetone	1.00E-01	NA	3.99E-03	5.12E-05		5E-04		1.26E-04		1E-03		
Toluene	2.00E-01	NA	1.16E-03	1.49E-05		7E-05		3.67E-05		2E-04		
Trichloroethene	NA	1.10E-02	2.41E-03		3.09E-06		3E-08		2.18E-06		2E-08	6E-08
Semivolatile Organics												
1,4-Dichlorobenzene	NA	2.40E-02	9.30E-05		1.19E-07		3E-09		8.40E-08		2E-09	5E-09
Benzo(a)pyrene	NA	7.30E+00	9.70E-05		1.24E-07		9E-07		8.77E-08		6E-07	2E-06
Benzo(b)fluoranthene	NA	7.30E-01	7.60E-05		9.74E-08		7E-08		6.87E-08		5E-08	1E-07
Benzo(ghi)perylene	NA	NA	1.80E-04									
Benzo(k)fluoranthene	NA	7.30E-02	9.10E-05		1.17E-07		9E-09		8.22E-08		6E-09	1E-08
Bis(2-Ethylhexyl)phthalate	2.00E-02	1.40E-02	2.06E-04	2.64E-06	2.64E-07	1E-04	4E-09	6.52E-06	1.86E-07	3E-04	3E-09	6E-09
Butylbenzylphthalate	2.00E-01	NA	6.40E-05	8.21E-07		4E-06		2.02E-06		1E-05		
Di-n-butylphthalate	1.00E-01	NA	2.10E-04	2.69E-06		3E-05		6.64E-06		7E-05		
Di-n-octylphthalate	2.00E-02	NA	4.10E-04	5.26E-06		3E-04		1.30E-05		6E-04		
Diethyl phthalate	8.00E-01	NA	1.03E-03	1.32E-05		2E-05		3.26E-05		4E-05		
Indeno(1,2,3-cd)pyrene	NA	7.30E-01	1.00E-04		1.28E-07		9E-08		9.04E-08		7E-08	2E-07
Phenol	6.00E-01	NA	4.30E-04	5.51E-06		9E-06		1.36E-05		2E-05		
Pyrene	3.00E-02	NA	8.00E-05	1.03E-06		3E-05		2.53E-06		8E-05		
Pesticides/PCBs												
Beta-BHC	NA	1.80E+00	3.30E-06		4.23E-09		8E-09		2.98E-09		5E-09	1E-08
Gamma-Chlordane	5.00E-04	3.50E-01	4.41E-06	5.65E-08	5.65E-09	1E-04	2E-09	1.39E-07	3.99E-09	3E-04	1E-09	3E-09
Heptachlor	5.00E-04	4.50E+00	2.70E-06	3.46E-08	3.46E-09	7E-05	2E-08	8.54E-08	2.44E-09	2E-04	1E-08	3E-08
Metals												
Barium	7.00E-02	NA	9.42E-02	1.21E-03		2E-02		2.98E-03		4E-02		
Cobalt	6.00E-02	NA	1.57E-03	2.01E-05		3E-04		4.97E-05		8E-04		
Total Hazard Quotient and Cancer Risk:						**4E-02**				**1E-01**		**2E-06**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
BW =	70	kg	BW =	15	kg
IR =	1.4	liters/day	IR =	0.74	liters/day
EF =	234	days/year	EF =	234	days/year
ED =	7	years	ED =	2	years
AT (Nc) =	2,555	days	AT (Nc) =	730	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.

TABLE L-8 (Groundwater)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF GROUNDWATER (WHILE SHOWERING)
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA =Chemical Concentration in Air
IR = Inhalation Rate
EF = Exposure Frequency
ED=Exposure Duration
BW=Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	EPC* Air	Current Site Worker				Future Outdoor Park Worker				Future Recreational Visitor (Child)				Future Construction Worker			
				Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m³)	(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)			(Nc)	(Car)		
Volatile Organics																			
1,1,1-Trichloroethane	6.28E-01	NA	8.30E-06	Inhalation of Groundwater Not Applicable for Current Site Worker				Inhalation of Groundwater Not Applicable for Future Outdoor Park Worker				1.59E-09		3E-09		Inhalation of Groundwater Not Applicable for Future Construction Worker			
1,2-Dichloroethene (total)	NA	NA	3.57E-02																
Acetone	NA	NA	9.15E-03																
Toluene	1.14E-01	NA	2.64E-03									5.05E-07		4E-06					
Trichloroethene	NA	6.00E-03	6.05E-03										8.29E-08		5E-10				
Semivolatile Organics																			
1,4-Dichlorobenzene	2.28E-01	NA	1.47E-08									2.82E-12		1E-11					
Benzo(a)pyrene	NA	NA	1.25E-08																
Benzo(b)fluoranthene	NA	NA	7.64E-09																
Benzo(ghi)perylene	NA	NA	7.32E-08																
Benzo(k)fluoranthene	NA	NA	3.73E-05																
Bis(2-Ethylhexyl)phthalate	NA	NA	3.34E-08																
Butylbenzylphthalate	NA	NA	1.04E-08																
Di-n-butylphthalate	NA	NA	3.40E-08																
Di-n-octylphthalate	NA	NA	6.64E-08																
Diethyl phthalate	NA	NA	1.67E-07																
Indeno(1,2,3-cd)pyrene	NA	NA	1.62E-08																
Phenol	NA	NA	6.96E-08																
Pyrene	NA	NA	1.30E-08																
Pesticides/PCBs																			
Beta-BHC	NA	1.86E+00	1.88E-08										2.58E-13		5E-13				
Gamma-Chlordane	2.00E-04	3.50E-01	9.23E-09									1.77E-12	1.26E-13	9E-09	4E-14				
Heptachlor	NA	4.55E+00	6.99E-06										9.57E-11		4E-10				
Metals																			
Barium	1.43E-04	NA	NA																
Cobalt	NA	NA	NA																
Total Hazard Quotient and Cancer Risk:														**4E-06**	**9E-10**				

Assumptions for Future Recreational Visitor (Child)

BW =	15 kg
IR =	0.08 m3/day
EF =	14 days/year
ED =	5 years
AT (Nc) =	1,825 days
AT (Car) =	25,550 days

Note. Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* EPC air is the concentration of chemical available for inhalation after accounting for partitioning between the air and water in the shower. The calculation of the EPC air is shown in Table L-10.

TABLE L-8 (Groundwater)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF GROUNDWATER (WHILE SHOWERING)
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CA =Chemical Concentration in Air
IR = Inhalation Rate
EF = Exposure Frequency
ED=Exposure Duration
BW=Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	EPC* Air (mg/m³)	Future Resident (Adult) Intake (mg/kg-day) (Nc)	Future Resident (Adult) Intake (mg/kg-day) (Car)	Future Resident (Adult) Hazard Quotient	Future Resident (Adult) Contribution to Lifetime Cancer Risk	Future Resident (Child) Intake (mg/kg-day) (Nc)	Future Resident (Child) Intake (mg/kg-day) (Car)	Future Resident (Child) Hazard Quotient	Future Resident (Child) Contribution to Lifetime Cancer Risk	Resident Total Lifetime Cancer Risk
Volatile Organics												
1,1,1-Trichloroethane	6.28E-01	NA	8.30E-06	1.42E-08		2E-08		3.98E-08		6E-08		
1,2-Dichloroethene (total)	NA	NA	3.57E-02									
Acetone	NA	NA	9.15E-03									
Toluene	1.14E-01	NA	2.64E-03	4.51E-06		4E-05		1.26E-05		1E-04		
Trichloroethene	NA	6.00E-03	6.05E-03		3.55E-06		2E-08		2.49E-06		1E-08	4E-08
Semivolatile Organics												
1,4-Dichlorobenzene	2.28E-01	NA	1.47E-08	2.52E-11		1E-10		7.04E-11		3E-10		
Benzo(a)pyrene	NA	NA	1.25E-08									
Benzo(b)fluoranthene	NA	NA	7.64E-09									
Benzo(ghi)perylene	NA	NA	7.32E-08									
Benzo(k)fluoranthene	NA	NA	3.73E-05									
Bis(2-Ethylhexyl)phthalate	NA	NA	3.34E-08									
Butylbenzylphthalate	NA	NA	1.04E-08									
Di-n-butylphthalate	NA	NA	3.40E-08									
Di-n-octylphthalate	NA	NA	6.64E-08									
Diethyl phthalate	NA	NA	1.67E-07									
Indeno(1,2,3-cd)pyrene	NA	NA	1.62E-08									
Phenol	NA	NA	6.96E-08									
Pyrene	NA	NA	1.30E-08									
Pesticides/PCBs												
Beta-BHC	NA	1.86E+00	1.88E-08		1.11E-11		2E-11		7.74E-12		1E-11	3E-11
Gamma-Chlordane	2.00E-04	3.50E-01	9.23E-09	1.58E-11	5.42E-12	8E-08	2E-12	4.43E-11	3.79E-12	2E-07	1E-12	3E-12
Heptachlor	NA	4.55E+00	6.99E-06		4.10E-09		2E-08		2.87E-09		1E-08	3E-08
Metals												
Barium	1.43E-04	NA	NA									
Cobalt	NA	NA	NA									
Total Hazard Quotient and Cancer Risk:						**4E-05**				**1E-04**		**7E-08**

Assumptions for Future Resident (Adult)		Assumptions for Future Resident (Child)	
BW =	70 kg	BW =	15 kg
IR =	0.13 m3/day	IR =	0.08 m3/day
EF =	350 days/year	EF =	350 days/year
ED =	24 years	ED =	6 years
AT (Nc) =	8,760 days	AT (Nc) =	2,190 days
AT (Car) =	25,550 days	AT (Car) =	25,550 days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* EPC air is the concentration of chemical available for inhalation after accounting for partitioning between the air and water in the shower. The calculation of the EPC air is shown in Table L-10.

TABLE L-9 (Groundwater)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF GROUNDWATER (WHILE SHOWERING)
CENTRAL TENDENCY (CT) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom).
CA = Chemical Concentration in Air
IR = Inhalation Rate
EF = Exposure Frequency
ED = Exposure Duration
BW = Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD (mg/kg-day)	Carc. Slope Inhalation (mg/kg-day)-1	EPC[a] Air (mg/m³)	Current Site Worker Intake (mg/kg-day) (Nc)	Current Site Worker Intake (mg/kg-day) (Car)	Current Site Worker Hazard Quotient	Current Site Worker Cancer Risk	Future Outdoor Park Worker Intake (mg/kg-day) (Nc)	Future Outdoor Park Worker Intake (mg/kg-day) (Car)	Future Outdoor Park Worker Hazard Quotient	Future Outdoor Park Worker Cancer Risk	Future Recreational Visitor (Child) Intake (mg/kg-day) (Nc)	Future Recreational Visitor (Child) Intake (mg/kg-day) (Car)	Future Recreational Visitor (Child) Hazard Quotient	Future Recreational Visitor (Child) Cancer Risk	Future Construction Worker Intake (mg/kg-day) (Nc)	Future Construction Worker Intake (mg/kg-day) (Car)	Future Construction Worker Hazard Quotient	Future Construction Worker Cancer Risk
Volatile Organics																			
1,1,1-Trichloroethane	6.28E-01	NA	6.90E-06									4.41E-10		7E-10					
1,2-Dichloroethene (total)	NA	NA	2.96E-02	Inhalation of Groundwater Not Applicable for Current Site Worker				Inhalation of Groundwater Not Applicable for Future Outdoor Park Worker								Inhalation of Groundwater Not Applicable for Future Construction Worker			
Acetone	NA	NA	7.60E-03																
Toluene	1.14E-01	NA	2.19E-03									1.40E-07		1E-06					
Trichloroethene	NA	6.00E-03	5.03E-03										4.59E-09		3E-11				
Semivolatile Organics																			
1,4-Dichlorobenzene	2.28E-01	NA	1.22E-08									7.80E-13		3E-12					
Benzo(a)pyrene	NA	NA	1.04E-08																
Benzo(b)fluoranthene	NA	NA	6.35E-09																
Benzo(ghi)perylene	NA	NA	6.08E-08																
Benzo(k)fluoranthene	NA	NA	3.10E-05																
Bis(2-Ethylhexyl)phthalate	NA	NA	2.77E-08																
Butylbenzylphthalate	NA	NA	8.61E-09																
Di-n-butylphthalate	NA	NA	2.83E-08																
Di-n-octylphthalate	NA	NA	5.52E-08																
Diethyl phthalate	NA	NA	1.39E-07																
Indeno(1,2,3-cd)pyrene	NA	NA	1.35E-08																
Phenol	NA	NA	5.78E-08																
Pyrene	NA	NA	1.08E-08																
Pesticides/PCBs																			
Beta-BHC	NA	1.86E+00	1.56E-08										1.43E-14		3E-14				
Gamma-Chlordane	2.00E-04	3.50E-01	7.67E-09									4.90E-13	7.01E-15	2E-09	2E-15				
Heptachlor	NA	4.55E+00	5.81E-06										5.30E-12		2E-11				
Metals																			
Barium	1.43E-04	NA	NA																
Cobalt	NA	NA	NA																
Total Hazard Quotient and Cancer Risk:														**1E-06**	**5E-11**				

Assumptions for Future Recreational Visitor (Child)

BW =	15	kg
IR =	0.05	m3/day
EF =	7	days/year
ED =	1	years
AT (Nc) =	365	days
AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available
* EPC air is the concentration of chemical available for inhalation after accounting for partitioning between the air and water in the shower The calculation of the EPC air is shown in Table L-11

TABLE L-9 (Groundwater)
CALCULATION OF INTAKE AND RISK FROM INHALATION OF GROUNDWATER (WHILE SHOWERING)
CENTRAL TENDENCY (CT) - SEAD-12
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Equation for Intake (mg/kg-day) = $\frac{CA \times IR \times EF \times ED}{BW \times AT}$

Variables (Assumptions for Each Receptor are Listed at the Bottom):
CA =Chemical Concentration in Air
IR = Inhalation Rate
EF = Exposure Frequency
ED=Exposure Duration
BW=Bodyweight
AT = Averaging Time

Equation for Hazard Quotient = Chronic Daily Intake (Nc)/Reference Dose

Equation for Cancer Risk = Chronic Daily Intake (Car) x Slope Factor

Analyte	Inhalation RfD	Carc. Slope Inhalation	EPC* Air	Future Resident (Adult)				Future Resident (Child)				Resident
				Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Intake (mg/kg-day)		Hazard Quotient	Contribution to Lifetime Cancer Risk	Total Lifetime Cancer Risk
	(mg/kg-day)	(mg/kg-day)-1	(mg/m³)	(Nc)	(Car)			(Nc)	(Car)			
Volatile Organics												
1,1,1-Trichloroethane	6.28E-01	NA	6.90E-06	5.26E-09		8E-09		1.47E-08		2E-08		
1,2-Dichloroethene (total)	NA	NA	2.96E-02									
Acetone	NA	NA	7.60E-03									
Toluene	1.14E-01	NA	2.19E-03	1.67E-06		1E-05		4.68E-06		4E-05		
Trichloroethene	NA	6.00E-03	5.03E-03		3.84E-07		2E-09		3.07E-07		2E-09	4E-09
Semivolatile Organics												
1,4-Dichlorobenzene	2.28E-01	NA	1.22E-08	9.32E-12		4E-11		2.61E-11		1E-10		
Benzo(a)pyrene	NA	NA	1.04E-08									
Benzo(b)fluoranthene	NA	NA	6.35E-09									
Benzo(ghi)perylene	NA	NA	6.08E-08									
Benzo(k)fluoranthene	NA	NA	3.10E-05									
Bis(2-Ethylhexyl)phthalate	NA	NA	2.77E-08									
Butylbenzylphthalate	NA	NA	8.61E-09									
Di-n-butylphthalate	NA	NA	2.83E-08									
Di-n-octylphthalate	NA	NA	5.52E-08									
Diethyl phthalate	NA	NA	1.39E-07									
Indeno(1,2,3-cd)pyrene	NA	NA	1.35E-08									
Phenol	NA	NA	5.78E-08									
Pyrene	NA	NA	1.08E-08									
Pesticides/PCBs												
Beta-BHC	NA	1.86E+00	1.56E-08		1.19E-12		2E-12		9.55E-13		2E-12	4E-12
Gamma-Chlordane	2.00E-04	3.50E-01	7.67E-09	5.85E-12	5.85E-13	3E-08	2E-13	1.64E-11	4.68E-13	8E-08	2E-13	4E-13
Heptachlor	NA	4.55E+00	5.81E-06		4.43E-10		2E-09		3.55E-10		2E-09	4E-09
Metals												
Barium	1.43E-04	NA	NA									
Cobalt	NA	NA	NA									
Total Hazard Quotient and Cancer Risk:						**1E-05**				**4E-05**		**8E-09**

Assumptions for Future Resident (Adult)			Assumptions for Future Resident (Child)		
BW =	70	kg	BW =	15	kg
IR =	0.08	m3/day	IR =	0.05	m3/day
EF =	234	days/year	EF =	234	days/year
ED =	7	years	ED =	2	years
AT (Nc) =	2,555	days	AT (Nc) =	730	days
AT (Car) =	25,550	days	AT (Car) =	25,550	days

Note: Cells in this table were intentionally left blank due to a lack of toxicity data.
NA= Information not available.
* EPC air is the concentration of chemical available for inhalation after accounting for partitioning between the air and water in the shower. The calculation of the EPC air is shown in Table L-11.

TABLE L-10 (Groundwater)
CALCULATION OF AIR CONCENTRATION IN SHOWER
FROM VOLATILIZATION OF GROUNDWATER (DAILY)
REASONABLE MAXIMUM EXPOSURE (RME) - SEAD-12
SEAD - 12 Remedial Investigation
Seneca Army Depot Activity

Analyte	EPC Air All-Site Wells (mg/m³)	Time of Shower -Ts (min)	Flow Rate of Shower - Fw (L/min)	EPC Groundwater (mg/l)	Flow Rate of Air in Shower-Fa (m³/min)	Volume of Bathroom-Vb (m³)	Henry Laws Constant-H (m³-atm/mol)	Asymptotic Air Conc.-Cinf (mg/m³)	Rate Constant-K (1/min)	Efficiency of Release-E (unitless)	Efficiency of Release for TCE E-TCE	Henry Laws Constant-TCE (m³-atm/mol)	Fraction Emitted* (percent)	Cderm** (Water) (mg/l)
Volatile Organics														
1,1,1-Trichloroethane	8.30E-06	15	19	1.13E-03	2.4	12	2.06E-05	1.22E-05	0.20	1.36E-03	0.6	0.0091	0.09%	1.13E-03
1,2-Dichloroethene (total)	3.57E-02	15	19	1.79E-02	2.4	12	5.59E-03	5.22E-02	0.20	3.69E-01	0.6	0.0091	25.18%	1.34E-02
Acetone	9.15E-03	15	19	3.99E-03	2.4	12	6.43E-03	1.34E-02	0.20	4.24E-01	0.6	0.0091	28.97%	2.83E-03
Toluene	2.64E-03	15	19	1.16E-03	2.4	12	6.37E-03	3.86E-03	0.20	4.20E-01	0.6	0.0091	28.70%	8.27E-04
Trichloroethene	6.05E-03	15	19	2.41E-03	2.4	12	7.04E-03	8.86E-03	0.20	4.64E-01	0.6	0.0091	31.72%	1.65E-03
Semivolatile Organics														
1,4-Dichlorobenzene	1.47E-08	15	19	9.30E-05	2.4	12	4.43E-07	2.15E-08	0.20	2.92E-05	0.6	0.0091	0.00%	9.30E-05
Benzo(a)pyrene	1.25E-08	15	19	9.70E-05	2.4	12	3.61E-07	1.83E-08	0.20	2.38E-05	0.6	0.0091	0.00%	9.70E-05
Benzo(b)fluoranthene	7.64E-09	15	19	7.60E-05	2.4	12	2.82E-07	1.12E-08	0.20	1.86E-05	0.6	0.0091	0.00%	7.60E-05
Benzo(ghi)perylene	7.32E-08	15	19	1.80E-04	2.4	12	1.14E-06	1.07E-07	0.20	7.52E-05	0.6	0.0091	0.01%	1.80E-04
Benzo(k)fluoranthene	3.73E-05	15	19	9.10E-05	2.4	12	1.15E-03	5.46E-05	0.20	7.58E-02	0.6	0.0091	5.18%	8.63E-05
Bis(2-Ethylhexyl)phthalate	3.34E-08	15	19	2.06E-04	2.4	12	4.54E-07	4.88E-08	0.20	2.99E-05	0.6	0.0091	0.00%	2.06E-04
Butylbenzylphthalate	1.04E-08	15	19	6.40E-05	2.4	12	4.54E-07	1.52E-08	0.20	2.99E-05	0.6	0.0091	0.00%	6.40E-05
Di-n-butylphthalate	3.40E-08	15	19	2.10E-04	2.4	12	4.54E-07	4.98E-08	0.20	2.99E-05	0.6	0.0091	0.00%	2.10E-04
Di-n-octylphthalate	6.64E-08	15	19	4.10E-04	2.4	12	4.54E-07	9.72E-08	0.20	2.99E-05	0.6	0.0091	0.00%	4.10E-04
Diethyl phthalate	1.67E-07	15	19	1.03E-03	2.4	12	4.54E-07	2.44E-07	0.20	2.99E-05	0.6	0.0091	0.00%	1.03E-03
Indeno(1,2,3-cd)pyrene	1.62E-08	15	19	1.00E-04	2.4	12	4.54E-07	2.37E-08	0.20	2.99E-05	0.6	0.0091	0.00%	1.00E-04
Phenol	6.96E-08	15	19	4.30E-04	2.4	12	4.54E-07	1.02E-07	0.20	2.99E-05	0.6	0.0091	0.00%	4.30E-04
Pyrene	1.30E-08	15	19	8.00E-05	2.4	12	4.54E-07	1.90E-08	0.20	2.99E-05	0.6	0.0091	0.00%	8.00E-05
Pesticides/PCBs														
Beta-BHC	1.88E-08	15	19	3.30E-06	2.4	12	1.60E-05	2.76E-08	0.20	1.05E-03	0.6	0.0091	0.07%	3.30E-06
Gamma-Chlordane	9.23E-09	15	19	4.41E-06	2.4	12	5.87E-06	1.35E-08	0.20	3.87E-04	0.6	0.0091	0.03%	4.41E-06
Heptachlor	6.99E-06	15	19	2.76E-06	2.4	12	7.10E-03	1.02E-05	0.20	4.68E-01	0.6	0.0091	31.99%	1.88E-06
Metals														
Barium	0.00E+00	15	19	9.42E-02	2.4	12	NA	0.00E+00	0.20	0.00E+00	0.6	0.0091	0.00%	9.42E-02
Cobalt	0.00E+00	15	19	1.57E-03	2.4	12	NA	0.00E+00	0.20	0.00E+00	0.6	0.0091	0.00%	1.57E-03

Concentration in Air (mg/m³) = Cinf[1+(1/(kTs)(exp(-kTs)-1)]

Asymptotic Air Conc. - Cinf (mg/m³) = [(E)(Fw)(Ct)]/Fa

Rate Constant - k (L/min) = Fa/Vb

Efficiency of Release - E (unitless) = (E-tce)(H)/(H-tce)

*** Fraction Emitted (fe) = (EPCair x Fa) / (EPCgw x Fw)**

**** Cderm = EPCgw x (1 - fe)**

Variables:

CA = Chemical Concentration in Air (mg/m³)
Ts = Time of Shower (minutes)
Fw = Flow Rate of Shower (L/min)
Fa = Flow Rate of Air in Shower (m³/min)
Vb = Volume of Bathroom (m³)

Assumptions:

EPC - Groundwater Data - RME
15 (RME default)
19 (Estimated RME)
2.4 (Average Air Flow)
12 (Average Bathroom Volume)

TABLE L-11 (Groundwater)
CALCULATION OF AIR CONCENTRATION IN SHOWER
FROM VOLATILIZATION OF GROUNDWATER (DAILY)
CENTRAL TENDENCY (CT) - SEAD-12
SEAD - 12 Remedial Investigation
Seneca Army Depot Activity

Analyte	EPC Air All-Site Wells (mg/m³)	Time of Shower -Ts (min)	Flow Rate of Shower - Fw (L/min)	EPC Groundwater (mg/l)	Flow Rate of Air in Shower-Fa (m³/min)	Volume of Bathroom-Vb (m³)	Henry Laws Constant-H (m³-atm/mol)	Asymptotic Air Conc.-Cinf (mg/m³)	Rate Constant-K (1/min)	Efficiency of Release-E (unitless)	Efficiency of Release for TCE E-TCE	Henry Laws Constant-TCE (m³-atm/mol)	Fraction Emitted* (percent)	Cderm** (Water) (mg/l)
Volatile Organics														
1,1,1-Trichloroethane	6.90E-06	10	19	1.13E-03	2.4	12	2.06E-05	1.22E-05	0.20	1.36E-03	0.6	0.0091	0.08%	1.13E-03
1,2-Dichloroethene (total)	2.96E-02	10	19	1.79E-02	2.4	12	5.59E-03	5.22E-02	0.20	3.69E-01	0.6	0.0091	20.92%	1.42E-02
Acetone	7.60E-03	10	19	3.99E-03	2.4	12	6.43E-03	1.34E-02	0.20	4.24E-01	0.6	0.0091	24.07%	3.03E-03
Toluene	2.19E-03	10	19	1.16E-03	2.4	12	6.37E-03	3.86E-03	0.20	4.20E-01	0.6	0.0091	23.84%	8.83E-04
Trichloroethene	5.03E-03	10	19	2.41E-03	2.4	12	7.04E-03	8.86E-03	0.20	4.64E-01	0.6	0.0091	26.35%	1.77E-03
Semivolatile Organics														
1,4-Dichlorobenzene	1.22E-08	10	19	9.30E-05	2.4	12	4.43E-07	2.15E-08	0.20	2.92E-05	0.6	0.0091	0.00%	9.30E-05
Benzo(a)pyrene	1.04E-08	10	19	9.70E-05	2.4	12	3.61E-07	1.83E-08	0.20	2.38E-05	0.6	0.0091	0.00%	9.70E-05
Benzo(b)fluoranthene	6.35E-09	10	19	7.60E-05	2.4	12	2.82E-07	1.12E-08	0.20	1.86E-05	0.6	0.0091	0.00%	7.60E-05
Benzo(ghi)perylene	6.08E-08	10	19	1.80E-04	2.4	12	1.14E-06	1.07E-07	0.20	7.52E-05	0.6	0.0091	0.00%	1.80E-04
Benzo(k)fluoranthene	3.10E-05	10	19	9.10E-05	2.4	12	1.15E-03	5.46E-05	0.20	7.58E-02	0.6	0.0091	4.30%	8.71E-05
Bis(2-Ethylhexyl)phthalate	2.77E-08	10	19	2.06E-04	2.4	12	4.54E-07	4.88E-08	0.20	2.99E-05	0.6	0.0091	0.00%	2.06E-04
Butylbenzylphthalate	8.61E-09	10	19	6.40E-05	2.4	12	4.54E-07	1.52E-08	0.20	2.99E-05	0.6	0.0091	0.00%	6.40E-05
Di-n-butylphthalate	2.83E-08	10	19	2.10E-04	2.4	12	4.54E-07	4.98E-08	0.20	2.99E-05	0.6	0.0091	0.00%	2.10E-04
Di-n-octylphthalate	5.52E-08	10	19	4.10E-04	2.4	12	4.54E-07	9.72E-08	0.20	2.99E-05	0.6	0.0091	0.00%	4.10E-04
Diethyl phthalate	1.39E-07	10	19	1.03E-03	2.4	12	4.54E-07	2.44E-07	0.20	2.99E-05	0.6	0.0091	0.00%	1.03E-03
Indeno(1,2,3-cd)pyrene	1.35E-08	10	19	1.00E-04	2.4	12	4.54E-07	2.37E-08	0.20	2.99E-05	0.6	0.0091	0.00%	1.00E-04
Phenol	5.78E-08	10	19	4.30E-04	2.4	12	4.54E-07	1.02E-07	0.20	2.99E-05	0.6	0.0091	0.00%	4.30E-04
Pyrene	1.08E-08	10	19	8.00E-05	2.4	12	4.54E-07	1.90E-08	0.20	2.99E-05	0.6	0.0091	0.00%	8.00E-05
Pesticides/PCBs														
Beta-BHC	1.56E-08	10	19	3.30E-06	2.4	12	1.60E-05	2.76E-08	0.20	1.05E-03	0.6	0.0091	0.06%	3.30E-06
Gamma-Chlordane	7.67E-09	10	19	4.41E-06	2.4	12	5.87E-06	1.35E-08	0.20	3.87E-04	0.6	0.0091	0.02%	4.41E-06
Heptachlor	5.81E-06	10	19	2.76E-06	2.4	12	7.10E-03	1.02E-05	0.20	4.68E-01	0.6	0.0091	26.57%	2.03E-06
Metals														
Barium	0.00E+00	10	19	9.42E-02	2.4	12	NA	0.00E+00	0.20	0.00E+00	0.6	0.0091	0.00%	9.42E-02
Cobalt	0.00E+00	10	19	1.57E-03	2.4	12	NA	0.00E+00	0.20	0.00E+00	0.6	0.0091	0.00%	1.57E-03

Concentration in Air (mg/m³) = Cinf[1+(1/(kTs)(exp(-kTs)-1)]

Asymptotic Air Conc. - Cinf (mg/m³) = [(E)(Fw)(Ct)]/Fa

Rate Constant - k (L/min) = Fa/Vb

Efficiency of Release - E (unitless) = (E-tce)(H)/(H-tce)

*** Fraction Emitted (fe) = (EPCair x Fa) / (EPCgw x Fw)**

**** Cderm = EPCgw x (1 - fe)**

Variables:

CA = Chemical Concentration in Air (mg/m³)
Ts = Time of Shower (minutes)
Fw = Flow Rate of Shower (L/min)
Fa = Flow Rate of Air in Shower (m³/min)
Vb = Volume of Bathroom (m³)

Assumptions:

EPC - Groundwater Data - RME
15 (RME default)
19 (Estimated RME)
2.4 (Average Air Flow)
12 (Average Bathroom Volume)

Table L - R1A
Resident Excess Cancer Risks for Individual Radionuclides and Pathways and Fraction of Total Risk at 30 years- ADULT
SEAD-12 Remedial Investigation
Seneca Army Depot Activity
Calculated with RESRAD using surface soil concentration

Disposal Pits A/B

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.96E-08	0.6148	6.84E-09	0.0849	0.00E+00	0	1.94E-08	0.2411	4.16E-11	0.0005	7.89E-11	0.001	4.66E-09	0.0577
H-3	0.00E+00	0	4.44E-28	0	0.00E+00	0	3.00E-26	0	2.19E-27	0	3.16E-27	0	2.87E-30	0
Total	4.96E-08	0.6148	6.84E-09	0.0849	0.00E+00	0	1.94E-08	0.2411	4.16E-11	0.0005	7.89E-11	0.001	4.66E-09	0.0577

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.06E-08	1
H-3	1.19E-23	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.84E-25	0	7.65E-25	0	1.30E-23	0
Total	1.19E-23	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.84E-25	0	7.65E-25	0	8.06E-08	1

Disposal Pit C

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.05E-07	0.025	1.69E-08	0.004	0.00E+00	0	3.98E-08	0.0095	8.53E-11	0	1.62E-10	0	9.53E-09	0.0023
H-3	0.00E+00	0	4.64E-19	0	0.00E+00	0	1.26E-17	0	8.51E-19	0	1.26E-18	0	1.54E-21	0
Pb-210	2.35E-10	0.0001	1.14E-08	0.0027	0.00E+00	0	3.58E-06	0.8511	8.95E-08	0.0213	6.96E-08	0.0165	2.14E-07	0.051
Ra-228	5.26E-08	0.0125	1.16E-09	0.0003	5.10E-09	0.0012	9.81E-09	0.0023	1.26E-10	0	2.84E-10	0.0001	3.34E-10	0.0001
Total	1.58E-07	0.0376	2.94E-08	0.007	5.10E-09	0.0012	3.63E-06	0.8629	8.97E-08	0.0213	7.00E-08	0.0166	2.24E-07	0.0533

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.72E-07	0.0408
H-3	1.17E-15	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.71E-17	0	7.51E-17	0	1.29E-15	0
Pb-210	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.97E-06	0.9427
Ra-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.94E-08	0.0165
Total	1.17E-15	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.71E-17	0	7.51E-17	0	4.21E-06	1

Former Dry Waste Disposal Pit

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	1
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	1

Table L - R1B
Resident Excess Cancer Risks for Individual Radionuclides and Pathways and Fraction of Total Risk at 30 years- CHILD
SEAD-12 Remedial Investigation
Seneca Army Depot Activity
Calculated with RESRAD using surface soil concentration

Disposal Pits A/B

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.61E-08	0.6089	9.69E-10	0.0366	0.00E+00	0	6.33E-09	0.2388	1.36E-11	0.0005	2.57E-11	0.001	3.03E-09	0.1143
H-3	0.00E+00	0	1.93E-28	0	0.00E+00	0	3.00E-26	0	2.19E-27	0	3.16E-27	0	6.49E-30	0
Total	1.61E-08	0.6089	9.69E-10	0.0366	0.00E+00	0	6.33E-09	0.2388	1.36E-11	0.0005	2.57E-11	0.001	3.03E-09	0.1143

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.65E-08	1
H-3	1.19E-23	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.84E-25	0	7.65E-25	0	1.30E-23	0
Total	1.19E-23	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.84E-25	0	7.65E-25	0	2.65E-08	1

Disposal Pit C

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	3.43E-08	0.0238	2.39E-09	0.0017	0.00E+00	0	1.30E-08	0.009	2.78E-11	0	5.26E-11	0	6.21E-09	0.0043
H-3	0.00E+00	0	2.01E-19	0	0.00E+00	0	1.25E-17	0	8.46E-19	0	1.26E-18	0	3.06E-21	0
Pb-210	7.60E-11	0.0001	1.60E-09	0.0011	0.00E+00	0	1.16E-06	0.8032	2.90E-08	0.0201	2.25E-08	0.0156	1.39E-07	0.0962
Ra-228	2.87E-08	0.0199	2.75E-10	0.0002	1.21E-09	0.0008	5.35E-09	0.0037	6.85E-11	0	1.55E-10	0.0001	3.64E-10	0.0003
Total	6.30E-08	0.0437	4.26E-09	0.003	1.21E-09	0.0008	1.18E-06	0.8159	2.91E-08	0.0201	2.27E-08	0.0158	1.45E-07	0.1007

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.59E-08	0.0387
H-3	1.16E-15	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.70E-17	0	7.47E-17	0	1.28E-15	0
Pb-210	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.35E-06	0.9363
Ra-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.61E-08	0.025
Total	1.16E-15	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.70E-17	0	7.47E-17	0	1.44E-06	1

Former Dry Wasye Disposal Pit

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	1
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	1

Table L - R2
Current Site Worker Excess Cancer Risks for Individual Radionuclides and Pathways and Fraction of Total Risk at 25 years
SEAD-12 Remedial Investigation
Seneca Army Depot Activity
Calculated with RESRAD using surface soil concentrations

Disposal Pits A/B

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	5.21E-09	0.9364	2.13E-10	0.0383	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.41E-10	0.0253
H-3	0.00E+00	0	8.27E-25	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.55E-28	0
Total	5.21E-09	0.9364	2.13E-10	0.0383	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.41E-10	0.0253

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.56E-09	1
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.27E-25	0
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.56E-09	1

Disposal Pit C

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.11E-08	0.4071	5.25E-10	0.0193	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.88E-10	0.0106
H-3	0.00E+00	0	3.84E-17	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.86E-21	0
Pb-210	2.58E-11	0.0009	3.62E-10	0.0133	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.39E-09	0.2352
Ra-228	8.44E-09	0.3108	5.51E-11	0.002	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.54E-11	0.0006
Total	1.95E-08	0.7189	9.42E-10	0.0347	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.69E-09	0.2464

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.19E-08	0.437
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.84E-17	0
Pb-210	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.78E-09	0.2495
Ra-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.51E-09	0.3134
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.72E-08	1

Former Dry Waste Disposal Pit

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0

Table L - R3

Future Park Worker Excess Cancer Risks for Individual Radionuclides and Pathways and Fraction of Total Risk at 25 years

SEAD-12 Remedial Investigation

Seneca Army Depot Activity

Calculated with RESRAD using surface soil concentration

Disposal Pits A/B

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.55E-08	0.9424	1.55E-09	0.0321	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.23E-09	0.0255
H-3	0.00E+00	0	6.89E-25	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.23E-27	0
Total	4.55E-08	0.9424	1.55E-09	0.0321	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.23E-09	0.0255

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.83E-08	1
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.92E-25	0
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.83E-08	1

Disposal Pit C

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	9.67E-08	0.4095	3.82E-09	0.0162	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.52E-09	0.0107
H-3	0.00E+00	0	3.20E-17	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.25E-20	0
Pb-210	2.25E-10	0.001	2.64E-09	0.0112	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.59E-08	0.2366
Ra-228	7.38E-08	0.3126	4.01E-10	0.0017	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.35E-10	0.0006
Total	1.71E-07	0.7231	6.86E-09	0.0291	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.85E-08	0.2478

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.03E-07	0.4363
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.21E-17	0
Pb-210	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.87E-08	0.2487
Ra-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.43E-08	0.3149
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.36E-07	1

Former Dry Waste Disposal Pit

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0

Table L - R4
Future Construction Worker Excess Cancer Risks for Individual Radionuclides and Pathways and Fraction of Total Risk at 1 year
SEAD-12 Remedial Investigation
Seneca Army Depot Activity
Calculated with RESRAD using total soil concentrations

Disposal Pits A/B

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.56E-08	0.0174	2.00E-09	0.0022	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.02E-09	0.0023
H-3	0.00E+00	0	7.28E-10	0.0008	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.32E-12	0
Pb-210	4.09E-11	0	1.57E-09	0.0018	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.08E-08	0.0568
Th-228	7.96E-07	0.8911	1.89E-08	0.0212	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.68E-09	0.0064
Total	8.12E-07	0.9086	2.32E-08	0.026	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.85E-08	0.0654

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.96E-08	0.0219
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.32E-10	0.0008
Pb-210	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	5.24E-08	0.0586
Th-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.21E-07	0.9187
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.94E-07	1

Disposal Pit C

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.61E-08	0.0126	2.40E-09	0.0019	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.02E-09	0.0016
H-3	0.00E+00	0	7.16E-09	0.0056	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.74E-11	0
Pb-210	1.94E-10	0.0002	8.54E-09	0.0067	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.31E-07	0.18
Ra-228	3.16E-08	0.0247	3.39E-10	0.0003	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.59E-10	0.0003
Th-228	9.48E-07	0.7407	2.61E-08	0.0204	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.52E-09	0.0051
Total	9.96E-07	0.7782	4.46E-08	0.0348	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.39E-07	0.187

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.06E-08	0.0161
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	7.18E-09	0.0056
Pb-210	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.39E-07	0.1869
Ra-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.23E-08	0.0252
Th-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	9.81E-07	0.7662
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.28E-06	1

Former Dry Waste Disposal Pit

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.79E-08	0.0437	2.69E-09	0.0066	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.24E-09	0.0055
H-3	0.00E+00	0	2.06E-10	0.0005	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.81E-13	0
Th-228	3.74E-07	0.9122	1.04E-08	0.0253	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.57E-09	0.0063
Total	3.92E-07	0.9559	1.33E-08	0.0324	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.81E-09	0.0117

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.29E-08	0.0557
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.07E-10	0.0005
Th-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.87E-07	0.9438
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	4.10E-07	1

Table L - R5
Future Recreational User (Child) Excess Cancer Risks for Individual Radionuclides and Pathways and Fraction of Total Risk at 5 years
SEAD-12 Remedial Investigation
Seneca Army Depot Activity
Calculated with RESRAD using surface soil concentration

Disposal Pits A/B

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	5.48E-09	0.8456	7.04E-10	0.1086	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.96E-10	0.0457
H-3	0.00E+00	0	8.65E-13	0.0001	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.53E-16	0
Total	5.48E-09	0.8456	7.05E-10	0.1087	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.96E-10	0.0457

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.48E-09	0.9999
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.65E-13	0.0001
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.48E-09	1

Disposal Pit C

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.16E-08	0.1038	1.73E-09	0.0155	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	6.06E-10	0.0054
H-3	0.00E+00	0	1.57E-09	0.014	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	2.62E-13	0
Pb-210	2.66E-11	0.0002	1.17E-09	0.0105	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.32E-08	0.1176
Ra-228	8.03E-08	0.7164	1.56E-09	0.0139	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	3.03E-10	0.0027
Total	9.20E-08	0.8205	6.03E-09	0.0538	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.41E-08	0.1257

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.40E-08	0.1247
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.57E-09	0.014
Pb-210	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.44E-08	0.1283
Ra-228	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.22E-08	0.733
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.12E-07	1

Former Dry Waste Disposal Pit

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract	risk	fract.	risk	fract.	risk	fract.	risk	fract.
H-3	0.00E+00	0	8.14E-16	0.9998	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.31E-19	0.0002
Total	0.00E+00	0	8.14E-16	0.9998	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	1.31E-19	0.0002

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
H-3	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.14E-16	1
Total	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	0.00E+00	0	8.14E-16	1

Table L - R6
Excess Cancer Risk Calculations for Groundwater Ingestion Pathway
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Onsite							
Future Recreational User (child)							
Nuclide	GW Conc.(C) (pCi/L)	Ingestion Rate (IR) (L/d)	Ingestion Rate(IR) (L/yr)	Fraction of time exposed (FE)	Exposure Duration (ED) (yrs)	Slope Factor (SF) (Risk/pCi)	Calculated Risk
Th-228	0.088378	1	365	0.038	5	2.31E-10	1.43E-09
						Total	1.43E-09
Future Resident (child)							
Nuclide	GW Conc.(C) (pCi/L)	Ingestion Rate (IR) (L/d)	Ingestion Rate(IR) (L/yr)	Fraction of time exposed (FE)	Exposure Duration (ED) (yrs)	Slope Factor (SF) (Risk/pCi)	Calculated Risk
Th-228	0.088378	1	365	0.959	6	2.31E-10	4.29E-08
						Total	4.29E-08
Future Resident (adult)							
Nuclide	GW Conc.(C) (pCi/L)	Ingestion Rate (IR) (L/d)	Ingestion Rate(IR) (L/yr)	Fraction of time exposed (FE)	Exposure Duration (ED) (yrs)	Slope Factor (SF) (Risk/pCi)	Calculated Risk
Th-228	0.088378	2	730	0.959	24	2.31E-10	3.43E-07
						Total	3.43E-07
Future Park Worker							
Nuclide	GW Conc.(C) (pCi/L)	Ingestion Rate (IR) (L/d)	Ingestion Rate(IR) (L/yr)	Fraction of time exposed (FE)	Exposure Duration (ED) (yrs)	Slope Factor (SF) (Risk/pCi)	Calculated Risk
Th-228	0.088378	1	730	0.160	25	2.31E-10	5.95E-08
						Total	5.95E-08

Table L - R7
Excess Cancer Risk Calculations for Groundwater Submersion Pathway
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Onsite								
Future Recreational User (child)								
Nuclide	GW Conc.(C) (pCi/L)	Conc (pCi/m**3)	Fraction of body submersed (FB)	Fraction of time submersed in GW (FE)	Exposure Duration (ED) (yrs)	Slope Factor (SF) (m**3/Bq-s)	Slope Factor (SF) (m**3/ pCi-yr)	Calculated Risk
Th-228	0.088378	88.378	1	4.00E-04	5	6.16E-15	7.21E-09	1.27E-09
							Total	1.27E-09
Future Resident (adult)[a]								
Nuclide	GW Conc.(C) (pCi/L)	Conc (pCi/m**3)	Fraction of body submersed (FB)	Fraction of time submersed in GW (FE)	Exposure Duration (ED) (yrs)	Slope Factor (SF) (m**3/Bq-s)	Slope Factor (SF) (m**3/ pCi-yr)	Calculated Risk
Th-228	0.088378	88.378	1	1.00E-02	30	6.16E-15	7.21E-09	1.91E-07
							Total	1.91E-07

a : It was assumed that groundwater submersion behavior (i.e., showering) was the same for both the adult and child resident

Table L - R8
Excess Cancer Risk Calculations for Surface Water Submersion Pathway
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Onsite

Future Recreational User (child)

Nuclide	Surf. Water Conc. Cw (pCi/L)	(pCi/ m**3)	Fraction of body submersed (FB)	Fraction of time submersed in SW (FE)	Exposure Duration (yr)	Slope Factor (m**3/Bq-s)	Slope Factor (m**3/ pCi-yr)	Calculated Risk
Th-227	0.165942	1.7E-04	0.236	0.0008	5	3.24E-16	3.79E-10	5.9E-17
Rn-222	56.80152	5.680E-02	0.236	0.0008	5	1.42E-18	1.66E-12	8.902E-17
Th-230	0.583696	5.837E-04	0.236	0.0008	5	1.12E-18	1.31E-12	7.215E-19
Th-232	0.123551	1.236E-04	0.236	0.0008	5	5.35E-19	6.26E-13	7.296E-20
U-234	0.4299	4.299E-04	0.236	0.0008	5	4.37E-19	5.11E-13	2.074E-19
							Total	1.494E-16

Future Resident (Child)

Nuclide	Surf. Water Conc. Cw (pCi/L)	(pCi/ m**3)	Fraction of body submersed (FB)	Fraction of time submersed in SW (FE)	Exposure Duration (yr)	Slope Factor (m**3/Bq-s)	Slope Factor (m**3/ pCi-yr)	Calculated Risk
Th-227	0.165942	1.7E-04	0.236	0.0051	6	3.24E-16	3.79E-10	4.5E-16
Rn-222	56.80152	5.680E-02	0.236	0.0051	6	1.42E-18	1.66E-12	6.810E-16
Th-230	0.583696	5.837E-04	0.236	0.0051	6	1.12E-18	1.31E-12	5.520E-18
Th-232	0.123551	1.236E-04	0.236	0.0051	6	5.35E-19	6.26E-13	5.581E-19
U-234	0.4299	4.299E-04	0.236	0.0051	6	4.37E-19	5.11E-13	1.586E-18
							Total	1.143E-15

Future Resident (adult)

Nuclide	Surf. Water Conc. Cw (pCi/L)	(pCi/ m**3)	Fraction of body submersed (FB)	Fraction of time submersed in SW (FE)	Exposure Duration (yr)	Slope Factor (m**3/Bq-s)	Slope Factor (m**3/ pCi-yr)	Calculated Risk
Th-227	0.165942	1.7E-04	0.377	0.0051	24	3.24E-16	3.79E-10	2.9E-15
Rn-222	56.80152	5.680E-02	0.377	0.0051	24	1.42E-18	1.66E-12	4.352E-15
Th-230	0.583696	5.837E-04	0.377	0.0051	24	1.12E-18	1.31E-12	3.527E-17
Th-232	0.123551	1.236E-04	0.377	0.0051	24	5.35E-19	6.26E-13	3.566E-18
U-234	0.4299	4.299E-04	0.377	0.0051	24	4.37E-19	5.11E-13	1.014E-17
							Total	7.301E-15

Future Park Worker

Nuclide	Surf. Water Conc. Cw (pCi/L)	(pCi/ m**3)	Fraction of body submersed (FB)	Fraction of time submersed in SW (FE)	Exposure Duration (yr)	Slope Factor (m**3/Bq-s)	Slope Factor (m**3/ pCi-yr)	Calculated Risk
Th-227	0.165942	1.7E-04	0.1083	0.0021	25	3.24E-16	3.79E-10	3.5E-16
Rn-222	56.80152	5.680E-02	0.1083	0.0021	25	1.42E-18	1.66E-12	5.245E-16
Th-230	0.583696	5.837E-04	0.1083	0.0021	25	1.12E-18	1.31E-12	4.251E-18
Th-232	0.123551	1.236E-04	0.1083	0.0021	25	5.35E-19	6.26E-13	4.298E-19
U-234	0.4299	4.299E-04	0.1083	0.0021	25	4.37E-19	5.11E-13	1.222E-18
							Total	8.800E-16

Offsite

Recreational User (child)

Nuclide (i)	Surf. Water Conc.(C) (pCi/L)	(pCi/ m**3)	Fraction of body submersed (FB)	Fraction of time submersed in SW (FE)	Exposure Duration (yr)	Slope Factor (m**3/Bq-s)	Slope Factor (m**3/ pCi-yr)	Calculated Risk
Ra-226	0.2	2.000E-04	0.504	0.0042	5	6.73E-15	7.87E-09	1.649E-14
U-234	1.1	1.100E-03	0.504	0.0042	5	4.37E-19	5.11E-13	5.885E-18
U-238	0.216148	2.161E-04	0.504	0.0042	5	9.52E-17	1.11E-10	2.519E-16
							Total	1.675E-14

Table L - R9
Excess Cancer Risk Calculations for Direct Radiation from Surface Water Pathway
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Onsite

Future Construction Worker

Nuclide (i)	Surf. Water Conc. Cw (pCi/L)	Surf. Water Conc. (pCi/ m**3)	Stream Thickness (m)	Fraction of Time exposed (FE)	Exp. Duration (ED) (yrs)	Slope Factor (m**2/Bq-s)	Slope Factor (m**2/ pCi-yr)	Calculated Risk
Th-227	0.165942	1.659E-04	0.3	0.2300	1	7.81E-18	9.13E-12	1.046E-16
Rn-222	56.80152	5.680E-02	0.3	0.2300	1	3.08E-20	3.60E-14	1.411E-16
Th-230	0.583696	5.837E-04	0.3	0.2300	1	4.17E-20	4.88E-14	1.964E-18
Th-232	0.123551	1.236E-04	0.3	0.2300	1	2.74E-20	3.20E-14	2.731E-19
U-234	0.4299	4.299E-04	0.3	0.2300	1	3.29E-20	3.85E-14	1.141E-18
							Total	2.491E-16

Future Recreational User (child)

Nuclide (i)	Surf. Water Conc.(C) (pCi/L)	Surf. Water Conc. (pCi/ m**3)	Stream Thickness (m)	Fraction of Time exposed (FE)	Exp. Duration (ED) (yrs)	Slope Factor (m**2/Bq-s)	Slope Factor (m**2/ pCi-yr)	Calculated Risk
Th-227	0.165942	1.659E-04	0.3	0.0190	5	7.81E-18	9.13E-12	4.319E-17
Rn-222	56.80152	5.680E-02	0.3	0.0190	5	3.08E-20	3.60E-14	5.830E-17
Th-230	0.583696	5.837E-04	0.3	0.0190	5	4.17E-20	4.88E-14	8.111E-19
Th-232	0.123551	1.236E-04	0.3	0.0190	5	2.74E-20	3.20E-14	1.128E-19
U-234	0.4299	4.299E-04	0.3	0.0190	5	3.29E-20	3.85E-14	4.713E-19
							Total	1.029E-16

Future Resident (child)

Nuclide (i)	Surf. Water Conc.(C) (pCi/L)	Surf. Water Conc. (pCi/ m**3)	Stream Thickness (m)	Fraction of Time exposed (FE)	Exp. Duration (ED) (yrs)	Slope Factor (m**2/Bq-s)	Slope Factor (m**2/ pCi-yr)	Calculated Risk
Th-227	0.165942	1.659E-04	0.3	0.123	6	7.81E-18	9.13E-12	3.363E-16
Rn-222	56.80152	5.680E-02	0.3	0.123	6	3.08E-20	3.60E-14	4.539E-16
Th-230	0.583696	5.837E-04	0.3	0.123	6	4.17E-20	4.88E-14	6.315E-18
Th-232	0.123551	1.236E-04	0.3	0.123	6	2.74E-20	3.20E-14	8.784E-19
U-234	0.4299	4.299E-04	0.3	0.123	6	3.29E-20	3.85E-14	3.670E-18
							Total	8.011E-16

Future Resident (adult)

Nuclide (i)	Surf. Water Conc.(C) (pCi/L)	Surf. Water Conc. (pCi/ m**3)	Stream Thickness (m)	Fraction of Time exposed (FE)	Exp. Duration (ED) (yrs)	Slope Factor (m**2/Bq-s)	Slope Factor (m**2/ pCi-yr)	Calculated Risk
Th-227	0.165942	1.659E-04	0.3	0.123	24	7.81E-18	9.13E-12	1.345E-15
Rn-222	56.80152	5.680E-02	0.3	0.123	24	3.08E-20	3.60E-14	1.816E-15
Th-230	0.583696	5.837E-04	0.3	0.123	24	4.17E-20	4.88E-14	2.526E-17
Th-232	0.123551	1.236E-04	0.3	0.123	24	2.74E-20	3.20E-14	3.513E-18
U-234	0.4299	4.299E-04	0.3	0.123	24	3.29E-20	3.85E-14	1.468E-17
							Total	3.204E-15

Future Outdoor Park Worker

Nuclide (i)	Surf. Water Conc.(C) (pCi/L)	Surf. Water Conc. (pCi/ m**3)	Stream Thickness (m)	Fraction of Time exposed (FE)	Exp. Duration (ED) (yrs)	Slope Factor (m**2/Bq-s)	Slope Factor (m**2/ pCi-yr)	Calculated Risk
Th-227	0.165942	1.659E-04	0.3	0.049	25	7.81E-18	9.13E-12	5.605E-16
Rn-222	56.80152	5.680E-02	0.3	0.049	25	3.08E-20	3.60E-14	7.566E-16
Th-230	0.583696	5.837E-04	0.3	0.049	25	4.17E-20	4.88E-14	1.053E-17
Th-232	0.123551	1.236E-04	0.3	0.049	25	2.74E-20	3.20E-14	1.464E-18
U-234	0.4299	4.299E-04	0.3	0.049	25	3.29E-20	3.85E-14	6.116E-18
							Total	1.335E-15

Offsite

Recreational User

Nuclide (i)	Surf. Water Conc.(C) (pCi/L)	Surf. Water Conc. (pCi/m**3)	Stream Thickness (m)	Fraction of Time exposed (FE)	Exp. Duration (ED) (yrs)	Slope Factor (m**2/Bq-s)	Slope Factor (m**2/ pCi-yr)	Calculated Risk
Ra-226	0.2	2.000E-04	1	0.038	5	1.31E-16	1.54E-10	5.893E-15
U-234	1.1	1.100E-03	1	0.038	5	3.29E-20	3.85E-14	8.115E-18
U-238	0.216148	2.161E-04	1	0.038	5	2.99E-18	3.50E-12	1.449E-16
							Total	6.046E-15

Table L - R10
Excess Cancer Risk Calculations for Sediment Ingestion Pathway
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Onsite							
Future Resident (child)							
Nuclide (i)	Sed. Conc.(C) (pCi/g)	Ingestion Rate (IR) (g/day)	Ingestion Rate (IR) (g/yr)	Fraction of Time Exposed (FE)	Exp. Duration (ED) (yr)	Slope Factor (SF) (Risk/pCi)	Calculated Risk
Cs-137	0.102903	0.2	73	0.0051	6	3.16E-11	7.32E-12
Th-234	1.60	0.2	73	0.0051	6	1.93E-11	6.95E-11
Tl-208	0.85	0.2	73	0.0051	6	1.75E-14	3.35E-14
U-238	0.1456	0.2	73	0.0051	6	6.20E-11	2.03E-11
						Total	9.71E-11
Future Resident (adult)							
Nuclide (i)	Sed. Conc.(C) (pCi/g)	Ingestion Rate (IR) (g/day)	Ingestion Rate (IR) (g/yr)	Fraction of Time Exposed (FE)	Exp. Duration (ED) (yr)	Slope Factor (SF) (Risk/pCi)	Calculated Risk
Cs-137	0.102903	0.1	36.5	0.0051	24	3.16E-11	1.46E-11
Th-234	1.60	0.1	36.5	0.0051	24	1.93E-11	1.39E-10
Tl-208	0.85	0.1	36.5	0.0051	24	1.75E-14	6.69E-14
U-238	0.1456	0.1	36.5	0.0051	24	6.20E-11	4.06E-11
						Total	1.94E-10

Table L - R11
Excess Cancer Risk Calculations for Direct Radiation from Sediment Pathway
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Onsite

Future Construction Worker

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Fraction of Time Exposed to Sediment (FE)	Exp. Duration (ED) (yrs)	Slope Factor (SF) (Risk/yr per pCi/g soil)	Calculated Risk
Cs-137	0.102903	0.23	1	2.09E-06	4.95E-08
Th-234	1.60	0.23	1	3.50E-09	1.29E-09
Tl-208	0.85	0.23	1	1.45E-05	2.83E-06
U-238	0.1456	0.23	1	6.57E-08	2.20E-09
				Total	2.89E-06

Future Recreational User (child)

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Fraction of Time Exposed to Sediment (FE)	Exp. Duration (ED) (yrs)	Slope Factor (SF) (Risk/yr per pCi/g soil)	Calculated Risk
Cs-137	0.102903	0.0192	5	2.09E-06	2.06E-08
Th-234	1.60	0.0192	5	3.50E-09	5.37E-10
Tl-208	0.85	0.0192	5	1.45E-05	1.18E-06
U-238	0.1456	0.0192	5	6.57E-08	9.17E-10
				Total	1.20E-06

Future Resident (Child)

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Fraction of Time Exposed to Sediment (FE)	Exp. Duration (ED) (yrs)	Slope Factor (SF) (Risk/yr per pCi/g soil)	Calculated Risk
Cs-137	0.102903	0.1233	6	2.09E-06	1.59E-07
Th-234	1.60	0.1233	6	3.50E-09	4.14E-09
Tl-208	0.85	0.1233	6	1.45E-05	9.12E-06
U-238	0.1456	0.1233	6	6.57E-08	7.08E-09
				Total	9.29E-06

Future Resident (Adult)

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Fraction of Time Exposed to Sediment (FE)	Exp. Duration (ED) (yrs)	Slope Factor (SF) (Risk/yr per pCi/g soil)	Calculated Risk
Cs-137	0.102903	0.1233	24	2.09E-06	6.36E-07
Th-234	1.60	0.1233	24	3.50E-09	1.66E-08
Tl-208	0.85	0.1233	24	1.45E-05	3.65E-05
U-238	0.1456	0.1233	24	6.57E-08	2.83E-08
				Total	3.71E-05

Future Park Worker

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Fraction of Time Exposed to Sediment (FE)	Exp. Duration (ED) (yrs)	Slope Factor (SF) (Risk/yr per pCi/g soil)	Calculated Risk
Cs-137	0.102903	0.0493	25	2.09E-06	2.65E-07
Th-234	1.60	0.0493	25	3.50E-09	6.90E-09
Tl-208	0.85	0.0493	25	1.45E-05	1.52E-05
U-238	0.1456	0.0493	25	6.57E-08	1.18E-08
				Total	1.55E-05

Offsite

Recreational User (child)

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Fraction of Time Exposed to Sediment (FE)	Exp. Duration (ED) (yrs)	Slope Factor (SF) (Risk/yr per pCi/g soil)	Calculated Risk
U-234	0.584884	0.0384	5	2.14E-11	2.40E-12
U-238	0.454633	0.0384	5	6.57E-08	5.73E-09
				Total	5.73E-09

Table L - R11
Excess Cancer Risk Calculations for Sediment Ingestion Pathway
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Onsite

Future Construction Worker

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Ingestion Rate (IR) (g/day)	Ingestion Rate (IR) (g/yr)	Fraction of Time Exposed (FE)	Exp. Duration (ED) (yr)	Slope Factor (SF) (Risk/pCi)	Calculated Risk
Cs-137	0.102903	0.48	175.2	0.23	1	3.16E-11	1.31E-10
Th-234	1.60	0.48	175.2	0.23	1	1.93E-11	1.24E-09
Tl-208	0.85	0.48	175.2	0.23	1	1.75E-14	5.99E-13
U-238	0.1456	0.48	175.2	0.23	1	6.20E-11	3.64E-10
						Total	1.74E-09

Future Recreational User (child)

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Ingestion Rate (IR) (g/day)	Ingestion Rate (IR) (g/yr)	Fraction of Time Exposed (FE)	Exp. Duration (ED) (yr)	Slope Factor (SF) (Risk/pCi)	Calculated Risk
Cs-137	0.102903	0.2	73	0.0008	5	3.16E-11	9.48E-13
Th-234	1.60	0.2	73	0.0008	5	1.93E-11	9.01E-12
Tl-208	0.85	0.2	73	0.0008	5	1.75E-14	4.34E-15
U-238	0.1456	0.2	73	0.0008	5	6.20E-11	2.63E-12
						Total	1.26E-11

Future Resident (child)

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Ingestion Rate (IR) (g/day)	Ingestion Rate (IR) (g/yr)	Fraction of Time Exposed (FE)	Exp. Duration (ED) (yr)	Slope Factor (SF) (Risk/pCi)	Calculated Risk
Cs-137	0.102903	0.2	73	0.0051	6	3.16E-11	7.32E-12
Th-234	1.60	0.2	73	0.0051	6	1.93E-11	6.95E-11
Tl-208	0.85	0.2	73	0.0051	6	1.75E-14	3.35E-14
U-238	0.1456	0.2	73	0.0051	6	6.20E-11	2.03E-11
						Total	9.71E-11

Future Resident (adult)

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Ingestion Rate (IR) (g/day)	Ingestion Rate (IR) (g/yr)	Fraction of Time Exposed (FE)	Exp. Duration (ED) (yr)	Slope Factor (SF) (Risk/pCi)	Calculated Risk
Cs-137	0.102903	0.1	36.5	0.0051	24	3.16E-11	1.46E-11
Th-234	1.60	0.1	36.5	0.0051	24	1.93E-11	1.39E-10
Tl-208	0.85	0.1	36.5	0.0051	24	1.75E-14	6.69E-14
U-238	0.1456	0.1	36.5	0.0051	24	6.20E-11	4.06E-11
						Total	1.94E-10

Offsite

Recreational User (child)

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Ingestion Rate (IR) (g/day)	Ingestion Rate (IR) (g/yr)	Fraction of Time Exposed (FE)	Exp. Duration (ED) (yr)	Slope Factor (SF) (Risk/pCi)	Calculated Risk
U-234	0.584884	0	0	0.0021	5	4.44E-11	0.0E+00
U-238	0.454633	0	0	0.0021	5	6.20E-11	0.0E+00
						Total	0.0E+00

Table L - R12
Excess Cancer Risk Calculations for Direct Radiation from Sediment Pathway
SEAD-12 Remedial Investigation
Seneca Army Depot Activity

Onsite

Future Construction Worker

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Fraction of Time Exposed to Sediment (FE)	Exp. Duration (ED) (yrs)	Slope Factor (SF) (Risk/yr per pCi/g soil)	Calculated Risk
Cs-137	0.102903	0.23	1	2.09E-06	4.95E-08
Th-234	1.60	0.23	1	3.50E-09	1.29E-09
Tl-208	0.85	0.23	1	1.45E-05	2.83E-06
U-238	0.1456	0.23	1	6.57E-08	2.20E-09
				Total	2.89E-06

Future Recreational User (child)

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Fraction of Time Exposed to Sediment (FE)	Exp. Duration (ED) (yrs)	Slope Factor (SF) (Risk/yr per pCi/g soil)	Calculated Risk
Cs-137	0.102903	0.0192	5	2.09E-06	2.06E-08
Th-234	1.60	0.0192	5	3.50E-09	5.37E-10
Tl-208	0.85	0.0192	5	1.45E-05	1.18E-06
U-238	0.1456	0.0192	5	6.57E-08	9.17E-10
				Total	1.20E-06

Future Resident (Child)

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Fraction of Time Exposed to Sediment (FE)	Exp. Duration (ED) (yrs)	Slope Factor (SF) (Risk/yr per pCi/g soil)	Calculated Risk
Cs-137	0.102903	0.1233	6	2.09E-06	1.59E-07
Th-234	1.60	0.1233	6	3.50E-09	4.14E-09
Tl-208	0.85	0.1233	6	1.45E-05	9.12E-06
U-238	0.1456	0.1233	6	6.57E-08	7.08E-09
				Total	9.29E-06

Future Resident (Adult)

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Fraction of Time Exposed to Sediment (FE)	Exp. Duration (ED) (yrs)	Slope Factor (SF) (Risk/yr per pCi/g soil)	Calculated Risk
Cs-137	0.102903	0.1233	24	2.09E-06	6.36E-07
Th-234	1.60	0.1233	24	3.50E-09	1.66E-08
Tl-208	0.85	0.1233	24	1.45E-05	3.65E-05
U-238	0.1456	0.1233	24	6.57E-08	2.83E-08
				Total	3.71E-05

Future Park Worker

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Fraction of Time Exposed to Sediment (FE)	Exp. Duration (ED) (yrs)	Slope Factor (SF) (Risk/yr per pCi/g soil)	Calculated Risk
Cs-137	0.102903	0.0493	25	2.09E-06	2.65E-07
Th-234	1.60	0.0493	25	3.50E-09	6.90E-09
Tl-208	0.85	0.0493	25	1.45E-05	1.52E-05
U-238	0.1456	0.0493	25	6.57E-08	1.18E-08
				Total	1.55E-05

Offsite

Recreational User (child)

Nuclide (i)	Sed. Conc.(C) (pCi/g)	Fraction of Time Exposed to Sediment (FE)	Exp. Duration (ED) (yrs)	Slope Factor (SF) (Risk/yr per pCi/g soil)	Calculated Risk
U-234	0.584884	0.0384	5	2.14E-11	2.40E-12
U-238	0.454633	0.0384	5	6.57E-08	5.73E-09
				Total	5.73E-09

APPENDIX M

ECOLOGICAL RISK ASSESSMENT

- **DATA TABLES**
- **FIELD NOTES**

DATA TABLES

APPENDIX M

List of Tables for Ecological Risk Assessment
SEAD-12
Seneca Army Depot, NY

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List of Tables for Ecological Risk Assessment
SEAD-12
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RISK CALCULATION TABLES

SOIL Group E

Meadow Vole

Short-tailed Shrew

Red-tailed Hawk

Mourning Dove

Invertebrates

SOIL Group F (Disposal Pit C)

Meadow Vole

APPENDIX M

List of Tables for Ecological Risk Assessment
SEAD-12
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APPENDIX M

List of Tables for Ecological Risk Assessment
SEAD-12
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Table

TABLE M.1
Statistical Summary
Group E - Disposal Pit A/B (SEAD-12)
Seneca Army Depot Activity

Media: Surface Soil (0-1 ft)

Class	Analyte	CAS No.	Freq of Detect	Freq %	Units	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean	Standard Deviation	95% UCL	Log Mean	Log 95% UCL	EP Conc (1)
M	Aluminum	7429905	15 / 15	100	MG/KG	--	--	7.16E+03	1.58E+04	1.11E+04	2.23E+03	1.21E+04	1.09E+04	1.23E+04	1.23E+04
M	Antimony	7440360	1 / 5	20	MG/KG	8.30E-01	1.20E+00	8.40E-01	8.40E-01	5.67E-01	1.72E-01	7.31E-01	5.48E-01	8.01E-01	8.01E-01
M	Arsenic	7440382	15 / 15	100	MG/KG	--	--	2.80E+00	4.90E+00	3.73E+00	5.39E-01	3.97E+00	3.69E+00	3.99E+00	3.99E+00
M	Barium	7440393	15 / 15	100	MG/KG	--	--	5.03E+01	8.62E+01	7.32E+01	1.09E+01	7.82E+01	7.24E+01	7.90E+01	7.90E+01
M	Beryllium	7440417	15 / 15	100	MG/KG	--	--	2.50E-01	5.90E-01	4.07E-01	8.91E-02	4.47E-01	3.98E-01	4.52E-01	4.52E-01
M	Cadmium	7440439	2 / 15	13	MG/KG	5.00E-02	4.30E-01	9.80E-01	3.20E+00	3.29E-01	8.31E-01	7.07E-01	6.80E-02	8.95E-01	8.95E-01
M	Calcium	7440702	15 / 15	100	MG/KG	--	--	1.23E+03	7.76E+04	2.41E+04	2.14E+04	3.38E+04	1.40E+04	9.32E+04	7.76E+04
M	Chromium	7440473	15 / 15	100	MG/KG	--	--	1.30E+01	2.33E+01	1.72E+01	3.01E+00	1.85E+01	1.69E+01	1.87E+01	1.87E+01
M	Cobalt	7440484	15 / 15	100	MG/KG	--	--	8.00E+00	1.75E+01	1.04E+01	2.71E+00	1.17E+01	1.02E+01	1.17E+01	1.17E+01
M	Copper	7440508	15 / 15	100	MG/KG	--	--	1.34E+01	3.25E+01	2.00E+01	5.06E+00	2.23E+01	1.95E+01	2.27E+01	2.27E+01
M	Cyanide	57125	2 / 15	13	MG/KG	5.60E-01	7.50E-01	1.20E+00	1.60E+00	4.59E-01	3.90E-01	6.36E-01	3.81E-01	5.93E-01	5.93E-01
M	Iron	7439896	15 / 15	100	MG/KG	--	--	1.63E+04	2.71E+04	2.09E+04	3.33E+03	2.24E+04	2.07E+04	2.25E+04	2.25E+04
M	Lead	7439921	15 / 15	100	MG/KG	--	--	1.10E+01	2.22E+01	1.42E+01	2.76E+00	1.55E+01	1.40E+01	1.55E+01	1.55E+01
M	Magnesium	7439954	15 / 15	100	MG/KG	--	--	2.34E+03	2.15E+04	6.87E+03	4.53E+03	8.93E+03	5.94E+03	9.28E+03	9.28E+03
M	Manganese	7439965	15 / 15	100	MG/KG	--	--	3.27E+02	1.42E+03	6.36E+02	2.50E+02	7.50E+02	6.02E+02	7.53E+02	7.53E+02
M	Mercury	7439976	3 / 15	20	MG/KG	5.00E-02	6.00E-02	7.00E-02	1.10E-01	4.13E-02	2.64E-02	5.33E-02	3.64E-02	5.26E-02	5.26E-02
M	Nickel	7440020	14 / 15	93	MG/KG	1.63E+01	1.63E+01	1.62E+01	3.99E+01	2.43E+01	6.90E+00	2.75E+01	2.32E+01	2.96E+01	2.96E+01
M	Potassium	7440097	15 / 15	100	MG/KG	--	--	8.06E+02	1.74E+03	1.23E+03	2.66E+02	1.35E+03	1.20E+03	1.37E+03	1.37E+03
M	Selenium	7782492	1 / 15	7	MG/KG	5.20E-01	1.20E+00	2.30E+00	2.30E+00	5.63E-01	4.89E-01	7.86E-01	4.79E-01	7.09E-01	7.09E-01
M	Silver	7440224	1 / 15	7	MG/KG	2.10E-01	5.20E-01	2.00E-01	2.00E-01	1.54E-01	5.55E-02	1.79E-01	1.46E-01	1.81E-01	1.81E-01
M	Sodium	7440235	3 / 15	20	MG/KG	4.48E+01	1.50E+02	5.61E+01	1.61E+02	4.53E+01	3.71E+01	6.22E+01	3.70E+01	6.28E+01	6.28E+01
M	Thallium	7440280	5 / 15	33	MG/KG	9.40E-01	1.60E+00	1.20E+00	1.80E+00	8.84E-01	4.27E-01	1.08E+00	8.00E-01	1.13E+00	1.13E+00
M	Vanadium	7440622	15 / 15	100	MG/KG	--	--	1.36E+01	2.40E+01	1.86E+01	2.89E+00	1.99E+01	1.84E+01	2.01E+01	2.01E+01
M	Zinc	7440666	15 / 15	100	MG/KG	--	--	4.50E+01	8.37E+01	5.99E+01	1.13E+01	6.50E+01	5.90E+01	6.54E+01	6.54E+01
OCP	4,4'-DDE	72559	2 / 15	13	MG/KG	3.60E-03	4.20E-03	4.80E-03	1.50E-02	3.04E-03	3.39E-03	4.58E-03	2.40E-03	3.85E-03	3.85E-03
OCP	4,4'-DDT	50293	2 / 15	13	MG/KG	3.60E-03	4.20E-03	1.80E-03	4.20E-02	4.64E-03	1.03E-02	9.34E-03	2.42E-03	5.53E-03	5.53E-03
OCP	Aroclor-1254	11097691	3 / 15	20	MG/KG	3.60E-02	4.20E-02	2.40E-02	6.70E-01	9.14E-02	1.93E-01	1.79E-01	3.11E-02	1.57E-01	1.57E-01
OCP	Dieldrin	60571	2 / 15	13	MG/KG	3.60E-03	4.20E-03	5.80E-03	1.40E-02	3.04E-03	3.19E-03	4.49E-03	2.42E-03	3.90E-03	3.90E-03
OCP	Endosulfan I	959988	1 / 15	7	MG/KG	1.90E-03	2.20E-03	1.80E-03	1.80E-03	1.07E-03	2.06E-04	1.17E-03	1.06E-03	1.15E-03	1.15E-03
OCP	Endosulfan II	33213659	1 / 15	7	MG/KG	3.60E-03	4.20E-03	2.70E-03	2.70E-03	2.03E-03	2.02E-04	2.12E-03	2.02E-03	2.12E-03	2.12E-03
OCP	Endrin	72208	2 / 15	13	MG/KG	3.60E-03	4.20E-03	2.60E-03	4.20E-03	2.17E-03	5.79E-04	2.35E-03	2.12E-03	2.31E-03	2.31E-03
OCP	Endrin aldehyde	7421934	2 / 15	13	MG/KG	3.60E-03	4.20E-03	3.50E-03	5.60E-03	2.32E-03	9.91E-04	2.77E-03	2.20E-03	2.68E-03	2.68E-03
OCP	Gamma-Chlordane	5103742	3 / 15	20	MG/KG	1.90E-03	2.20E-03	3.20E-03	1.10E-02	2.36E-03	3.17E-03	3.81E-03	1.49E-03	3.63E-03	3.63E-03
OCP	Heptachlor epoxide	1024573	2 / 15	13	MG/KG	1.90E-03	2.20E-03	3.30E-03	4.60E-03	1.41E-03	1.06E-03	1.89E-03	1.22E-03	1.77E-03	1.77E-03
SV	Benzo(a)anthracene	56553	5 / 15	33	MG/KG	7.20E-02	8.40E-02	4.00E-03	2.70E-02	2.98E-02	1.50E-02	3.66E-02	2.32E-02	6.22E-02	2.70E-02
SV	Benzo(a)pyrene	50328	5 / 15	33	MG/KG	7.20E-02	8.40E-02	5.00E-03	1.80E-02	2.97E-02	1.46E-02	3.63E-02	2.41E-02	5.40E-02	1.80E-02
SV	Benzo(b)fluoranthene	205992	6 / 15	40	MG/KG	7.20E-02	8.40E-02	4.20E-03	3.60E-02	2.97E-02	1.48E-02	3.64E-02	2.34E-02	5.93E-02	3.60E-02
SV	Benzo(ghi)perylene	191242	5 / 15	33	MG/KG	7.20E-02	8.40E-02	4.00E-03	2.30E-02	2.97E-02	1.48E-02	3.65E-02	2.34E-02	6.05E-02	2.30E-02

TABLE M.1

Statistical Summary
Group E - Disposal Pit A/B (SEAD-12)
Seneca Army Depot Activity

Media: Surface Soil (0-1 ft)

Class	Analyte	CAS No.	Freq of Detect	Freq %	Units	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean	Standard Deviation	95% UCL	Log Mean	Log 95% UCL	EP Conc (1)
SV	Benzo(k)fluoranthene	207089	4 / 15	27	MG/KG	7.20E-02	8.40E-02	7.00E-03	2.60E-02	3.20E-02	1.33E-02	3.81E-02	2.73E-02	5.29E-02	2.60E-02
SV	Bis(2-Ethylhexyl)phthalate	117817	3 / 15	20	MG/KG	7.20E-02	8.40E-02	1.00E-02	2.10E-01	4.68E-02	4.63E-02	6.79E-02	3.68E-02	6.90E-02	6.90E-02
SV	Butylbenzylphthalate	85687	1 / 15	7	MG/KG	7.20E-02	8.40E-02	6.70E-03	6.70E-03	3.72E-02	8.62E-03	4.11E-02	3.50E-02	4.98E-02	6.70E-03
SV	Carbazole	86748	1 / 15	7	MG/KG	7.20E-02	8.40E-02	1.60E-02	1.60E-02	3.78E-02	6.29E-03	4.07E-02	3.71E-02	4.28E-02	1.60E-02
SV	Chrysene	218019	7 / 15	47	MG/KG	7.20E-02	8.20E-02	4.30E-03	5.10E-02	2.76E-02	1.69E-02	3.52E-02	2.04E-02	5.83E-02	5.10E-02
SV	Di-n-butylphthalate	84742	3 / 15	20	MG/KG	7.20E-02	8.40E-02	6.00E-03	6.80E-02	3.68E-02	1.44E-02	4.34E-02	3.21E-02	5.95E-02	5.95E-02
SV	Di-n-octylphthalate	117840	2 / 15	13	MG/KG	7.20E-02	8.40E-02	6.00E-03	7.80E-03	3.52E-02	1.16E-02	4.05E-02	3.13E-02	5.46E-02	7.80E-03
SV	Dibenz(a,h)anthracene	53703	2 / 15	13	MG/KG	7.20E-02	8.40E-02	6.30E-03	1.60E-02	3.55E-02	1.02E-02	4.02E-02	3.27E-02	4.96E-02	1.60E-02
SV	Dibenzofuran	132649	1 / 15	7	MG/KG	7.20E-02	8.40E-02	5.60E-03	5.60E-03	3.71E-02	8.90E-03	4.12E-02	3.46E-02	5.20E-02	5.60E-03
SV	Fluoranthene	206440	8 / 15	53	MG/KG	7.20E-02	8.20E-02	4.10E-03	2.40E-02	2.36E-02	1.56E-02	3.07E-02	1.77E-02	4.56E-02	2.40E-02
SV	Fluorene	86737	1 / 15	7	MG/KG	7.20E-02	8.40E-02	5.40E-03	5.40E-03	3.71E-02	8.95E-03	4.12E-02	3.45E-02	5.24E-02	5.40E-03
SV	Indeno(1,2,3-cd)pyrene	193395	4 / 15	27	MG/KG	7.20E-02	8.40E-02	4.30E-03	1.80E-02	3.15E-02	1.38E-02	3.78E-02	2.63E-02	5.64E-02	1.80E-02
SV	Phenanthrene	85018	5 / 15	33	MG/KG	7.20E-02	8.40E-02	5.10E-03	8.50E-03	2.85E-02	1.60E-02	3.58E-02	2.17E-02	5.80E-02	8.50E-03
SV	Pyrene	129000	7 / 15	47	MG/KG	7.20E-02	8.20E-02	4.20E-03	2.20E-02	2.62E-02	1.51E-02	3.31E-02	2.04E-02	4.96E-02	2.20E-02
VOA	Acetone	67641	6 / 15	40	MG/KG	1.10E-02	1.20E-02	4.00E-03	5.20E-02	9.07E-03	1.19E-02	1.45E-02	6.83E-03	1.14E-02	1.14E-02
VOA	Methyl butyl ketone	591786	1 / 15	7	MG/KG	1.10E-02	1.30E-02	1.00E-03	1.00E-03	5.57E-03	1.29E-03	6.15E-03	5.23E-03	7.46E-03	1.00E-03
VOA	Methylene chloride	75092	1 / 15	7	MG/KG	1.10E-02	1.30E-02	1.00E-03	1.00E-03	5.57E-03	1.29E-03	6.15E-03	5.23E-03	7.46E-03	1.00E-03
VOA	Toluene	108883	4 / 15	27	MG/KG	1.10E-02	1.30E-02	1.00E-03	4.00E-03	4.97E-03	1.67E-03	5.73E-03	4.52E-03	6.98E-03	4.00E-03

Notes:

(1) Exposure point concentration is the lesser of the max detect value vs the log 95% UCL value.

TABLE M.2

Statistical Summary
Group E - Disposal Pit A/B (SEAD-12)
Seneca Army Depot Activity

Media: Mixed Soil (0-4 ft)

Class	Analyte	CAS No.	Freq of Detect	Freq %	Units	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean	Standard Deviation	95% UCL	Log Mean	Log 95% UCL	EP Conc (1)
M	Aluminum	7429905	23 / 23	100	MG/KG	--	--	6.10E+03	1.58E+04	1.09E+04	2.33E+03	1.17E+04	1.06E+04	1.19E+04	1.19E+04
M	Antimony	7440360	5 / 10	50	MG/KG	7.50E-01	1.20E+00	3.10E-01	1.90E+00	7.45E-01	4.99E-01	1.03E+00	6.33E-01	1.16E+00	1.16E+00
M	Arsenic	7440382	23 / 23	100	MG/KG	--	--	2.80E+00	5.50E+00	3.86E+00	6.87E-01	4.11E+00	3.81E+00	4.12E+00	4.12E+00
M	Barium	7440393	23 / 23	100	MG/KG	--	--	5.03E+01	1.25E+02	7.75E+01	1.53E+01	8.30E+01	7.61E+01	8.32E+01	8.32E+01
M	Beryllium	7440417	23 / 23	100	MG/KG	--	--	2.40E-01	6.20E-01	4.05E-01	9.74E-02	4.40E-01	3.94E-01	4.44E-01	4.44E-01
M	Cadmium	7440439	7 / 23	30	MG/KG	5.00E-02	4.30E-01	9.80E-01	9.43E+01	4.93E+00	1.96E+01	1.19E+01	1.57E-01	2.94E+01	2.94E+01
M	Calcium	7440702	23 / 23	100	MG/KG	--	--	1.23E+03	1.06E+05	3.78E+04	3.05E+04	4.87E+04	2.29E+04	1.09E+05	1.06E+05
M	Chromium	7440473	23 / 23	100	MG/KG	--	--	9.50E+00	8.33E+01	2.16E+01	1.59E+01	2.73E+01	1.89E+01	2.54E+01	2.54E+01
M	Cobalt	7440484	23 / 23	100	MG/KG	--	--	7.50E+00	1.75E+01	1.01E+01	2.37E+00	1.10E+01	9.88E+00	1.09E+01	1.09E+01
M	Copper	7440508	23 / 23	100	MG/KG	--	--	1.34E+01	2.15E+02	2.93E+01	4.07E+01	4.39E+01	2.26E+01	3.29E+01	3.29E+01
M	Cyanide	57125	2 / 23	9	MG/KG	4.80E-01	7.60E-01	1.20E+00	1.60E+00	4.05E-01	3.21E-01	5.20E-01	3.52E-01	4.68E-01	4.68E-01
M	Iron	7439896	23 / 23	100	MG/KG	--	--	1.58E+04	2.71E+04	2.10E+04	3.29E+03	2.22E+04	2.08E+04	2.23E+04	2.23E+04
M	Lead	7439921	23 / 23	100	MG/KG	--	--	6.90E+00	3.66E+02	2.94E+01	7.35E+01	5.57E+01	1.56E+01	2.94E+01	2.94E+01
M	Magnesium	7439954	23 / 23	100	MG/KG	--	--	2.34E+03	2.15E+04	8.18E+03	4.28E+03	9.71E+03	7.21E+03	1.03E+04	1.03E+04
M	Manganese	7439965	23 / 23	100	MG/KG	--	--	3.27E+02	1.42E+03	5.83E+02	2.19E+02	6.62E+02	5.55E+02	6.55E+02	6.55E+02
M	Mercury	7439976	5 / 23	22	MG/KG	5.00E-02	6.00E-02	4.00E-02	1.10E-01	3.85E-02	2.19E-02	4.63E-02	3.49E-02	4.45E-02	4.45E-02
M	Nickel	7440020	22 / 23	96	MG/KG	1.63E+01	1.63E+01	1.62E+01	4.25E+01	2.54E+01	6.86E+00	2.79E+01	2.44E+01	2.90E+01	2.90E+01
M	Potassium	7440097	23 / 23	100	MG/KG	--	--	8.06E+02	1.84E+03	1.27E+03	2.98E+02	1.38E+03	1.24E+03	1.40E+03	1.40E+03
M	Selenium	7782492	3 / 23	13	MG/KG	5.20E-01	1.20E+00	6.00E-01	2.30E+00	5.66E-01	4.10E-01	7.12E-01	5.00E-01	6.56E-01	6.56E-01
M	Silver	7440224	2 / 23	9	MG/KG	1.00E-01	5.20E-01	2.00E-01	1.19E+01	6.65E-01	2.45E+00	1.54E+00	1.73E-01	4.91E-01	4.91E-01
M	Sodium	7440235	8 / 23	35	MG/KG	4.48E+01	1.50E+02	4.52E+01	1.61E+02	5.52E+01	3.47E+01	6.77E+01	4.65E+01	7.22E+01	7.22E+01
M	Thallium	7440280	6 / 23	26	MG/KG	3.70E-01	1.60E+00	4.40E-01	1.80E+00	7.60E-01	3.94E-01	9.01E-01	6.77E-01	9.41E-01	9.41E-01
M	Vanadium	7440622	23 / 23	100	MG/KG	--	--	1.13E+01	2.40E+01	1.82E+01	3.34E+00	1.94E+01	1.79E+01	1.96E+01	1.96E+01
M	Zinc	7440666	23 / 23	100	MG/KG	--	--	4.24E+01	2.85E+02	7.28E+01	4.89E+01	9.03E+01	6.56E+01	8.33E+01	8.33E+01
OCP	4,4'-DDE	72559	4 / 23	17	MG/KG	3.60E-03	4.20E-03	2.20E-03	4.20E-02	4.40E-03	8.65E-03	7.50E-03	2.55E-03	4.91E-03	4.91E-03
OCP	4,4'-DDT	50293	2 / 23	9	MG/KG	3.60E-03	1.30E-02	1.80E-03	4.20E-02	3.89E-03	8.36E-03	6.88E-03	2.35E-03	4.03E-03	4.03E-03
OCP	Aldrin	309002	1 / 23	4	MG/KG	1.90E-03	6.50E-03	7.90E-04	7.90E-04	1.10E-03	4.74E-04	1.27E-03	1.05E-03	1.20E-03	7.90E-04
OCP	Alpha-BHC	319846	1 / 23	4	MG/KG	1.90E-03	6.50E-03	2.80E-03	2.80E-03	1.19E-03	5.85E-04	1.40E-03	1.11E-03	1.33E-03	1.33E-03
OCP	Alpha-Chlordane	5103719	1 / 23	4	MG/KG	1.90E-03	6.50E-03	1.50E-03	1.50E-03	1.13E-03	4.75E-04	1.30E-03	1.08E-03	1.23E-03	1.23E-03
OCP	Aroclor-1254	11097691	6 / 23	26	MG/KG	3.60E-02	4.20E-02	2.40E-02	3.00E+00	1.99E-01	6.30E-01	4.25E-01	3.60E-02	2.27E-01	2.27E-01
OCP	Dieldrin	60571	3 / 23	13	MG/KG	3.60E-03	4.20E-03	5.80E-03	4.00E-02	4.30E-03	8.20E-03	7.24E-03	2.54E-03	4.86E-03	4.86E-03
OCP	Endosulfan I	959988	1 / 23	4	MG/KG	1.90E-03	6.50E-03	1.80E-03	1.80E-03	1.14E-03	4.90E-04	1.32E-03	1.09E-03	1.25E-03	1.25E-03
OCP	Endosulfan II	33213659	2 / 23	9	MG/KG	3.60E-03	4.20E-03	2.70E-03	1.90E-02	2.73E-03	3.55E-03	4.00E-03	2.19E-03	2.99E-03	2.99E-03
OCP	Endrin	72208	3 / 23	13	MG/KG	3.60E-03	4.20E-03	2.60E-03	1.60E-02	2.69E-03	2.91E-03	3.41E-03	2.24E-03	2.82E-03	2.82E-03
OCP	Endrin aldehyde	7421934	2 / 23	9	MG/KG	3.60E-03	1.30E-02	3.50E-03	5.60E-03	2.38E-03	1.21E-03	2.81E-03	2.21E-03	2.68E-03	2.68E-03
OCP	Gamma-Chlordane	5103742	4 / 23	17	MG/KG	1.90E-03	2.20E-03	3.20E-03	5.80E-02	4.36E-03	1.20E-02	8.65E-03	1.54E-03	4.76E-03	4.76E-03
OCP	Heptachlor	76448	1 / 23	4	MG/KG	1.90E-03	6.50E-03	2.60E-03	2.60E-03	1.18E-03	5.61E-04	1.38E-03	1.11E-03	1.31E-03	1.31E-03
OCP	Heptachlor epoxide	1024573	3 / 23	13	MG/KG	1.90E-03	2.20E-03	3.30E-03	2.20E-02	2.18E-03	4.41E-03	3.75E-03	1.29E-03	2.39E-03	2.39E-03

TABLE M.2
Statistical Summary
Group E - Disposal Pit A/B (SEAD-12)
Seneca Army Depot Activity

Media: Mixed Soil (0-4 ft)

Class	Analyte	CAS No.	Freq of Detect	Freq %	Units	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean	Standard Deviation	95% UCL	Log Mean	Log 95% UCL	EP Conc (1)
SV	2,4-Dimethylphenol	105679	1 / 23	4	MG/KG	7.20E-02	3.80E-01	2.50E-02	2.50E-02	4.51E-02	3.18E-02	5.65E-02	4.11E-02	5.02E-02	2.50E-02
SV	2-Methylnaphthalene	91576	2 / 23	9	MG/KG	7.20E-02	4.00E-01	2.10E-02	5.60E-02	4.62E-02	3.40E-02	5.83E-02	4.16E-02	5.19E-02	5.19E-02
SV	4-Methylphenol	106445	1 / 23	4	MG/KG	7.20E-02	3.80E-01	1.40E-01	1.40E-01	5.01E-02	3.71E-02	6.34E-02	4.43E-02	5.72E-02	5.72E-02
SV	Acenaphthylene	208968	1 / 23	4	MG/KG	7.20E-02	4.00E-01	3.30E-02	3.30E-02	4.59E-02	3.37E-02	5.79E-02	4.17E-02	5.08E-02	3.30E-02
SV	Anthracene	120127	1 / 23	4	MG/KG	7.20E-02	4.00E-01	9.60E-02	9.60E-02	4.86E-02	3.51E-02	6.12E-02	4.37E-02	5.48E-02	5.48E-02
SV	Benzo(a)anthracene	56553	7 / 23	30	MG/KG	7.20E-02	8.50E-02	4.00E-03	1.80E-01	3.82E-02	3.35E-02	5.02E-02	2.88E-02	6.22E-02	6.22E-02
SV	Benzo(a)pyrene	50328	7 / 23	30	MG/KG	7.20E-02	8.50E-02	5.00E-03	2.00E-01	3.94E-02	3.71E-02	5.27E-02	3.02E-02	5.91E-02	5.91E-02
SV	Benzo(b)fluoranthene	205992	8 / 23	35	MG/KG	7.20E-02	8.50E-02	4.20E-03	1.90E-01	3.89E-02	3.52E-02	5.15E-02	2.95E-02	6.16E-02	6.16E-02
SV	Benzo(ghi)perylene	191242	6 / 23	26	MG/KG	7.20E-02	4.00E-01	4.00E-03	1.20E-01	4.34E-02	4.07E-02	5.79E-02	3.14E-02	7.26E-02	7.26E-02
SV	Benzo(k)fluoranthene	207089	6 / 23	26	MG/KG	7.20E-02	8.50E-02	7.00E-03	1.60E-01	3.93E-02	2.85E-02	4.95E-02	3.25E-02	5.52E-02	5.52E-02
SV	Bis(2-Ethylhexyl)phthalate	117817	6 / 23	26	MG/KG	7.20E-02	8.50E-02	1.00E-02	9.30E-01	1.27E-01	2.48E-01	2.16E-01	5.32E-02	1.84E-01	1.84E-01
SV	Butylbenzylphthalate	85687	1 / 23	4	MG/KG	7.20E-02	4.00E-01	6.70E-03	6.70E-03	5.13E-02	4.59E-02	6.77E-02	4.17E-02	6.59E-02	6.70E-03
SV	Carbazole	86748	1 / 23	4	MG/KG	7.20E-02	4.00E-01	1.60E-02	1.60E-02	5.17E-02	4.55E-02	6.80E-02	4.33E-02	6.13E-02	1.60E-02
SV	Chrysene	218019	9 / 23	39	MG/KG	7.20E-02	8.50E-02	4.30E-03	2.40E-01	3.97E-02	4.60E-02	5.62E-02	2.72E-02	6.61E-02	6.61E-02
SV	Di-n-butylphthalate	84742	5 / 23	22	MG/KG	7.20E-02	8.50E-02	6.00E-03	1.70E+00	1.11E-01	3.47E-01	2.36E-01	4.16E-02	1.15E-01	1.15E-01
SV	Di-n-octylphthalate	117840	4 / 23	17	MG/KG	7.20E-02	4.00E-01	5.20E-03	7.90E-03	4.70E-02	4.84E-02	6.43E-02	3.29E-02	7.65E-02	7.90E-03
SV	Dibenz(a,h)anthracene	53703	3 / 23	13	MG/KG	7.20E-02	4.00E-01	6.30E-03	5.70E-02	4.44E-02	3.52E-02	5.70E-02	3.79E-02	5.66E-02	5.66E-02
SV	Dibenzofuran	132649	1 / 23	4	MG/KG	7.20E-02	4.00E-01	5.60E-03	5.60E-03	5.13E-02	4.59E-02	6.77E-02	4.13E-02	6.73E-02	5.60E-03
SV	Fluoranthene	206440	12 / 23	52.1700	MG/KG	7.20E-02	8.20E-02	4.00E-03	4.20E-01	4.24E-02	8.37E-02	7.23E-02	2.12E-02	7.24E-02	7.24E-02
SV	Fluorene	86737	2 / 23	8.7000	MG/KG	7.20E-02	4.00E-01	5.40E-03	5.20E-02	4.53E-02	3.46E-02	5.77E-02	3.90E-02	5.77E-02	5.20E-02
SV	Indeno(1,2,3-cd)pyrene	193395	5 / 23	21.7400	MG/KG	7.20E-02	4.00E-01	4.30E-03	1.20E-01	4.46E-02	4.00E-02	5.89E-02	3.39E-02	6.80E-02	6.80E-02
SV	Naphthalene	91203	1 / 23	4.3500	MG/KG	7.20E-02	4.00E-01	6.00E-01	6.00E-01	7.72E-02	1.22E-01	1.21E-01	5.08E-02	9.08E-02	9.08E-02
SV	Phenanthrene	85018	7 / 23	30.4300	MG/KG	7.20E-02	8.50E-02	5.10E-03	3.40E-01	4.46E-02	6.58E-02	6.82E-02	2.87E-02	7.04E-02	7.04E-02
SV	Phenol	108952	2 / 23	8.7000	MG/KG	7.20E-02	8.50E-02	4.80E-02	3.00E-01	5.09E-02	5.44E-02	7.04E-02	4.31E-02	5.63E-02	5.63E-02
SV	Pyrene	129000	10 / 23	43.4800	MG/KG	7.20E-02	8.20E-02	4.20E-03	3.80E-01	4.36E-02	7.47E-02	7.04E-02	2.55E-02	7.05E-02	7.05E-02
VOA	Acetone	67641	9 / 23	39.1300	MG/KG	1.10E-02	2.80E-02	4.00E-03	5.20E-02	8.85E-03	9.87E-03	1.24E-02	7.08E-03	1.03E-02	1.03E-02
VOA	Ethyl benzene	100414	1 / 23	4.3500	MG/KG	1.10E-02	1.30E-02	4.90E-02	4.90E-02	7.74E-03	9.00E-03	1.10E-02	6.42E-03	8.52E-03	8.52E-03
VOA	Methyl butyl ketone	591786	1 / 23	4.3500	MG/KG	1.10E-02	2.80E-02	1.00E-03	1.00E-03	6.00E-03	2.03E-03	6.73E-03	5.63E-03	7.30E-03	1.00E-03
VOA	Methylene chloride	75092	1 / 23	4.3500	MG/KG	1.10E-02	2.80E-02	1.00E-03	1.00E-03	6.00E-03	2.03E-03	6.73E-03	5.63E-03	7.30E-03	1.00E-03
VOA	Toluene	108883	7 / 23	30.4300	MG/KG	1.10E-02	1.30E-02	1.00E-03	1.50E-02	6.04E-03	3.15E-03	7.17E-03	5.34E-03	7.81E-03	7.81E-03
VOA	Total Xylenes	1330207	1 / 23	4.3500	MG/KG	1.10E-02	1.30E-02	5.20E-01	5.20E-01	2.82E-02	1.07E-01	6.66E-02	7.12E-03	1.80E-02	1.80E-02
VOA	Trichloroethene	79016	3 / 23	13.0400	MG/KG	1.10E-02	1.30E-02	3.00E-03	2.60E-02	6.85E-03	4.37E-03	8.41E-03	6.25E-03	7.76E-03	7.76E-03

Notes:

(1) Exposure point concentration is the lesser of the max detect value vs the log 95% UCL value.

TABLE M.3

Statistical Summary - Radionuclides
Group E - Disposal Pit A/B (SEAD-12)
Seneca Army Depot Activity

Media: Surface Soil (0-1 ft)

Analyte	Units	Min Detect	Mean	Max Detect	Frequency of Detection	Number of Detects	Number of Analyses
Bismuth-214	pCi/g	6.50E-01	2.55E+00	3.98E+01	98%	47	48
Cesium-137	pCi/g	5.00E-02	4.38E-01	1.30E+00	79%	38	48
Cobalt-57	pCi/g	5.00E-02	6.35E-02	2.00E-01	19%	9	48
Cobalt-60	pCi/g	5.00E-02	9.48E-02	5.00E-01	21%	10	48
Lead-210	pCi/g	1.00E+00	1.03E+01	7.86E+01	69%	33	48
Lead-211	pCi/g	3.00E-01	3.07E+00	1.27E+01	35%	17	48
Lead-214	pCi/g	1.10E+00	2.55E+00	4.44E+01	100%	48	48
Plutonium-239/240	pCi/g	5.00E-02	1.07E-01	2.00E-01	58%	28	48
Radium-223	pCi/g	1.50E-01	2.79E-01	1.30E+00	15%	7	48
Radium-226	pCi/g	6.50E-01	2.55E+00	3.98E+01	98%	47	48
Radium-228	pCi/g	2.00E-01	1.77E+00	3.60E+00	98%	47	48
Thorium-227	pCi/g	1.25E-01	2.69E-01	4.00E-01	50%	2	4
Thorium-230	pCi/g	5.00E-02	6.82E-01	2.30E+00	69%	33	48
Thorium-232	pCi/g	5.00E-02	8.16E-01	2.10E+00	94%	45	48
Tritium	pCi/g	5.00E-02	5.26E+00	5.33E+01	71%	34	48
Uranium-233	pCi/g	5.00E-02	5.26E-01	1.40E+00	79%	38	48
Uranium-235	pCi/g	5.00E-02	7.66E-02	3.00E-01	31%	15	48
Uranium-238	pCi/g	5.00E-02	6.72E-01	1.00E+00	96%	46	48

TABLE M.4

Statistical Summary - Radionuclides
Group E - Disposal Pit A/B (SEAD-12)
Seneca Army Depot Activity

Media: Mixed Soil (0-4 ft)

Analyte	Units	Min Detect	Mean	Max Detect	Frequency of Detection	Number of Detects	Number of Analyses
Gross Alpha	pCi/g	1.70E+01	4.55E+01	7.40E+01	100%	2	2
Gross Beta	pCi/g	3.30E+01	4.25E+01	5.20E+01	100%	2	2
Actinium-228	pCi/g	7.40E-01	8.25E-01	9.10E-01	100%	2	2
Bismuth-214	pCi/g	6.50E-01	2.96E+00	3.98E+01	98%	55	56
Cesium-137	pCi/g	5.00E-02	4.11E-01	1.30E+00	76%	41	54
Cobalt-57	pCi/g	5.00E-02	6.20E-02	2.00E-01	17%	9	54
Cobalt-60	pCi/g	5.00E-02	9.72E-02	5.00E-01	24%	13	54
Lead-210	pCi/g	1.00E+00	9.69E+00	7.86E+01	67%	36	54
Lead-211	pCi/g	3.00E-01	3.08E+00	1.27E+01	37%	20	54
Lead-214	pCi/g	1.10E+00	2.95E+00	4.44E+01	100%	56	56
Plutonium-239/240	pCi/g	5.00E-02	1.03E-01	2.00E-01	56%	30	54
Promethium-147	pCi/g	4.20E+00	4.20E+00	4.20E+00	0%	0	1
Radium-223	pCi/g	1.50E-01	2.74E-01	1.30E+00	13%	7	54
Radium-226	pCi/g	6.50E-01	2.48E+00	3.98E+01	98%	53	54
Radium-228	pCi/g	2.00E-01	1.77E+00	3.60E+00	98%	53	54
Thallium-208	pCi/g	4.30E-01	6.55E-01	8.80E-01	100%	2	2
Thorium-227	pCi/g	1.00E-01	2.25E-01	4.00E-01	71%	5	7
Thorium-230	pCi/g	5.00E-02	6.99E-01	2.30E+00	72%	39	54
Thorium-232	pCi/g	5.00E-02	8.19E-01	2.10E+00	94%	51	54
Thorium-234	pCi/g	9.10E-01	1.26E+00	1.60E+00	100%	2	2
Tritium	pCi/g	5.00E-02	4.68E+00	5.33E+01	65%	35	54
Uranium-233	pCi/g	5.00E-02	5.15E-01	1.40E+00	78%	42	54
Uranium-235	pCi/g	5.00E-02	7.64E-02	3.00E-01	31%	17	54
Uranium-238	pCi/g	5.00E-02	6.53E-01	1.00E+00	93%	50	54

TABLE M.5

Statistical Summary
Group F - Disposal Pit C (SEAD-12)
Seneca Army Depot Activity

Media: Surface Soil (0-1 ft)

Class	Analyte	CAS No.	Freq of Detect	Freq %	Units	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean	Standard Deviation	95% UCL	Log Mean	Log 95% UCL	EP Conc (1)
M	Aluminum	7429905	16 / 16	100	MG/KG	--	--	6.17E+03	1.41E+04	1.05E+04	2.42E+03	1.16E+04	1.02E+04	1.19E+04	1.19E+04
M	Antimony	7440360	1 / 3	33	MG/KG	1.10E+00	1.40E+00	2.50E-01	2.50E-01	5.00E-01	2.29E-01	8.86E-01	4.58E-01	7.61E+00	2.50E-01
M	Arsenic	7440382	16 / 16	100	MG/KG	--	--	2.10E+00	5.80E+00	3.75E+00	8.78E-01	4.13E+00	3.66E+00	4.20E+00	4.20E+00
M	Barium	7440393	16 / 16	100	MG/KG	--	--	5.18E+01	1.06E+02	8.32E+01	1.59E+01	9.02E+01	8.16E+01	9.18E+01	9.18E+01
M	Beryllium	7440417	16 / 16	100	MG/KG	--	--	2.60E-01	6.90E-01	4.51E-01	1.23E-01	5.05E-01	4.35E-01	5.18E-01	5.18E-01
M	Cadmium	7440439	1 / 16	6	MG/KG	5.00E-02	4.60E-01	7.00E-01	7.00E-01	1.10E-01	1.72E-01	1.86E-01	5.68E-02	2.11E-01	2.11E-01
M	Calcium	7440702	16 / 16	100	MG/KG	--	--	2.62E+03	7.59E+04	3.00E+04	2.49E+04	4.10E+04	1.88E+04	8.18E+04	7.59E+04
M	Chromium	7440473	16 / 16	100	MG/KG	--	--	1.07E+01	2.46E+01	1.66E+01	4.21E+00	1.85E+01	1.61E+01	1.87E+01	1.87E+01
M	Cobalt	7440484	16 / 16	100	MG/KG	--	--	6.80E+00	1.16E+01	9.23E+00	1.38E+00	9.83E+00	9.13E+00	9.90E+00	9.90E+00
M	Copper	7440508	16 / 16	100	MG/KG	--	--	1.46E+01	2.60E+01	1.89E+01	3.44E+00	2.04E+01	1.86E+01	2.05E+01	2.05E+01
M	Iron	7439896	16 / 16	100	MG/KG	--	--	1.54E+04	2.61E+04	2.07E+04	3.10E+03	2.21E+04	2.05E+04	2.23E+04	2.23E+04
M	Lead	7439921	16 / 16	100	MG/KG	--	--	6.70E+00	3.98E+01	1.72E+01	9.34E+00	2.13E+01	1.52E+01	2.26E+01	2.26E+01
M	Magnesium	7439954	16 / 16	100	MG/KG	--	--	3.07E+03	1.86E+04	8.08E+03	5.24E+03	1.04E+04	6.81E+03	1.12E+04	1.12E+04
M	Manganese	7439965	16 / 16	100	MG/KG	--	--	3.12E+02	7.00E+02	5.14E+02	1.38E+02	5.75E+02	4.96E+02	5.90E+02	5.90E+02
M	Mercury	7439976	6 / 16	38	MG/KG	5.00E-02	6.00E-02	6.00E-02	1.00E-01	4.34E-02	2.34E-02	5.37E-02	3.86E-02	5.58E-02	5.58E-02
M	Nickel	7440020	14 / 16	88	MG/KG	1.72E+01	2.21E+01	1.87E+01	3.49E+01	2.23E+01	6.78E+00	2.53E+01	2.12E+01	2.70E+01	2.70E+01
M	Potassium	7440097	16 / 16	100	MG/KG	--	--	7.87E+02	1.98E+03	1.13E+03	3.06E+02	1.26E+03	1.10E+03	1.27E+03	1.27E+03
M	Selenium	7782492	6 / 16	38	MG/KG	7.60E-01	1.10E+00	4.30E-01	1.20E+00	6.07E-01	2.55E-01	7.19E-01	5.66E-01	7.30E-01	7.30E-01
M	Silver	7440224	1 / 16	6	MG/KG	8.00E-02	3.10E-01	3.00E-01	3.00E-01	1.27E-01	5.25E-02	1.50E-01	1.19E-01	1.55E-01	1.55E-01
M	Sodium	7440235	9 / 16	56	MG/KG	4.38E+01	6.42E+01	4.84E+01	2.67E+02	6.66E+01	6.05E+01	9.31E+01	5.13E+01	9.92E+01	9.92E+01
M	Thallium	7440280	7 / 16	44	MG/KG	8.60E-01	1.30E+00	4.80E-01	1.70E+00	8.80E-01	5.06E-01	1.10E+00	7.61E-01	1.19E+00	1.19E+00
M	Vanadium	7440622	16 / 16	100	MG/KG	--	--	1.17E+01	2.46E+01	1.84E+01	3.76E+00	2.01E+01	1.81E+01	2.05E+01	2.05E+01
M	Zinc	7440666	16 / 16	100	MG/KG	--	--	4.10E+01	6.56E+02	1.04E+02	1.51E+02	1.70E+02	7.13E+01	1.37E+02	1.37E+02
OCP	4,4'-DDD	72548	4 / 16	25	MG/KG	3.60E-03	4.30E-03	2.20E-03	1.40E-02	3.33E-03	3.34E-03	4.80E-03	2.59E-03	4.46E-03	4.46E-03
OCP	4,4'-DDE	72559	3 / 16	19	MG/KG	3.60E-03	4.30E-03	2.50E-03	6.40E-03	2.51E-03	1.40E-03	3.13E-03	2.30E-03	3.01E-03	3.01E-03
OCP	4,4'-DDT	50293	4 / 16	25	MG/KG	3.60E-03	4.30E-03	2.20E-03	3.80E-03	2.18E-03	5.19E-04	2.41E-03	2.14E-03	2.39E-03	2.39E-03
OCP	Heptachlor	76448	1 / 16	6	MG/KG	1.90E-03	2.20E-03	1.05E-03	1.05E-03	1.02E-03	6.11E-05	1.04E-03	1.02E-03	1.04E-03	1.04E-03
SV	2-Methylnaphthalene	91576	1 / 16	6	MG/KG	7.20E-02	3.80E-01	7.80E-03	7.80E-03	4.66E-02	3.91E-02	6.37E-02	3.90E-02	6.40E-02	7.80E-03
SV	Acenaphthene	83329	4 / 16	25	MG/KG	7.20E-02	8.60E-02	5.00E-03	4.40E-02	3.36E-02	1.36E-02	3.95E-02	2.84E-02	5.74E-02	4.40E-02
SV	Anthracene	120127	6 / 16	38	MG/KG	7.20E-02	8.50E-02	4.60E-03	6.30E-02	3.37E-02	1.76E-02	4.14E-02	2.65E-02	6.55E-02	6.30E-02
SV	Benzo(a)anthracene	56553	12 / 16	75	MG/KG	7.30E-02	8.50E-02	5.30E-03	2.00E-01	3.77E-02	4.92E-02	5.92E-02	2.20E-02	7.88E-02	7.88E-02
SV	Benzo(a)pyrene	50328	13 / 16	81	MG/KG	7.30E-02	8.50E-02	4.80E-03	1.00E-01	3.00E-02	2.91E-02	4.27E-02	2.00E-02	5.80E-02	5.80E-02
SV	Benzo(b)fluoranthene	205992	12 / 16	75	MG/KG	7.30E-02	8.50E-02	5.00E-03	2.00E-01	3.94E-02	4.83E-02	6.06E-02	2.47E-02	7.56E-02	7.56E-02
SV	Benzo(ghi)perylene	191242	10 / 16	63	MG/KG	7.20E-02	8.50E-02	7.50E-03	3.50E-02	2.58E-02	1.28E-02	3.14E-02	2.21E-02	3.81E-02	3.50E-02
SV	Benzo(k)fluoranthene	207089	12 / 16	75	MG/KG	7.30E-02	8.50E-02	5.10E-03	1.70E-01	3.57E-02	4.03E-02	5.34E-02	2.35E-02	6.64E-02	6.64E-02
SV	Bis(2-Ethylhexyl)phthalate	117817	1 / 16	6	MG/KG	7.20E-02	3.80E-01	5.80E-03	5.80E-03	4.80E-02	3.91E-02	6.52E-02	3.97E-02	7.09E-02	5.80E-03
SV	Butylbenzylphthalate	85687	1 / 16	6	MG/KG	7.20E-02	3.80E-01	4.10E-03	4.10E-03	4.65E-02	3.93E-02	6.37E-02	3.76E-02	7.39E-02	4.10E-03
SV	Carbazole	86748	5 / 16	31	MG/KG	7.20E-02	8.60E-02	6.40E-03	4.00E-02	3.20E-02	1.35E-02	3.79E-02	2.73E-02	5.08E-02	4.00E-02

TABLE M.5
Statistical Summary
Group F - Disposal Pit C (SEAD-12)
Seneca Army Depot Activity

Media: Surface Soil (0-1 ft)

Class	Analyte	CAS No.	Freq of Detect	Freq %	Units	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean	Standard Deviation	95% UCL	Log Mean	Log 95% UCL	EP Conc (1)
SV	Chrysene	218019	14 / 16	88	MG/KG	7.40E-02	7.50E-02	4.50E-03	3.10E-01	4.57E-02	7.69E-02	7.95E-02	2.15E-02	1.03E-01	1.03E-01
SV	Di-n-butylphthalate	84742	3 / 16	19	MG/KG	7.20E-02	8.60E-02	4.20E-03	4.70E-02	3.52E-02	1.24E-02	4.06E-02	3.00E-02	6.32E-02	4.70E-02
SV	Di-n-octylphthalate	117840	3 / 16	19	MG/KG	7.20E-02	3.80E-01	7.30E-03	1.50E-02	4.32E-02	4.09E-02	6.12E-02	3.32E-02	6.90E-02	1.50E-02
SV	Dibenz(a,h)anthracene	53703	7 / 16	44	MG/KG	7.20E-02	8.50E-02	5.60E-03	4.30E-02	2.86E-02	1.53E-02	3.52E-02	2.25E-02	5.22E-02	4.30E-02
SV	Fluoranthene	206440	12 / 16	75	MG/KG	7.30E-02	8.50E-02	5.10E-03	3.00E-01	6.12E-02	8.14E-02	9.69E-02	3.46E-02	1.31E-01	1.31E-01
SV	Fluorene	86737	1 / 16	6	MG/KG	7.20E-02	8.60E-02	3.50E-02	3.50E-02	3.88E-02	2.69E-03	4.00E-02	3.87E-02	4.00E-02	3.50E-02
SV	Indeno(1,2,3-cd)pyrene	193395	10 / 16	63	MG/KG	7.20E-02	8.50E-02	6.00E-03	6.90E-02	2.83E-02	1.76E-02	3.61E-02	2.25E-02	4.74E-02	4.74E-02
SV	Phenanthrene	85018	13 / 16	81	MG/KG	7.30E-02	7.50E-02	6.00E-03	2.80E-01	4.02E-02	6.63E-02	6.93E-02	2.12E-02	8.13E-02	8.13E-02
SV	Pyrene	129000	12 / 16	75	MG/KG	7.30E-02	8.50E-02	1.00E-02	3.10E-01	6.25E-02	8.44E-02	9.95E-02	3.66E-02	1.15E-01	1.15E-01
VOA	Acetone	67641	7 / 16	44	MG/KG	1.10E-02	1.40E-02	7.00E-03	6.10E-02	1.06E-02	1.36E-02	1.66E-02	7.98E-03	1.34E-02	1.34E-02
VOA	Methylene chloride	75092	1 / 16	6	MG/KG	1.10E-02	1.40E-02	1.80E-01	1.80E-01	1.69E-02	4.35E-02	3.60E-02	7.44E-03	1.85E-02	1.85E-02
VOA	Toluene	108883	1 / 16	6	MG/KG	1.10E-02	1.40E-02	6.00E-03	6.00E-03	6.03E-03	4.91E-04	6.25E-03	6.01E-03	6.25E-03	6.00E-03

Notes:

(1) Exposure point concentration is the lesser of the max detect value vs the log 95% UCL value.

TABLE M.6

Statistical Summary
Group F - Disposal Pit C (SEAD-12)
Seneca Army Depot Activity

Media: Mixed Soil (0-4 ft)

Class	Analyte	CAS No.	Freq of Detect	Freq %	Units	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean	Standard Deviation	95% UCL	Log Mean	Log 95% UCL	EP Conc [1]
M	Aluminum	7429905	32 / 32	100	MG/KG	--	--	4.14E+03	1.86E+04	1.06E+04	2.91E+03	1.15E+04	1.02E+04	1.17E+04	1.17E+04
M	Antimony	7440360	2 / 8	25	MG/KG	1.80E-01	1.40E+00	2.50E-01	3.90E-01	2.95E-01	2.29E-01	4.48E-01	2.26E-01	7.18E-01	3.90E-01
M	Arsenic	7440382	32 / 32	100	MG/KG	--	--	2.10E+00	7.70E+00	4.20E+00	1.14E+00	4.54E+00	4.06E+00	4.56E+00	4.56E+00
M	Barium	7440393	32 / 32	100	MG/KG	--	--	3.89E+01	1.35E+02	8.12E+01	2.04E+01	8.73E+01	7.86E+01	8.86E+01	8.86E+01
M	Beryllium	7440417	32 / 32	100	MG/KG	--	--	2.10E-01	8.30E-01	4.57E-01	1.44E-01	5.00E-01	4.34E-01	5.09E-01	5.09E-01
M	Cadmium	7440439	6 / 32	19	MG/KG	5.00E-02	4.60E-01	4.00E-01	3.60E+00	2.66E-01	6.60E-01	4.64E-01	7.19E-02	3.98E-01	3.98E-01
M	Calcium	7440702	32 / 32	100	MG/KG	--	--	2.62E+03	2.24E+05	5.20E+04	4.90E+04	6.67E+04	3.17E+04	1.03E+05	1.03E+05
M	Chromium	7440473	32 / 32	100	MG/KG	--	--	6.70E+00	2.97E+01	1.69E+01	4.90E+00	1.84E+01	1.62E+01	1.87E+01	1.87E+01
M	Cobalt	7440484	32 / 32	100	MG/KG	--	--	4.90E+00	1.63E+01	9.56E+00	2.26E+00	1.02E+01	9.32E+00	1.03E+01	1.03E+01
M	Copper	7440508	32 / 32	100	MG/KG	--	--	1.40E+01	7.45E+01	2.23E+01	1.10E+01	2.56E+01	2.08E+01	2.45E+01	2.45E+01
M	Cyanide	57125	1 / 32	3	MG/KG	4.60E-01	1.00E+00	2.20E+00	2.20E+00	3.67E-01	3.38E-01	4.69E-01	3.24E-01	3.95E-01	3.95E-01
M	Iron	7439896	32 / 32	100	MG/KG	--	--	1.13E+04	5.10E+04	2.17E+04	7.26E+03	2.39E+04	2.08E+04	2.37E+04	2.37E+04
M	Lead	7439921	32 / 32	100	MG/KG	--	--	6.70E+00	9.09E+01	2.02E+01	1.62E+01	2.51E+01	1.68E+01	2.42E+01	2.42E+01
M	Magnesium	7439954	32 / 32	100	MG/KG	--	--	3.07E+03	2.51E+04	9.89E+03	5.37E+03	1.15E+04	8.58E+03	1.21E+04	1.21E+04
M	Manganese	7439965	32 / 32	100	MG/KG	--	--	1.67E+02	8.57E+02	4.90E+02	1.57E+02	5.37E+02	4.65E+02	5.50E+02	5.50E+02
M	Mercury	7439976	14 / 32	44	MG/KG	5.00E-02	9.00E-02	3.00E-02	1.50E-01	4.83E-02	3.16E-02	5.78E-02	4.11E-02	5.76E-02	5.76E-02
M	Nickel	7440020	30 / 32	94	MG/KG	1.72E+01	2.21E+01	1.23E+01	4.55E+01	2.50E+01	8.05E+00	2.74E+01	2.36E+01	2.82E+01	2.82E+01
M	Potassium	7440097	32 / 32	100	MG/KG	--	--	7.31E+02	3.67E+03	1.36E+03	6.42E+02	1.55E+03	1.25E+03	1.53E+03	1.53E+03
M	Selenium	7782492	13 / 32	41	MG/KG	5.40E-01	1.10E+00	4.30E-01	1.90E+00	7.11E-01	4.03E-01	8.31E-01	6.26E-01	8.36E-01	8.36E-01
M	Silver	7440224	3 / 32	9	MG/KG	7.00E-02	3.90E-01	2.70E-01	3.90E-01	1.28E-01	7.35E-02	1.50E-01	1.12E-01	1.55E-01	1.55E-01
M	Sodium	7440235	20 / 32	63	MG/KG	2.65E+01	6.42E+01	3.03E+01	1.42E+03	1.16E+02	2.45E+02	1.89E+02	6.13E+01	1.46E+02	1.46E+02
M	Thallium	7440280	13 / 32	41	MG/KG	3.80E-01	1.70E+00	4.10E-01	1.70E+00	7.54E-01	4.13E-01	8.78E-01	6.65E-01	8.95E-01	8.95E-01
M	Vanadium	7440622	32 / 32	100	MG/KG	--	--	1.11E+01	3.64E+01	1.89E+01	4.79E+00	2.03E+01	1.83E+01	2.04E+01	2.04E+01
M	Zinc	7440666	32 / 32	100	MG/KG	--	--	4.10E+01	6.08E+03	2.96E+02	1.06E+03	6.15E+02	9.27E+01	2.38E+02	2.38E+02
OCP	4,4'-DDD	72548	4 / 32	13	MG/KG	3.60E-03	6.10E-03	2.20E-03	1.40E-02	2.70E-03	2.42E-03	3.43E-03	2.30E-03	2.99E-03	2.99E-03
OCP	4,4'-DDE	72559	6 / 32	19	MG/KG	3.60E-03	6.10E-03	2.10E-03	6.40E-03	2.33E-03	1.03E-03	2.64E-03	2.20E-03	2.53E-03	2.53E-03
OCP	4,4'-DDT	50293	7 / 32	22	MG/KG	3.60E-03	6.10E-03	2.20E-03	4.40E-03	2.28E-03	6.31E-04	2.47E-03	2.21E-03	2.44E-03	2.44E-03
OCP	Alpha-Chlordane	5103719	1 / 32	3	MG/KG	1.80E-03	3.10E-03	2.60E-03	2.60E-03	1.08E-03	3.00E-04	1.17E-03	1.05E-03	1.14E-03	1.14E-03
OCP	Gamma-Chlordane	5103742	1 / 32	3	MG/KG	1.80E-03	3.10E-03	2.30E-03	2.30E-03	1.07E-03	2.51E-04	1.14E-03	1.05E-03	1.12E-03	1.12E-03
OCP	Heptachlor	76448	1 / 32	3	MG/KG	1.90E-03	3.10E-03	1.05E-03	1.05E-03	1.04E-03	1.27E-04	1.08E-03	1.04E-03	1.08E-03	1.05E-03
SV	2-Methylnaphthalene	91576	3 / 31	10	MG/KG	7.20E-02	5.40E-01	4.40E-03	7.80E-03	6.96E-02	7.15E-02	9.14E-02	4.58E-02	1.07E-01	7.80E-03
SV	Acenaphthene	83329	5 / 31	16	MG/KG	7.20E-02	5.40E-01	5.00E-03	4.40E-02	6.42E-02	6.85E-02	8.50E-02	4.26E-02	9.55E-02	4.40E-02
SV	Anthracene	120127	10 / 31	32	MG/KG	7.20E-02	4.30E-01	4.60E-03	6.30E-02	5.54E-02	5.82E-02	7.32E-02	3.60E-02	8.94E-02	6.30E-02
SV	Benzo(a)anthracene	56553	21 / 31	68	MG/KG	7.30E-02	4.30E-01	5.30E-03	2.00E-01	5.75E-02	6.99E-02	7.88E-02	2.86E-02	1.08E-01	1.08E-01
SV	Benzo(a)pyrene	50328	23 / 32	72	MG/KG	7.30E-02	4.30E-01	4.80E-03	1.80E-01	5.39E-02	6.61E-02	7.37E-02	2.78E-02	9.42E-02	9.42E-02
SV	Benzo(b)fluoranthene	205992	22 / 31	71	MG/KG	7.30E-02	4.30E-01	5.00E-03	3.20E-01	6.39E-02	8.26E-02	8.90E-02	3.13E-02	1.14E-01	1.14E-01

TABLE M.6

Statistical Summary
Group F - Disposal Pit C (SEAD-12)
Seneca Army Depot Activity

Media: Mixed Soil (0-4 ft)

Class	Analyte	CAS No.	Freq of Detect	Freq %	Units	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean	Standard Deviation	95% UCL	Log Mean	Log 95% UCL	EP Conc (1)
SV	Benzo(ghi)perylene	191242	18 / 32	56	MG/KG	7.20E-02	4.30E-01	4.90E-03	9.80E-02	5.04E-02	6.00E-02	6.84E-02	3.02E-02	7.65E-02	7.65E-02
SV	Benzo(k)fluoranthene	207089	18 / 31	58	MG/KG	7.30E-02	5.40E-01	5.10E-03	1.70E-01	6.30E-02	7.48E-02	8.58E-02	3.41E-02	1.08E-01	1.08E-01
SV	Chrysene	218019	24 / 31	77	MG/KG	7.40E-02	4.30E-01	4.50E-03	3.10E-01	6.42E-02	8.35E-02	8.96E-02	2.94E-02	1.24E-01	1.24E-01
SV	Dibenz(a,h)anthracene	53703	9 / 31	29	MG/KG	7.20E-02	4.30E-01	5.60E-03	9.90E-02	5.63E-02	5.86E-02	7.41E-02	3.71E-02	8.71E-02	8.71E-02
SV	Fluoranthene	206440	22 / 32	69	MG/KG	7.30E-02	4.30E-01	5.10E-03	3.20E-01	8.06E-02	8.95E-02	1.07E-01	4.53E-02	1.40E-01	1.40E-01
SV	Fluorene	86737	2 / 31	6	MG/KG	7.20E-02	5.40E-01	1.20E-02	3.50E-02	6.68E-02	6.66E-02	8.71E-02	4.99E-02	8.20E-02	3.50E-02
SV	Indeno(1,2,3-cd)pyrene	193395	16 / 31	52	MG/KG	7.20E-02	4.30E-01	6.00E-03	1.40E-01	5.42E-02	6.23E-02	7.32E-02	3.15E-02	8.98E-02	8.98E-02
SV	Phenanthrene	85018	22 / 31	71	MG/KG	7.30E-02	4.30E-01	5.00E-03	2.80E-01	5.92E-02	7.55E-02	8.22E-02	2.90E-02	1.09E-01	1.09E-01
SV	Pyrene	129000	22 / 32	69	MG/KG	7.30E-02	4.30E-01	8.20E-03	3.10E-01	7.68E-02	8.47E-02	1.02E-01	4.41E-02	1.26E-01	1.26E-01
SV	Bis(2-Ethylhexyl)phthalate	117817	5 / 32	16	MG/KG	7.20E-02	7.70E-01	5.00E-03	1.60E-02	7.86E-02	9.04E-02	1.06E-01	4.71E-02	1.25E-01	1.60E-02
SV	Butylbenzylphthalate	85687	5 / 31	16	MG/KG	7.20E-02	5.40E-01	4.10E-03	3.00E-02	6.91E-02	7.16E-02	9.09E-02	4.63E-02	1.01E-01	3.00E-02
SV	Carbazole	86748	7 / 31	23	MG/KG	7.20E-02	5.40E-01	6.40E-03	4.00E-02	6.25E-02	6.93E-02	8.36E-02	4.01E-02	9.39E-02	4.00E-02
SV	Di-n-butylphthalate	84742	6 / 31	19	MG/KG	7.20E-02	8.50E-01	4.20E-03	5.00E-02	9.27E-02	1.09E-01	1.26E-01	5.16E-02	1.69E-01	5.00E-02
SV	Di-n-octylphthalate	117840	3 / 31	10	MG/KG	7.20E-02	5.40E-01	7.30E-03	1.50E-02	6.99E-02	7.12E-02	9.16E-02	4.78E-02	9.84E-02	1.50E-02
SV	Dibenzofuran	132649	1 / 31	3	MG/KG	7.20E-02	5.40E-01	4.10E-03	4.10E-03	7.15E-02	7.02E-02	9.29E-02	5.08E-02	9.88E-02	4.10E-03
VOA	Acetone	67641	8 / 32	25	MG/KG	1.10E-02	1.70E-02	7.00E-03	6.10E-02	8.87E-03	9.88E-03	1.18E-02	7.35E-03	9.66E-03	9.66E-03
VOA	Chlorobenzene	108907	2 / 32	6	MG/KG	1.10E-02	1.60E-02	1.00E-03	5.00E-03	5.91E-03	1.10E-03	6.24E-03	5.70E-03	6.72E-03	5.00E-03
VOA	Methylene chloride	75092	2 / 32	6	MG/KG	1.10E-02	1.60E-02	1.00E-03	1.80E-01	1.14E-02	3.08E-02	2.06E-02	6.38E-03	1.05E-02	1.05E-02
VOA	Toluene	108883	2 / 32	6	MG/KG	1.10E-02	1.60E-02	2.00E-03	6.00E-03	5.98E-03	9.44E-04	6.27E-03	5.88E-03	6.44E-03	6.00E-03
VOA	Trichloroethene	79016	1 / 32	3	MG/KG	1.10E-02	1.60E-02	2.00E-03	2.00E-03	5.97E-03	9.48E-04	6.25E-03	5.86E-03	6.43E-03	2.00E-03

Notes:

(1) Exposure point concentration is the lesser of the max detect value vs the log 95% UCL value.

TABLE M.7

Statistical Summary - Radionuclides
Group F - Disposal Pit C (SEAD-12)
Seneca Army Depot Activity

Media: Surface Soil (0-1 ft)

Analyte	Units	Min Detect	Mean	Max Detect	Frequency of Detection	Number of Detects	Number of Analyses
Gross Alpha	pCi/g	1.40E+01	1.40E+01	1.40E+01	100%	1	1
Gross Beta	pCi/g	2.90E+01	2.90E+01	2.90E+01	100%	1	1
Actinium-228	pCi/g	9.80E-01	9.80E-01	9.80E-01	100%	1	1
Bismuth-214	pCi/g	8.60E-01	1.82E+00	5.80E+00	100%	62	62
Cesium-137	pCi/g	5.00E-02	3.75E-01	1.30E+00	72%	44	61
Cobalt-57	pCi/g	5.00E-02	6.68E-02	3.75E-01	18%	11	61
Cobalt-60	pCi/g	5.00E-02	1.00E-01	7.00E-01	20%	12	61
Lead-210	pCi/g	6.00E-01	1.16E+01	6.89E+01	72%	44	61
Lead-211	pCi/g	1.50E-01	2.33E+00	2.03E+01	38%	23	61
Lead-214	pCi/g	8.80E-01	1.59E+00	3.40E+00	100%	62	62
Plutonium-239/240	pCi/g	5.00E-02	9.02E-02	2.00E-01	39%	24	61
Promethium-147	pCi/g	4.20E+00	4.20E+00	4.20E+00	0%	0	1
Radium-223	pCi/g	1.50E-01	3.37E-01	1.70E+00	36%	22	61
Radium-226	pCi/g	5.00E-02	1.80E+00	5.80E+00	98%	60	61
Radium-228	pCi/g	5.00E-02	1.83E+00	3.50E+00	97%	59	61
Thallium-208	pCi/g	4.90E-01	4.90E-01	4.90E-01	100%	1	1
Thorium-230	pCi/g	5.00E-02	4.74E-01	1.40E+00	54%	33	61
Thorium-232	pCi/g	5.00E-02	8.83E-01	1.30E+00	98%	60	61
Tritium	pCi/g	5.00E-02	1.00E+01	1.30E+02	75%	46	61
Uranium-233	pCi/g	5.00E-02	5.95E-01	1.20E+00	80%	49	61
Uranium-235	pCi/g	5.00E-02	8.11E-02	4.00E-01	44%	27	61
Uranium-238	pCi/g	5.00E-02	7.48E-01	1.30E+00	98%	60	61

TABLE M.8

Statistical Summary - Radionuclides
Group F - Disposal Pit C (SEAD-12)
Seneca Army Depot Activity

Media: Mixed Soil (0-4 ft)

Analyte	Units	Min Detect	Mean	Max Detect	Frequency of Detection	Number of Detects	Number of Analyses
Gross Alpha	pCi/g	7.00E+00	1.37E+01	2.10E+01	100%	6	6
Gross Beta	pCi/g	1.70E+01	2.48E+01	3.00E+01	100%	6	6
Actinium-228	pCi/g	7.20E-01	9.03E-01	1.20E+00	100%	6	6
Bismuth-214	pCi/g	6.10E-01	1.71E+00	5.80E+00	100%	78	78
Cesium-137	pCi/g	5.00E-02	3.94E-01	1.30E+00	75%	54	72
Cobalt-57	pCi/g	5.00E-02	6.77E-02	3.75E-01	19%	14	72
Cobalt-60	pCi/g	5.00E-02	1.39E-01	7.00E-01	32%	23	72
Lead-210	pCi/g	6.00E-01	1.14E+01	6.89E+01	76%	55	72
Lead-211	pCi/g	1.50E-01	2.63E+00	2.03E+01	47%	34	72
Lead-214	pCi/g	7.20E-01	1.53E+00	3.40E+00	100%	78	78
Plutonium-239/240	pCi/g	5.00E-02	8.47E-02	2.00E-01	36%	26	72
Promethium-147	pCi/g	4.20E+00	4.20E+00	4.20E+00	100%	1	1
Radium-223	pCi/g	1.00E-01	3.41E-01	1.70E+00	38%	27	72
Radium-226	pCi/g	5.00E-02	1.74E+00	5.80E+00	97%	70	72
Radium-228	pCi/g	5.00E-02	1.85E+00	3.50E+00	97%	70	72
Thallium-208	pCi/g	2.40E-01	6.23E-01	1.60E+00	100%	6	6
Thorium-230	pCi/g	5.00E-02	5.08E-01	1.50E+00	58%	42	72
Thorium-232	pCi/g	5.00E-02	8.85E-01	1.30E+00	99%	71	72
Tritium	pCi/g	5.00E-02	8.53E+00	1.30E+02	69%	50	72
Uranium-233	pCi/g	5.00E-02	6.02E-01	1.20E+00	82%	59	72
Uranium-235	pCi/g	5.00E-02	7.71E-02	4.00E-01	39%	28	72
Uranium-238	pCi/g	5.00E-02	7.47E-01	1.30E+00	99%	71	72

TABLE M.9

Statistical Summary
Group G - Former Dry Waste Disposal Pit (SEAD-12)
Seneca Army Depot Activity

Media: Surface Soil (0-1 ft)

Class	Analyte	CAS No.	Freq of Detect	Freq %	Units	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean	Standard Deviation	95% UCL	Log Mean	Log 95% UCL	EP Conc (1)
M	Aluminum	7429905	15 / 15	100	MG/KG	--	--	6.76E+03	1.36E+04	9.38E+03	2.18E+03	1.04E+04	9.16E+03	1.05E+04	1.05E+04
M	Antimony	7440360	1 / 2	50	MG/KG	2.30E-01	2.30E-01	1.20E+00	1.20E+00	6.58E-01	7.67E-01	4.08E+00	3.71E-01	2.69E+33	1.20E+00
M	Arsenic	7440382	15 / 15	100	MG/KG	--	--	3.10E+00	6.60E+00	4.38E+00	9.10E-01	4.79E+00	4.30E+00	4.82E+00	4.82E+00
M	Barium	7440393	15 / 15	100	MG/KG	--	--	5.38E+01	1.02E+02	7.42E+01	1.55E+01	8.12E+01	7.27E+01	8.21E+01	8.21E+01
M	Beryllium	7440417	15 / 15	100	MG/KG	--	--	2.10E-01	5.60E-01	3.85E-01	1.15E-01	4.37E-01	3.69E-01	4.51E-01	4.51E-01
M	Cadmium	7440439	1 / 15	7	MG/KG	5.00E-02	4.50E-01	6.30E-01	6.30E-01	1.19E-01	1.59E-01	1.91E-01	6.56E-02	2.59E-01	2.59E-01
M	Calcium	7440702	15 / 15	100	MG/KG	--	--	2.82E+03	1.16E+05	5.96E+04	3.54E+04	7.57E+04	4.06E+04	2.05E+05	1.16E+05
M	Chromium	7440473	15 / 15	100	MG/KG	--	--	1.07E+01	1.89E+01	1.46E+01	2.29E+00	1.56E+01	1.44E+01	1.57E+01	1.57E+01
M	Cobalt	7440484	15 / 15	100	MG/KG	--	--	5.20E+00	1.06E+01	8.45E+00	1.60E+00	9.18E+00	8.29E+00	9.36E+00	9.36E+00
M	Copper	7440508	15 / 15	100	MG/KG	--	--	1.59E+01	4.11E+01	2.20E+01	6.33E+00	2.49E+01	2.13E+01	2.47E+01	2.47E+01
M	Iron	7439896	15 / 15	100	MG/KG	--	--	1.30E+04	4.11E+04	2.04E+04	6.45E+03	2.33E+04	1.97E+04	2.31E+04	2.31E+04
M	Lead	7439921	15 / 15	100	MG/KG	--	--	5.10E+00	2.05E+01	1.12E+01	4.55E+00	1.33E+01	1.04E+01	1.40E+01	1.40E+01
M	Magnesium	7439954	15 / 15	100	MG/KG	--	--	3.28E+03	2.38E+04	1.16E+04	5.78E+03	1.42E+04	1.00E+04	1.68E+04	1.68E+04
M	Manganese	7439965	15 / 15	100	MG/KG	--	--	3.52E+02	6.29E+02	4.41E+02	8.49E+01	4.79E+02	4.34E+02	4.80E+02	4.80E+02
M	Mercury	7439976	2 / 15	13	MG/KG	5.00E-02	7.00E-02	4.00E-02	2.90E-01	4.57E-02	6.77E-02	7.65E-02	3.26E-02	5.71E-02	5.71E-02
M	Nickel	7440020	13 / 15	87	MG/KG	2.54E+01	3.14E+01	1.64E+01	3.03E+01	2.18E+01	4.71E+00	2.39E+01	2.13E+01	2.44E+01	2.44E+01
M	Potassium	7440097	15 / 15	100	MG/KG	--	--	9.32E+02	1.87E+03	1.36E+03	3.16E+02	1.50E+03	1.33E+03	1.53E+03	1.53E+03
M	Selenium	7782492	4 / 15	27	MG/KG	4.10E-01	1.10E+00	4.50E-01	1.30E+00	5.06E-01	2.56E-01	6.22E-01	4.59E-01	6.43E-01	6.43E-01
M	Silver	7440224	3 / 15	20	MG/KG	9.00E-02	3.00E-01	2.70E-01	3.90E-01	1.53E-01	8.86E-02	1.93E-01	1.35E-01	2.04E-01	2.04E-01
M	Sodium	7440235	9 / 15	60	MG/KG	4.96E+01	5.97E+01	6.13E+01	2.68E+02	8.74E+01	7.78E+01	1.23E+02	6.27E+01	1.56E+02	1.56E+02
M	Thallium	7440280	5 / 15	33	MG/KG	8.20E-01	1.20E+00	4.10E-01	2.20E+00	8.05E-01	5.78E-01	1.07E+00	6.79E-01	1.08E+00	1.08E+00
M	Vanadium	7440622	15 / 15	100	MG/KG	--	--	1.25E+01	2.28E+01	1.69E+01	3.45E+00	1.84E+01	1.65E+01	1.86E+01	1.86E+01
M	Zinc	7440666	15 / 15	100	MG/KG	--	--	3.61E+01	8.00E+01	5.35E+01	1.24E+01	5.91E+01	5.22E+01	5.97E+01	5.97E+01
OCP	4,4'-DDE	72559	1 / 15	7	MG/KG	3.60E-03	4.40E-03	2.00E-03	2.00E-03	1.93E-03	1.26E-04	1.99E-03	1.93E-03	1.99E-03	1.99E-03
OCP	4,4'-DDT	50293	1 / 15	7	MG/KG	3.60E-03	4.40E-03	4.20E-03	4.20E-03	2.07E-03	6.02E-04	2.35E-03	2.02E-03	2.29E-03	2.29E-03
OCP	Aroclor-1242	53469219	1 / 15	7	MG/KG	3.60E-02	4.40E-02	1.70E-02	1.70E-02	1.91E-02	1.38E-03	1.98E-02	1.91E-02	1.98E-02	1.70E-02
OCP	Aroclor-1254	11097691	1 / 15	7	MG/KG	3.60E-02	4.40E-02	2.30E-02	2.30E-02	1.95E-02	1.62E-03	2.02E-02	1.94E-02	2.02E-02	2.02E-02
OCP	Aroclor-1260	11096825	1 / 15	7	MG/KG	3.60E-02	4.40E-02	2.50E-02	2.50E-02	1.96E-02	1.97E-03	2.05E-02	1.95E-02	2.05E-02	2.05E-02
OCP	Endrin aldehyde	7421934	1 / 15	7	MG/KG	3.60E-03	4.40E-03	2.20E-03	2.20E-03	1.94E-03	1.48E-04	2.01E-03	1.93E-03	2.01E-03	2.01E-03
SV	1,2,4-Trichlorobenzene	120821	1 / 14	7	MG/KG	7.20E-02	3.60E-01	1.10E-02	1.10E-02	4.71E-02	3.91E-02	6.56E-02	3.97E-02	6.44E-02	1.10E-02
SV	2-Methylnaphthalene	91576	1 / 14	7	MG/KG	7.20E-02	3.60E-01	5.50E-03	5.50E-03	4.66E-02	3.95E-02	6.53E-02	3.77E-02	7.47E-02	5.50E-03
SV	4-Methylphenol	106445	1 / 14	7	MG/KG	7.20E-02	3.60E-01	4.70E-03	4.70E-03	4.62E-02	3.96E-02	6.49E-02	3.69E-02	7.73E-02	4.70E-03
SV	Benzo(a)anthracene	56553	6 / 14	43	MG/KG	7.20E-02	8.90E-02	6.85E-03	2.60E-02	2.72E-02	1.50E-02	3.43E-02	2.19E-02	4.84E-02	2.60E-02
SV	Benzo(a)pyrene	50328	7 / 14	50	MG/KG	7.20E-02	8.90E-02	3.90E-03	2.00E-02	2.44E-02	1.58E-02	3.19E-02	1.85E-02	4.79E-02	2.00E-02
SV	Benzo(b)fluoranthene	205992	8 / 14	57	MG/KG	7.30E-02	8.90E-02	3.70E-03	3.40E-02	2.41E-02	1.57E-02	3.15E-02	1.83E-02	4.72E-02	3.40E-02
SV	Benzo(ghi)perylene	191242	3 / 14	21	MG/KG	7.20E-02	3.60E-01	6.60E-03	1.10E-02	4.25E-02	4.16E-02	6.22E-02	3.15E-02	7.62E-02	1.10E-02
SV	Benzo(k)fluoranthene	207089	6 / 14	43	MG/KG	7.20E-02	8.90E-02	3.90E-03	2.00E-02	2.67E-02	1.52E-02	3.39E-02	2.11E-02	5.07E-02	2.00E-02
SV	Bis(2-Ethylhexyl)phthalate	117817	4 / 14	29	MG/KG	7.20E-02	3.60E-01	5.80E-03	3.60E-02	4.21E-02	4.16E-02	6.18E-02	3.10E-02	7.66E-02	3.60E-02

TABLE M.9

Statistical Summary
Group G - Former Dry Waste Disposal Pit (SEAD-12)
Seneca Army Depot Activity

Media: Surface Soil (0-1 ft)

Class	Analyte	CAS No.	Freq of Detect	Freq %	Units	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean	Standard Deviation	95% UCL	Log Mean	Log 95% UCL	EP Conc (1)
SV	Butylbenzylphthalate	85687	1 / 14	7	MG/KG	7.20E-02	3.60E-01	5.90E-03	5.90E-03	4.64E-02	3.95E-02	6.51E-02	3.76E-02	7.28E-02	5.90E-03
SV	Chrysene	218019	9 / 14	64	MG/KG	7.20E-02	8.40E-02	4.60E-03	3.20E-02	2.19E-02	1.43E-02	2.87E-02	1.73E-02	3.82E-02	3.20E-02
SV	Di-n-butylphthalate	84742	3 / 14	21	MG/KG	7.20E-02	6.10E-01	4.10E-03	4.50E-03	8.51E-02	1.02E-01	1.33E-01	3.92E-02	4.63E-01	4.50E-03
SV	Di-n-octylphthalate	117840	4 / 14	29	MG/KG	7.20E-02	3.60E-01	9.80E-03	1.50E-02	4.13E-02	4.17E-02	6.10E-02	3.12E-02	6.60E-02	1.50E-02
SV	Dibenz(a,h)anthracene	53703	1 / 14	7	MG/KG	7.20E-02	3.60E-01	4.80E-03	4.80E-03	4.62E-02	3.96E-02	6.50E-02	3.70E-02	7.68E-02	4.80E-03
SV	Diethyl phthalate	84662	1 / 15	7	MG/KG	7.20E-02	3.60E-01	1.10E-02	1.10E-02	4.63E-02	3.78E-02	6.34E-02	3.93E-02	6.13E-02	1.10E-02
SV	Fluoranthene	206440	9 / 14	64	MG/KG	7.20E-02	8.90E-02	3.90E-03	6.40E-02	2.50E-02	1.78E-02	3.34E-02	1.89E-02	4.81E-02	4.81E-02
SV	Indeno(1,2,3-cd)pyrene	193395	4 / 14	29	MG/KG	7.20E-02	3.60E-01	5.20E-03	7.30E-03	3.96E-02	4.32E-02	6.01E-02	2.55E-02	9.74E-02	7.30E-03
SV	Naphthalene	91203	1 / 14	7	MG/KG	7.20E-02	3.60E-01	5.40E-03	5.40E-03	4.66E-02	3.95E-02	6.53E-02	3.76E-02	7.51E-02	5.40E-03
SV	Phenanthrene	85018	7 / 14	50	MG/KG	7.20E-02	8.40E-02	6.70E-03	3.40E-02	2.59E-02	1.43E-02	3.27E-02	2.12E-02	4.38E-02	3.40E-02
SV	Pyrene	129000	9 / 14	64	MG/KG	7.20E-02	8.90E-02	4.60E-03	5.10E-02	2.44E-02	1.57E-02	3.18E-02	1.89E-02	4.55E-02	4.55E-02
VOA	Acetone	67641	3 / 15	20	MG/KG	1.10E-02	1.20E-02	6.00E-03	2.60E-02	7.13E-03	5.24E-03	9.51E-03	6.38E-03	8.48E-03	8.48E-03
VOA	Toluene	108883	3 / 15	20	MG/KG	1.10E-02	1.20E-02	3.00E-03	1.45E-02	6.03E-03	2.49E-03	7.17E-03	5.71E-03	7.07E-03	7.07E-03

Notes:

(1) Exposure point concentration is the lesser of the max detect value vs the log 95% UCL value.

TABLE M.10

Statistical Summary
Group G - Former Dry Waste Disposal Pit (SEAD-12)
Seneca Army Depot Activity

Media: Subsurface Soil (0-4 ft)

Class	Analyte	CAS No.	Freq of Detect	Freq %	Units	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean	Standard Deviation	95% UCL	Log Mean	Log 95% UCL	EP Conc (1)
M	Aluminum	7429905	22 / 22	100	MG/KG	--	--	6.49E+03	1.45E+04	9.01E+03	2.25E+03	9.84E+03	8.77E+03	9.86E+03	9.86E+03
M	Antimony	7440360	1 / 7	14	MG/KG	2.30E-01	7.60E-01	1.20E+00	1.20E+00	3.47E-01	3.96E-01	6.38E-01	2.29E-01	1.27E+00	1.20E+00
M	Arsenic	7440382	22 / 22	100	MG/KG	--	--	3.05E+00	6.60E+00	4.28E+00	8.11E-01	4.58E+00	4.22E+00	4.59E+00	4.59E+00
M	Barium	7440393	22 / 22	100	MG/KG	--	--	3.45E+01	1.10E+02	7.37E+01	1.86E+01	8.06E+01	7.14E+01	8.22E+01	8.22E+01
M	Beryllium	7440417	22 / 22	100	MG/KG	--	--	2.10E-01	6.20E-01	3.82E-01	1.18E-01	4.25E-01	3.65E-01	4.31E-01	4.31E-01
M	Cadmium	7440439	4 / 22	18	MG/KG	5.00E-02	4.50E-01	1.75E-01	6.30E-01	1.31E-01	1.60E-01	1.89E-01	7.04E-02	2.46E-01	2.46E-01
M	Calcium	7440702	22 / 22	100	MG/KG	--	--	2.82E+03	1.32E+05	6.83E+04	3.61E+04	8.16E+04	5.03E+04	1.56E+05	1.32E+05
M	Chromium	7440473	22 / 22	100	MG/KG	--	--	8.55E+00	2.08E+01	1.40E+01	2.81E+00	1.51E+01	1.38E+01	1.52E+01	1.52E+01
M	Cobalt	7440484	22 / 22	100	MG/KG	--	--	4.25E+00	1.09E+01	8.15E+00	1.83E+00	8.82E+00	7.92E+00	9.02E+00	9.02E+00
M	Copper	7440508	22 / 22	100	MG/KG	--	--	1.34E+01	4.11E+01	2.23E+01	6.27E+00	2.46E+01	2.15E+01	2.46E+01	2.46E+01
M	Iron	7439896	22 / 22	100	MG/KG	--	--	1.14E+04	4.11E+04	1.91E+04	5.94E+03	2.13E+04	1.84E+04	2.11E+04	2.11E+04
M	Lead	7439921	22 / 22	100	MG/KG	--	--	4.55E+00	2.05E+01	1.02E+01	4.05E+00	1.17E+01	9.53E+00	1.20E+01	1.20E+01
M	Magnesium	7439954	22 / 22	100	MG/KG	--	--	3.28E+03	3.42E+04	1.34E+04	7.35E+03	1.61E+04	1.15E+04	1.81E+04	1.81E+04
M	Manganese	7439965	22 / 22	100	MG/KG	--	--	3.19E+02	5.96E+02	4.14E+02	7.54E+01	4.41E+02	4.08E+02	4.42E+02	4.42E+02
M	Mercury	7439976	7 / 22	32	MG/KG	5.00E-02	7.00E-02	2.00E-02	2.90E-01	4.25E-02	5.62E-02	6.31E-02	3.27E-02	4.89E-02	4.89E-02
M	Nickel	7440020	20 / 22	91	MG/KG	2.54E+01	3.14E+01	8.95E+00	3.19E+01	2.20E+01	5.80E+00	2.41E+01	2.12E+01	2.50E+01	2.50E+01
M	Potassium	7440097	22 / 22	100	MG/KG	--	--	9.32E+02	2.33E+03	1.46E+03	3.99E+02	1.60E+03	1.41E+03	1.63E+03	1.63E+03
M	Selenium	7782492	4 / 22	18	MG/KG	4.10E-01	1.10E+00	4.50E-01	1.30E+00	4.61E-01	2.28E-01	5.45E-01	4.21E-01	5.51E-01	5.51E-01
M	Silver	7440224	4 / 22	18	MG/KG	9.00E-02	4.60E-01	2.40E-01	3.90E-01	1.47E-01	8.89E-02	1.79E-01	1.23E-01	1.98E-01	1.98E-01
M	Sodium	7440235	15 / 22	68	MG/KG	4.96E+01	1.33E+02	6.13E+01	2.68E+02	1.09E+02	7.75E+01	1.37E+02	8.36E+01	1.66E+02	1.66E+02
M	Thallium	7440280	8 / 22	36	MG/KG	8.20E-01	1.40E+00	3.90E-01	2.20E+00	7.30E-01	4.92E-01	9.11E-01	6.36E-01	8.80E-01	8.80E-01
M	Vanadium	7440622	22 / 22	100	MG/KG	--	--	1.25E+01	2.38E+01	1.64E+01	3.34E+00	1.76E+01	1.61E+01	1.77E+01	1.77E+01
M	Zinc	7440666	22 / 22	100	MG/KG	--	--	2.75E+01	8.00E+01	5.05E+01	1.28E+01	5.52E+01	4.90E+01	5.58E+01	5.58E+01
PCBs	Aroclor-1242	53469219	1 / 22	5	MG/KG	3.60E-02	4.40E-02	1.70E-02	1.70E-02	1.89E-02	1.20E-03	1.93E-02	1.89E-02	1.93E-02	1.70E-02
PCBs	Aroclor-1254	11097691	1 / 22	5	MG/KG	3.60E-02	4.40E-02	2.30E-02	2.30E-02	1.91E-02	1.44E-03	1.96E-02	1.91E-02	1.96E-02	1.96E-02
PCBs	Aroclor-1260	11096825	1 / 22	5	MG/KG	3.60E-02	4.40E-02	2.50E-02	2.50E-02	1.92E-02	1.73E-03	1.98E-02	1.91E-02	1.98E-02	1.98E-02
OCP	4,4'-DDE	72559	1 / 22	5	MG/KG	3.60E-03	4.40E-03	2.00E-03	2.00E-03	1.90E-03	1.15E-04	1.94E-03	1.90E-03	1.94E-03	1.94E-03
OCP	4,4'-DDT	50293	1 / 22	5	MG/KG	3.60E-03	4.40E-03	4.20E-03	4.20E-03	2.00E-03	5.05E-04	2.18E-03	1.96E-03	2.13E-03	2.13E-03
OCP	Endrin aldehyde	7421934	1 / 22	5	MG/KG	3.60E-03	4.40E-03	2.20E-03	2.20E-03	1.91E-03	1.32E-04	1.96E-03	1.90E-03	1.95E-03	1.95E-03
PAHs	2-Methylnaphthalene	91576	1 / 20	5	MG/KG	7.20E-02	3.80E-01	5.50E-03	5.50E-03	6.58E-02	6.10E-02	8.94E-02	4.75E-02	1.03E-01	5.50E-03
PAHs	Benzo(a)anthracene	56553	5 / 20	25	MG/KG	7.20E-02	3.80E-01	6.85E-03	2.60E-02	5.37E-02	5.78E-02	7.61E-02	3.53E-02	9.23E-02	2.60E-02
PAHs	Benzo(a)pyrene	50328	6 / 20	30	MG/KG	7.20E-02	3.80E-01	3.90E-03	2.00E-02	5.18E-02	5.89E-02	7.46E-02	3.12E-02	1.03E-01	2.00E-02
PAHs	Benzo(b)fluoranthene	205992	7 / 20	35	MG/KG	7.20E-02	3.80E-01	3.70E-03	3.40E-02	5.13E-02	5.92E-02	7.42E-02	3.02E-02	1.05E-01	3.40E-02

TABLE M.10

Statistical Summary
Group G - Former Dry Waste Disposal Pit (SEAD-12)
Seneca Army Depot Activity

Media: Subsurface Soil (0-4 ft)

Class	Analyte	CAS No.	Freq of Detect	Freq %	Units	Min Non-Detect	Max Non-Detect	Min Detect	Max Detect	Mean	Standard Deviation	95% UCL	Log Mean	Log 95% UCL	EP Conc (1)
PAHs	Benzo(ghi)perylene	191242	3 / 20	15	MG/KG	7.20E-02	3.80E-01	6.60E-03	1.10E-02	6.29E-02	6.29E-02	8.72E-02	4.19E-02	1.09E-01	1.10E-02
PAHs	Benzo(k)fluoranthene	207089	6 / 20	30	MG/KG	7.20E-02	3.80E-01	3.90E-03	2.00E-02	5.19E-02	5.89E-02	7.46E-02	3.16E-02	9.99E-02	2.00E-02
PAHs	Chrysene	218019	9 / 20	45	MG/KG	7.20E-02	3.80E-01	4.50E-03	3.20E-02	4.82E-02	6.05E-02	7.16E-02	2.62E-02	1.01E-01	3.20E-02
PAHs	Dibenz(a,h)anthracene	53703	1 / 20	5	MG/KG	7.20E-02	3.80E-01	4.80E-03	4.80E-03	6.55E-02	6.12E-02	8.91E-02	4.69E-02	1.05E-01	4.80E-03
PAHs	Fluoranthene	206440	10 / 20	50	MG/KG	7.20E-02	3.80E-01	3.90E-03	6.40E-02	4.90E-02	6.07E-02	7.25E-02	2.65E-02	1.06E-01	6.40E-02
PAHs	Indeno(1,2,3-cd)pyrene	193395	4 / 20	20	MG/KG	7.20E-02	3.80E-01	5.20E-03	7.30E-03	6.09E-02	6.44E-02	8.58E-02	3.61E-02	1.35E-01	7.30E-03
PAHs	Naphthalene	91203	1 / 20	5	MG/KG	7.20E-02	3.80E-01	5.40E-03	5.40E-03	6.58E-02	6.10E-02	8.94E-02	4.75E-02	1.04E-01	5.40E-03
PAHs	Phenanthrene	85018	8 / 20	40	MG/KG	7.20E-02	3.80E-01	4.50E-03	3.40E-02	4.97E-02	5.98E-02	7.28E-02	2.86E-02	9.85E-02	3.40E-02
PAHs	Pyrene	129000	10 / 20	50	MG/KG	7.20E-02	3.80E-01	4.60E-03	5.10E-02	4.87E-02	6.04E-02	7.20E-02	2.68E-02	1.01E-01	5.10E-02
SV	4-Methylphenol	106445	1 / 21	5	MG/KG	7.20E-02	3.80E-01	4.70E-03	4.70E-03	6.41E-02	6.00E-02	8.67E-02	4.63E-02	9.98E-02	4.70E-03
SV	Bis(2-Ethylhexyl)phthalate	117817	5 / 20	25	MG/KG	7.20E-02	3.80E-01	5.80E-03	3.60E-02	6.24E-02	6.32E-02	8.68E-02	4.11E-02	1.10E-01	3.60E-02
SV	Butylbenzylphthalate	85687	1 / 20	5	MG/KG	7.20E-02	3.80E-01	5.90E-03	5.90E-03	6.56E-02	6.11E-02	8.92E-02	4.75E-02	1.02E-01	5.90E-03
SV	Di-n-butylphthalate	84742	5 / 20	25	MG/KG	7.20E-02	6.10E-01	4.10E-03	5.30E-02	7.43E-02	8.97E-02	1.09E-01	4.01E-02	1.88E-01	5.30E-02
SV	Di-n-octylphthalate	117840	4 / 20	20	MG/KG	7.20E-02	3.80E-01	9.80E-03	1.50E-02	6.20E-02	6.33E-02	8.65E-02	4.16E-02	1.01E-01	1.50E-02
SV	Diethyl phthalate	84662	1 / 22	5	MG/KG	7.20E-02	3.80E-01	1.10E-02	1.10E-02	6.33E-02	5.85E-02	8.48E-02	4.78E-02	8.56E-02	1.10E-02
VOA	1,2,4-Trichlorobenzene	120821	1 / 20	5	MG/KG	7.20E-02	3.80E-01	1.10E-02	1.10E-02	6.61E-02	6.07E-02	8.96E-02	4.93E-02	9.39E-02	1.10E-02
VOA	Acetone	67641	5 / 22	23	MG/KG	1.10E-02	1.20E-02	6.00E-03	2.60E-02	7.00E-03	4.42E-03	8.62E-03	6.41E-03	7.88E-03	7.88E-03
VOA	Methylene chloride	75092	1 / 22	5	MG/KG	1.10E-02	1.20E-02	1.00E-03	1.00E-03	5.45E-03	1.02E-03	5.83E-03	5.23E-03	6.53E-03	1.00E-03
VOA	Toluene	108883	6 / 22	27	MG/KG	1.10E-02	1.20E-02	3.00E-03	1.45E-02	5.64E-03	2.22E-03	6.45E-03	5.34E-03	6.40E-03	6.40E-03

Notes:

(1) Exposure point concentration is the lesser of the max detect value vs the log 95% UCL value.

TABLE M.11

Statistical Summary - Radionuclides
Group G - Former Dry Waste Disposal Pit (SEAD-12)
Seneca Army Depot Activity

Media: Surface Soil (0-1 ft)

Analyte	Units	Min Detect	Mean	Max Detect	Frequency of Detection	Number of Detects	Number of Analyses
Bismuth-214	pCi/g	1.00E+00	1.67E+00	3.50E+00	100%	31	31
Cesium-137	pCi/g	5.00E-02	4.50E-01	1.10E+00	90%	28	31
Cobalt-57	pCi/g	5.00E-02	7.34E-02	2.00E-01	39%	12	31
Cobalt-60	pCi/g	5.00E-02	1.06E-01	5.00E-01	32%	10	31
Lead-210	pCi/g	9.50E-01	1.10E+01	7.08E+01	68%	21	31
Lead-211	pCi/g	2.50E-01	3.70E+00	1.94E+01	58%	18	31
Lead-214	pCi/g	9.00E-01	1.58E+00	2.80E+00	100%	31	31
Plutonium-239/240	pCi/g	5.00E-02	1.21E-01	1.00E+00	52%	16	31
Promethium-147	pCi/g	3.85E+00	4.03E+00	4.20E+00	0%	0	2
Radium-223	pCi/g	1.50E-01	2.58E-01	1.00E+00	16%	5	31
Radium-226	pCi/g	1.00E+00	1.67E+00	3.50E+00	100%	31	31
Radium-228	pCi/g	8.00E-01	1.70E+00	3.30E+00	100%	31	31
Thorium-230	pCi/g	5.00E-02	4.46E-01	2.05E+00	42%	13	31
Thorium-232	pCi/g	2.00E-01	7.90E-01	1.20E+00	100%	31	31
Tritium	pCi/g	5.00E-02	1.78E+00	1.54E+01	71%	22	31
Uranium-233	pCi/g	5.00E-02	4.17E-01	9.00E-01	68%	21	31
Uranium-235	pCi/g	5.00E-02	8.63E-02	3.00E-01	45%	14	31
Uranium-238	pCi/g	4.00E-01	7.16E-01	1.00E+00	100%	31	31

TABLE M.12

Statistical Summary - Radionuclides
Group G - Former Dry Waste Disposal Pit (SEAD-12)
Seneca Army Depot Activity

Media: Mixed Soil (0-4 ft)

Analyte	Units	Min Detect	Mean	Max Detect	Frequency of Detection	Number of Detects	Number of Analyses
Gross Alpha	pCi/g	6.50E+00	7.50E+00	8.00E+00	100%	3	3
Gross Beta	pCi/g	1.70E+01	2.33E+01	2.80E+01	100%	3	3
Actinium-228	pCi/g	5.40E-01	6.37E-01	7.40E-01	100%	3	3
Bismuth-214	pCi/g	5.05E-01	1.58E+00	3.50E+00	100%	38	38
Cesium-137	pCi/g	5.00E-02	4.20E-01	1.10E+00	86%	30	35
Cobalt-57	pCi/g	5.00E-02	7.21E-02	2.00E-01	43%	15	35
Cobalt-60	pCi/g	5.00E-02	1.21E-01	6.00E-01	34%	12	35
Lead-210	pCi/g	9.50E-01	1.11E+01	7.08E+01	69%	24	35
Lead-211	pCi/g	2.50E-01	3.67E+00	1.94E+01	54%	19	35
Lead-214	pCi/g	1.00E-01	1.45E+00	2.80E+00	97%	37	38
Plutonium-239/240	pCi/g	5.00E-02	1.24E-01	1.00E+00	60%	21	35
Promethium-147	pCi/g	1.70E+00	3.71E+00	5.10E+00	50%	2	4
Radium-223	pCi/g	1.50E-01	2.53E-01	1.00E+00	14%	5	35
Radium-226	pCi/g	6.50E-01	1.66E+00	3.50E+00	100%	35	35
Radium-228	pCi/g	8.00E-01	1.69E+00	3.30E+00	100%	35	35
Thallium-208	pCi/g	3.35E-01	3.75E-01	4.40E-01	100%	3	3
Thorium-227	pCi/g	1.00E-01	1.00E-01	1.00E-01	0%	0	2
Thorium-230	pCi/g	5.00E-02	4.89E-01	2.05E+00	49%	17	35
Thorium-232	pCi/g	2.00E-01	8.11E-01	1.30E+00	100%	35	35
Tritium	pCi/g	5.00E-02	5.82E+00	1.49E+02	77%	27	35
Uranium-233	pCi/g	5.00E-02	4.29E-01	1.00E+00	66%	23	35
Uranium-235	pCi/g	5.00E-02	8.36E-02	3.00E-01	43%	15	35
Uranium-238	pCi/g	5.00E-02	6.96E-01	1.00E+00	97%	34	35

TABLE M.13
Statistical Summary
SEAD-12
Seneca Army Depot Activity

Media: Sediment

Analyte	Max Detect (mg/kg)	Mean (mg/kg)	Frequency of Detection	NYSDEC Criteria	Specified Criteria (Human Health Accumulation and Benthic Aquatic Chronic)	Number Above NYS	Number of Detects	Number of Analyses
VOLATILE ORGANICS								
1,1,1-Trichloroethane	3.00E-03	1.54E-02	2%			0	1	54
Acetone	9.50E-02	2.32E-02	37%			0	20	54
Methyl chloride	1.70E-02	1.51E-02	4%			0	2	54
Methyl ethyl ketone	1.10E-02	1.56E-02	2%			0	1	54
Tetrachloroethene	4.00E-03	1.53E-02	4%	43.2	NYSDEC HHB	0	2	54
Toluene	2.00E-02	1.54E-02	9%	2.646	BENTHIC-CHRONIC	5	5	54
Trichloroethene	1.80E-02	1.52E-02	7%	108	NYSDEC HHB	0	4	54
SEMI VOLATILE ORGANICS								
2-Methylnaphthalene	3.60E-02	1.06E-01	22%			0	12	54
4-Chlorophenyl phenyl ether	6.00E-03	1.31E-01	2%			0	1	54
4-Methylphenol	1.50E-01	1.26E-01	9%			0	5	54
Acenaphthene	5.00E-01	9.13E-02	41%	7560	BENTHIC-CHRONIC	0	22	54
Acenaphthylene	1.50E-02	1.26E-01	6%			0	3	54
Anthracene	8.30E-01	9.82E-02	48%	5.778	BENTHIC-CHRONIC	26	26	54
Benzo(a)anthracene	3.10E+00	2.06E-01	72%	0.648	BENTHIC-CHRONIC	39	39	54
Benzo(a)pyrene	3.30E+00	2.14E-01	76%	70.2	NYSDEC HHB	21	41	54
Benzo(b)fluoranthene	3.20E+00	2.41E-01	81%	70.2	NYSDEC HHB	24	44	54
Benzo(ghi)perylene	2.10E+00	1.68E-01	70%			0	38	54
Benzo(k)fluoranthene	2.70E+00	1.90E-01	54%	70.2	NYSDEC HHB	15	29	54
Bis(2-Ethylhexyl)phthalate	5.00E+00	2.21E-01	13%	10800	BENTHIC-CHRONIC	0	7	54
Butylbenzylphthalate	4.20E-02	1.18E-01	17%			0	9	54
Carbazole	9.10E-01	1.12E-01	52%			0	28	54
Chrysene	3.20E+00	2.29E-01	81%	70.2	NYSDEC HHB	23	44	54
Di-n-butylphthalate	5.30E-02	1.03E-01	28%			0	15	54
Di-n-octylphthalate	1.40E-01	1.02E-01	20%			0	11	54
Dibenz(a,h)anthracene	8.60E-01	1.01E-01	56%			0	30	54
Dibenzofuran	6.40E-02	9.91E-02	30%			0	16	54
Diethyl phthalate	2.30E-02	1.20E-01	13%			0	7	54
Fluoranthene	6.20E+00	3.91E-01	87%	55080	BENTHIC-CHRONIC	0	47	54
Fluorene	3.40E-01	8.90E-02	37%	0.432	BENTHIC-CHRONIC	20	20	54
Hexachlorobenzene	6.20E-03	1.31E-01	2%	8.1	NYSDEC HHB	0	1	54
Indeno(1,2,3-cd)pyrene	2.00E+00	1.55E-01	70%	70.2	NYSDEC HHB	18	38	54
Naphthalene	4.90E-02	1.17E-01	13%	1.62	BENTHIC-CHRONIC	7	7	54
Phenanthrene	3.10E+00	2.33E-01	83%	6480	BENTHIC-CHRONIC	0	45	54
Pyrene	5.40E+00	3.36E-01	85%	51.894	BENTHIC-CHRONIC	30	46	54
PESTICIDES/PCBS								

TABLE M.13

Statistical Summary
SEAD-12
Seneca Army Depot Activity

Media: Sediment

Analyte	Max Detect (mg/kg)	Mean (mg/kg)	Frequency of Detection	NYSDEC Criteria	Specified Criteria (Human Health Accumulation and Benthic Aquatic Chronic)	Number Above NYS	Number of Detects	Number of Analyses
4,4'-DDD	1.10E-01	8.82E-03	11%	0.54	NYSDEC HHB	6	6	54
4,4'-DDE	7.60E-02	8.72E-03	19%	0.54	NYSDEC HHB	10	10	54
4,4'-DDT	2.00E-01	9.41E-03	13%	0.54	NYSDEC HHB	7	7	54
Alpha-Chlordane	3.20E-03	2.61E-03	4%			0	2	54
Aroclor-1254	1.20E+00	7.40E-02	7%	0.0432	NYSDEC HHB	4	4	54
Aroclor-1260	3.70E-02	5.04E-02	4%	0.0432	NYSDEC HHB	2	2	54
Endosulfan I	3.60E-03	2.58E-03	4%	1.62	NYSDEC HHB	2	2	54
Endrin	5.60E-03	5.10E-03	2%	43.2	BENTHIC-CHRONIC	0	1	54
Endrin aldehyde	7.60E-03	5.15E-03	4%			0	2	54
Endrin ketone	2.20E-02	5.43E-03	4%			0	2	54
Heptachlor epoxide	1.10E-02	2.85E-03	6%	0.0432	NYSDEC HHB	3	3	54
METALS								
Aluminum	3.87E+04	1.24E+04	100%			0	54	54
Antimony	2.80E+00	8.54E-01	7%	2		1	4	54
Arsenic	1.91E+01	5.37E+00	96%	6		10	52	54
Barium	8.85E+02	1.16E+02	100%			0	54	54
Beryllium	1.70E+00	4.34E-01	87%			0	47	54
Cadmium	9.00E+00	6.63E-01	28%	0.6		8	15	54
Calcium	2.80E+05	6.34E+04	100%			0	54	54
Chromium	1.30E+02	2.29E+01	100%	26		9	54	54
Cobalt	7.53E+01	1.15E+01	80%			0	43	54
Copper	1.16E+03	5.14E+01	100%	16		49	54	54
Cyanide	2.60E+00	9.01E-01	4%			0	2	54
Iron	8.59E+04	2.57E+04	100%	20000		38	54	54
Lead	2.15E+02	2.65E+01	85%	31		8	46	54
Magnesium	4.81E+04	1.06E+04	100%			0	54	54
Manganese	1.40E+04	1.08E+03	91%	460		25	49	54
Mercury	1.70E+00	1.37E-01	33%	0.15		7	18	54
Nickel	1.26E+02	3.44E+01	100%	16		51	54	54
Potassium	5.50E+03	1.86E+03	100%			0	54	54
Selenium	6.20E+00	1.66E+00	46%			0	25	54
Silver	1.50E+00	4.37E-01	9%	1		1	5	54
Sodium	1.55E+03	2.04E+02	48%			0	26	54
Thallium	4.00E+00	1.66E+00	11%			0	6	54
Vanadium	7.03E+01	2.38E+01	100%			0	54	54
Zinc	2.65E+03	2.39E+02	91%	120		35	49	54

TABLE M.14
Statistical Summary - Radionuclides
SEAD-12
Seneca Army Depot Activity

Media: Sediment

Analyte	Units	Max Detect	Mean	Frequency of Detection	RAD Guideline	Number Above RAD	Number of Detects	Number of Analyses
Actinium-228	pCi/g	1.10E+00	8.10E-01	100%		0	5	5
Bismuth-214	pCi/g	2.40E+00	1.29E+00	74%		0	39	53
Cesium-137	pCi/g	1.50E+00	4.63E-01	46%		0	22	48
Cobalt-57	pCi/g	0.00E+00	5.16E-02	0%		0	0	48
Cobalt-60	pCi/g	0.00E+00	1.03E-01	0%		0	0	48
Gross Alpha	pCi/g	1.80E+01	1.16E+01	100%		0	5	5
Gross Beta	pCi/g	3.60E+01	2.96E+01	100%		0	5	5
Lead-210	pCi/g	6.10E+00	4.23E+01	10%		0	5	48
Lead-211	pCi/g	2.24E+01	3.92E+00	19%		0	9	48
Lead-214	pCi/g	2.90E+00	1.51E+00	92%		0	49	53
Plutonium-239/240	pCi/g	2.00E-01	1.15E-01	50%		0	24	48
Promethium-147	pCi/g	8.30E+01	1.52E+01	82%		0	9	11
Radium-223	pCi/g	1.10E+00	2.42E-01	2%		0	1	48
Radium-226	pCi/g	2.40E+00	1.31E+00	71%		0	34	48
Radium-228	pCi/g	3.20E+00	1.79E+00	92%		0	44	48
Thallium-208	pCi/g	8.50E-01	4.89E-01	100%		0	5	5
Thorium-227	pCi/g	3.00E-01	1.13E-01	31%		0	14	45
Thorium-230	pCi/g	1.90E+00	8.28E-01	42%		0	20	48
Thorium-232	pCi/g	1.70E+00	8.53E-01	85%		0	41	48
Thorium-234	pCi/g	1.60E+00	6.68E-01	100%		0	5	5
Tritium	pCi/g	6.00E-01	6.85E-02	13%		0	6	48
Uranium-233/234*	pCi/g	1.50E+00		43%		0	16	37
Uranium-234*	pCi/g	1.20E+00	6.59E-01	100%		0	11	11
Uranium-235	pCi/g	2.00E-01	9.13E-02	46%		0	22	48
Uranium-238	pCi/g	1.00E+00	5.07E-01	48%		0	23	48
Moisture (@ 104 deg. C)	% by Wt	7.71E+01	3.66E+01	100%		0	48	48

*Note: U-233/234 and U-234 data were combined in calculating the average; use 1.5 p/Ci/g for max value in eco risk.

TABLE M.15

Statistical Summary
SEAD-12
Seneca Army Depot Activity

Media: Surface Water

Analyte	Max Detect (mg/l)	Mean (mg/l)	Frequency of Detection	NYS AWQS Class C (Aquatic)	Number Above Class C	Number of Detects	Number of Analyses
VOLATILE ORGANICS							
Acetone	1.00E-02	2.93E-03	6%		0	3	52
Toluene	4.00E-04	7.73E-04	2%	6000	0	1	52
Trichloroethene	1.00E-03	7.86E-04	2%	40	0	1	52
SEMI VOLATILE ORGANICS							
Benzo(a)anthracene	5.00E-04	7.49E-04	2%		0	1	52
Benzo(a)pyrene	6.00E-04	7.50E-04	2%		0	1	52
Benzo(k)fluoranthene	1.00E-03	7.54E-04	2%		0	1	52
Bis(2-Ethylhexyl)phthalate	1.20E-02	1.02E-03	8%	0.6	2	4	52
Butylbenzylphthalate	2.00E-04	7.25E-04	19%		0	10	52
Chrysene	5.00E-04	7.49E-04	2%		0	1	52
Di-n-butylphthalate	2.00E-03	7.25E-04	12%		0	6	52
Diethyl phthalate	4.60E-04	7.08E-04	21%		0	11	52
Pentachlorophenol	2.00E-03	1.90E-03	2%	12.6	0	1	52
Pyrene	1.00E-03	7.54E-04	2%		0	1	52
PESTICIDES/PCBS							
4,4'-DDE	5.60E-06	8.10E-06	2%	0.000007	1	1	52
4,4'-DDT	6.20E-05	9.26E-06	2%	0.00001	1	1	52
Aldrin	4.10E-06	4.12E-06	2%	0.001	1	1	52
Alpha-BHC	9.00E-05	7.33E-06	19%		0	10	52
Alpha-Chlordane	3.60E-06	4.66E-06	2%		0	1	52
Aroclor-1242	4.40E-04	9.45E-05	4%		0	2	52
Beta-BHC	1.70E-05	4.58E-06	10%		0	5	52
Delta-BHC	4.60E-06	4.08E-06	6%		0	3	52
Endrin aldehyde	1.20E-05	8.28E-06	4%		0	2	52
Endrin ketone	1.50E-05	8.30E-06	2%		0	1	52
Gamma-BHC/Lindane	9.20E-05	6.10E-06	10%		0	5	52
Heptachlor	6.30E-06	4.22E-06	6%	0.0002	3	3	52
Heptachlor epoxide	3.30E-06	4.10E-06	4%	0.0003	2	2	52
Hexachlorobenzene	2.00E-05	5.33E-06	6%	0.00003	3	3	48

TABLE M.15

Statistical Summary
SEAD-12
Seneca Army Depot Activity

Media: Surface Water

Analyte	Max Detect (mg/l)	Mean (mg/l)	Frequency of Detection	NYS AWQS Class C (Aquatic)	Number Above Class C	Number of Detects	Number of Analyses
METALS							
Aluminum	3.43E+00	2.81E-01	83%	100	19	43	52
Arsenic	3.80E-03	1.48E-03	10%	150	0	5	52
Barium	1.15E-01	4.06E-02	100%		0	52	52
Beryllium	1.80E-04	5.78E-05	8%	1100	0	4	52
Cadmium	2.10E-03	2.73E-04	13%	3.845011	0	7	52
Calcium	1.30E+02	7.06E+01	98%		0	51	52
Chromium	3.30E-03	6.93E-04	21%	139.78605	0	11	52
Cobalt	6.00E-03	8.60E-04	13%	5	1	7	52
Copper	2.76E-02	2.92E-03	56%	17.362284	2	29	52
Iron	6.83E+00	4.70E-01	92%	300	12	48	52
Lead	3.54E-02	1.83E-03	8%	1.4624632	4	4	52
Magnesium	1.86E+01	9.97E+00	100%		0	52	52
Manganese	1.32E+00	1.02E-01	96%		0	50	52
Mercury	1.10E-04	2.27E-04	10%	0.0007	5	5	52
Nickel	1.97E-02	1.67E-03	52%	100.16198	0	27	52
Potassium	1.18E+01	3.81E+00	98%		0	51	52
Silver	1.60E-03	6.80E-04	12%	0.1	6	6	52
Sodium	1.14E+02	2.15E+01	98%		0	51	52
Thallium	6.50E-03	2.99E-03	4%	8	0	2	52
Vanadium	7.20E-03	9.20E-04	13%	14	0	7	52
Zinc	1.05E-01	2.19E-02	100%	159.63864	0	52	52

TABLE M.16

Statistical Summary - Radionuclides
SEAD-12
Seneca Army Depot Activity

Media: Surface Water

Analyte	Units	Max Detect	Mean	Frequency of Detection	RAD Guideline	Number Above RAD	Number of Detects	Number of Analyses
Bismuth-214	pCi/L	3.46E+01	1.14E+01	66%		0	31	47
Cobalt-60	pCi/L	9.20E+00	2.22E+00	13%		0	6	47
Gross Alpha	pCi/L	1.45E+01	2.55E+00	60%	15	0	30	50
Gross Beta	pCi/L	8.08E+01	8.48E+00	74%		0	37	50
Lead-211	pCi/L	3.52E+02	5.15E+01	2%		0	1	47
Lead-214	pCi/L	2.88E+01	8.30E+00	57%		0	27	47
Promethium-147	pCi/L	7.06E+01	3.28E+01	4%		0	1	23
Radium-223	pCi/L	4.00E-01	6.02E-01	28%		0	13	47
Radium-226	pCi/L	5.00E-01	2.32E-01	30%	5	0	14	47
Radon 222	pCi/L	4.01E+02	8.80E+01	64%	300	4	30	47
Thorium-227	pCi/L	1.40E+00	2.34E-01	19%		0	9	47
Thorium-230	pCi/L	2.20E+00	4.59E-01	17%		0	8	47
Thorium-232	pCi/L	4.00E-01	2.11E-01	26%		0	12	47
Tritium	pCi/L	4.32E+02	1.58E+02	81%		0	35	43
Uranium-234	pCi/L	1.00E+00	3.67E-01	28%	124846.8	0	13	47
Uranium-235	pCi/L	2.00E-01	8.86E-02	26%	43.4	0	12	47
Uranium-238	pCi/L	7.00E-01	1.90E-01	47%	6.7	0	22	47

TABLE M.17
Exposure Parameters for Radiological Screening

Radionuclide		External DCF[a]	Radiological Exposure Parameters: Internal $E_\alpha n_\alpha$[b]	$E_\beta n_\beta$[c]	Φ_β[d]	$E_\gamma n_\gamma$[e]	Φ_γ[f]	Φ_γ[g]	BCF[h]
Actinium-228		2.38E-12	No alpha radiation	4.750E-01	1.00E+00	9.710E-01	1.20E-02	1.10E-01	2.50E+01
Bismuth-214		3.77E-12	2.490E-01	2.890E-01	1.00E+00	1.508E+00	1.00E-02	8.00E-02	1.50E+01
Cesium-137	I	3.40E-16	No alpha radiation	1.870E-01	1.00E+00	5.970E-01	1.20E-02	1.20E-01	2.00E+03
Cobalt-57		2.29E-13	No alpha radiation	1.900E-02	1.00E+00	1.250E-01	1.10E-02	1.10E-01	3.30E+02
Cobalt-60		6.26E-12	No alpha radiation	9.700E-02	1.00E+00	2.504E+00	8.70E-03	7.00E-02	3.30E+02
Lead-210		1.13E-15	No alpha radiation	3.800E-02	1.00E+00	4.810E-03	7.00E-01	9.40E-01	1.00E+02
Lead-211		1.26E-13	No alpha radiation	4.540E-01	1.00E+00	5.030E-02	1.70E-02	1.60E-01	1.00E+02
Lead-214		5.78E-13	No alpha radiation	2.890E-01	1.00E+00	2.490E-01	1.20E-02	9.00E-02	1.00E+02
Plutonium-239/240	j	1.31E-16	5.156E+00	1.100E-02	1.00E+00	2.000E-03	7.00E-01	9.40E-01	2.50E+02
Promethium-147		2.30E-17	No alpha radiation	6.200E-02	1.00E+00	No gamma radiation			2.50E+01
Radium-223		2.67E-13	5.750E+00	7.460E-02	1.00E+00	1.330E-01	1.00E-02	1.10E-01	7.00E+01
Radium-226		1.42E-14	4.774E+00	4.000E-03	1.00E+00	7.000E-03	7.00E-01	9.40E-01	7.00E+01
Radium-228		0.00E+00	No alpha radiation	1.700E-02	1.00E+00	4.140E-09	1.00E+00	1.00E+00	7.00E+01
Radon-222		9.81E-16	5.590E+00	1.090E-05	1.00E+00	3.980E-04	1.00E+00	1.00E+00	
Thallium-208		8.36E-12	No alpha radiation	5.910E-01	1.00E+00	3.360E+00	8.50E-03	8.00E-02	
Thorium-227		2.29E-13	5.950E+00	4.570E-02	1.00E+00	1.060E-01	1.00E-02	1.00E-01	1.00E+02
Thorium-230		5.52E-16	4.671E+00	1.500E-02	1.00E+00	2.000E-03	7.00E-01	9.40E-01	1.00E+02
Thorium-232		2.40E-16	3.996E+00	1.200E-02	1.00E+00	1.000E-03	7.00E-01	9.40E-01	1.00E+02
Thorium-234		1.12E-14	No alpha radiation	5.920E-02	1.00E+00	9.340E-03	7.00E-01	9.40E-01	1.00E+02
Tritium		0.00E+00	No alpha radiation	6.000E-03	1.00E+00	No gamma radiation			1.00E+00
Uranium-233/234	k	1.85E-16	4.817E+00	1.300E-02	1.00E+00	2.000E-03	7.00E-01	9.40E-01	5.00E+01
Uranium-234		1.85E-16	4.840E+00	1.320E-02	1.00E+00	2.000E-03	7.00E-01	9.40E-01	5.00E+01
Uranium-235		3.24E-13	4.396E+00	4.900E-02	1.00E+00	1.560E-01	1.00E-02	1.00E-01	5.00E+01
Uranium-238		4.76E-17	4.187E+00	1.000E-02	1.00E+00	1.000E-03	7.00E-01	9.40E-01	5.00E+01

[a] DCF = Dose conversion factor (Sv/d per Bq/m^3), from NRC 1992 (includes progeny)
[b] $E_\alpha n_\alpha$ = Average alpha energy per disintegration, from Eckerman and Ryman (1993)
[c] $E_\beta n_\beta$ = Average beta energy per disintegration, from Eckerman and Ryman (1993)
[d] Φ_β = Absorption efficiency of beta particles, from Blaylock et al. (1993)
[e] $E_\gamma n_\gamma$ = Average gamma energy per disintegration, from Eckerman and Ryman (1993)
[f] Φ_γ = Absorption efficiency of gamma radiation for shrew, small fish and crustacean, from Blaylock et al. (1993) or DOE (19
[g] Φ_γ = Absorption efficiency of gamma radiation for large fish, from Blaylock et al. (1993) or DOE (1998)
[h] BCF = Bioconcentration factor (NRC 1992)
[i] Gamma values are those for Barium-137m, a daughter product.
[j] Values used are for the higher energies between Plutonium-239 and Plutonium-240 (most conservative).
[k] Values used are for the higher energies between Uranium-233 and Uranium-234 (most conservative).
Note: Progeny are not included in internal exposure calculations; all detected isotopes are evaluated individually.

TABLE M.18

Ecological Surface Soil (0-1 ft) Screening *
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value	Source[1]	Screening HQ [2]	COPC? / Comments [3]
Volatiles	Acetone	X	6 / 15	9.07E-03	4.00E-03	5.20E-02	MW12-8	NSV	NA	--	Yes-No sc.value
	Methyl butyl ketone	X	1 / 15	5.57E-03	1.00E-03	1.00E-03	SB12-4	NSV	NA	--	Yes-No sc.value
	Methylene chloride		1 / 15	5.57E-03	1.00E-03	1.00E-03	MW12-12	0.2	Min of Housing	0.01	No-MDC<sc.value
	Toluene		4 / 15	4.97E-03	1.00E-03	4.00E-03	SB12-4	0.05	Old Dutch	0.08	No-MDC<sc.value
PAHs	Benzo(a)anthracene	X	5 / 15	2.98E-02	4.00E-03	2.70E-02	SS12-183	NSV	NA	--	Yes-No sc.value
	Benzo(a)pyrene		5 / 15	2.97E-02	5.00E-03	1.80E-02	SS12-183	0.1	Old Dutch	0.18	No-MDC<sc.value
	Benzo(b)fluoranthene	X	6 / 15	2.97E-02	4.20E-03	3.60E-02	SS12-183	NSV	NA	--	Yes-No sc.value
	Benzo(ghi)perylene	X	5 / 15	2.97E-02	4.00E-03	2.30E-02	SB12-1	NSV	NA	--	Yes-No sc.value
	Benzo(k)fluoranthene	X	4 / 15	3.20E-02	7.00E-03	2.60E-02	SS12-183	NSV	NA	--	Yes-No sc.value
	Chrysene	X	7 / 15	2.76E-02	4.30E-03	5.10E-02	SS12-183	NSV	NA	--	Yes-No sc.value
	Dibenz(a,h)anthracene	X	2 / 15	3.55E-02	6.30E-03	1.60E-02	SB12-1	NSV	NA	--	Yes-No sc.value
	Fluoranthene		8 / 15	2.36E-02	4.10E-03	2.40E-02	SS12-183	0.1	Old Dutch	0.24	No-MDC<sc.value
	Fluorene	X	1 / 15	3.71E-02	5.40E-03	5.40E-03	SB12-1	NSV	NA	--	Yes-No sc.value
	Indeno(1,2,3-cd)pyrene	X	4 / 15	3.15E-02	4.30E-03	1.80E-02	SB12-1	NSV	NA	--	Yes-No sc.value
	Phenanthrene		5 / 15	2.85E-02	5.10E-03	8.50E-03	SB12-1	0.1	Old Dutch	0.09	No-MDC<sc.value
	Pyrene		7 / 15	2.62E-02	4.20E-03	2.20E-02	MW12-8	0.1	Old Dutch	0.22	No-MDC<sc.value
Semi-vols	Bis(2-Ethylhexyl)phthal	X	3 / 15	4.68E-02	1.00E-02	2.10E-01	MW12-12	NSV	NA	--	Yes-No sc.value
	Butylbenzylphthalate	X	1 / 15	3.72E-02	6.70E-03	6.70E-03	SB12-1	NSV	NA	--	Yes-No sc.value
	Carbazole	X	1 / 15	3.78E-02	1.60E-02	1.60E-02	SB12-1	NSV	NA	--	Yes-No sc.value
	Di-n-butylphthalate		3 / 15	3.68E-02	6.00E-03	6.80E-02	SB12-1	200	Oak Ridge	0.00	No-MDC<sc.value
	Di-n-octylphthalate	X	2 / 15	3.52E-02	6.00E-03	7.80E-03	SB12-1	NSV	NA	--	Yes-No sc.value
	Dibenzofuran	X	1 / 15	3.71E-02	5.60E-03	5.60E-03	SB12-1	NSV	NA	--	Yes-No sc.value
PCBs	Aroclor-1254	X	3 / 15	9.14E-02	2.40E-02	6.70E-01	SS12-17	0.02	Min of Housing (a)	33.50	Yes-MDC>sc.value
Pesticides	4,4'-DDE	X	2 / 15	3.04E-03	4.80E-03	1.50E-02	SS12-17	0.0025	Min of Housing (b)	6.00	Yes-MDC>sc.value
	4,4'-DDT	X	2 / 15	4.64E-03	1.80E-03	4.20E-02	SS12-17	0.0025	Min of Housing (b)	16.80	Yes-MDC>sc.value
	Dieldrin	X	2 / 15	3.04E-03	5.80E-03	1.40E-02	SS12-17	0.0005	Min of Housing	28.00	Yes-MDC>sc.value
	Endosulfan I		1 / 15	1.07E-03	1.80E-03	1.80E-03	SS12-17	0.1	Old Dutch (c)	0.02	No-MDC<sc.value
	Endosulfan II		1 / 15	2.03E-03	2.70E-03	2.70E-03	SB12-3	0.1	Old Dutch (c)	0.03	No-MDC<sc.value
	Endrin	X	2 / 15	2.17E-03	2.60E-03	4.20E-03	SS12-17	0.001	Min of Housing	4.20	Yes-MDC>sc.value
	Endrin aldehyde		2 / 15	2.32E-03	3.50E-03	5.60E-03	SS12-17	0.1	Old Dutch	0.06	No-MDC<sc.value
	Gamma-Chlordane		3 / 15	2.36E-03	3.20E-03	1.10E-02	SS12-17	0.1	Old Dutch (d)	0.11	No-MDC<sc.value
	Heptachlor epoxide		2 / 15	1.41E-03	3.30E-03	4.60E-03	SS12-17	0.1	Old Dutch (e)	0.05	No-MDC<sc.value
Metals[4]	Aluminum	X	15 / 15	1.11E+04	7.16E+03	1.58E+04	SB12-2B	50	Oak Ridge	316.00	Yes-MDC>sc.value
	Antimony		1 / 5	5.67E-01	8.40E-01	8.40E-01	SB12-1	3.5	New Dutch	0.24	No-MDC<sc.value
	Arsenic		15 / 15	3.73E+00	2.80E+00	4.90E+00	SB12-2B	10	Oak Ridge	0.49	No-MDC<sc.value

TABLE M.18

Ecological Surface Soil (0-1 ft) Screening *
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value	Source[1]	Screening HQ [2]	COPC? / Comments [3]
	Barium		15 / 15	7.32E+01	5.03E+01	8.62E+01	SB12-2B,SS12-183	165	New Dutch	0.52	No-MDC<sc.value
	Beryllium		15 / 15	4.07E-01	2.50E-01	5.90E-01	SS12-183	1.1	New Dutch	0.54	No-MDC<sc.value
	Cadmium	X	2 / 15	3.29E-01	9.80E-01	3.20E+00	SB12-2	1.6	New Dutch	2.00	Yes-MDC>sc.value
	Chromium	X	15 / 15	1.72E+01	1.30E+01	2.33E+01	SB12-2B	0.4	Oak Ridge	58.25	Yes-MDC>sc.value
	Cobalt		15 / 15	1.04E+01	8.00E+00	1.75E+01	SB12-2B	20	Old Dutch	0.88	No-MDC<sc.value
	Copper		15 / 15	2.00E+01	1.34E+01	3.25E+01	MW12-12	40	New Dutch	0.81	No-MDC<sc.value
	Iron	X	15 / 15	2.09E+04	1.63E+04	2.71E+04	MW12-12	200	Oak Ridge	135.50	Yes-MDC>sc.value
	Lead		15 / 15	1.42E+01	1.10E+01	2.22E+01	SB12-2B	50	Old Dutch	0.44	No-MDC<sc.value
	Manganese	X	15 / 15	6.36E+02	3.27E+02	1.42E+03	SB12-2B	100	Oak Ridge	14.20	Yes-MDC>sc.value
	Mercury	X	3 / 15	4.13E-02	7.00E-02	1.10E-01	MW12-10	0.1	Oak Ridge	1.10	Yes-MDC>sc.value
	Nickel	X	14 / 15	2.43E+01	1.62E+01	3.99E+01	MW12-12	30	Oak Ridge	1.33	Yes-MDC>sc.value
	Selenium	X	1 / 15	5.63E-01	2.30E+00	2.30E+00	SB12-1	0.81	New Dutch	2.84	Yes-MDC>sc.value
	Silver		1 / 15	1.54E-01	2.00E-01	2.00E-01	SB12-2	2	Oak Ridge	0.10	No-MDC<sc.value
	Thallium	X	5 / 15	8.84E-01	1.20E+00	1.80E+00	MW12-8	1	Oak Ridge	1.80	Yes-MDC>sc.value
	Vanadium	X	15 / 15	1.86E+01	1.36E+01	2.40E+01	SB12-4	2	Oak Ridge	12.00	Yes-MDC>sc.value
	Zinc	X	15 / 15	5.99E+01	4.50E+01	8.37E+01	SB12-2	50	Oak Ridge	1.67	Yes-MDC>sc.value
Misc	Cyanide	X	2 / 15	4.59E-01	1.20E+00	1.60E+00	MW12-8	5	Dutch	0.32	No-MDC<sc.value

Notes:

(1) Sources include Beyer 1998 (Old Dutch); Oak Ridge National Laboratory (Efroymson et al. 1997); CCME 1997 (Canadian); Ministry of Housing, Spatial Planning and Environment 1994; and Crommentuijn et al. 1997 (New Dutch); Dutch Ministry of Housing, Spatial Planning and Environment, February 4, 2000 (Dutch)

(2) Screening HQ = maximum detected concentration / screening value.

(3) An analyte is considered a Chemical of Potential Concern (COPC) if the maximum detected concentration exceeds the screening value or if no screening value is available.

(4) Naturally occuring analytes calcium, sodium, potassium, magnesium, and phosphorous were not included in screening.

MDC = maximum detected concentration
NA = not appropriate or not analyzed.
(a) Value for total arochlors.
(b) Value for total DDD/DDE/DDT.
(c) Value for endosulfan.
(d) Value for chlordane.
(e) Value for heptachlor.

TABLE M.19

Ecological Mixed Surface and Subsurface Soil (0-4 ft) Screening *
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value	Source[1]	Screening HQ [2]	COPC? / Comments [3]
Volatiles	Acetone	X	9 / 23	8.85E-03	4.00E-03	5.20E-02	MW12-8	NSV	NA	--	Yes-No sc.value
	Ethyl benzene		1 / 23	7.74E-03	4.90E-02	4.90E-02	SB12-3	0.05	Old Dutch	0.98	No-MDC<sc.value
	Methyl butyl ketone	X	1 / 23	6.00E-03	1.00E-03	1.00E-03	SB12-4	NSV	NA	--	Yes-No sc.value
	Methylene chloride		1 / 23	6.00E-03	1.00E-03	1.00E-03	SB12-3	0.2	Min of Housing	0.01	No-MDC<sc.value
	Toluene		7 / 23	6.04E-03	1.00E-03	1.50E-02	SB12-2,TP12-2B	0.05	Old Dutch	0.30	No-MDC<sc.value
	Total Xylenes	X	1 / 23	2.82E-02	5.20E-01	5.20E-01	TP12-2B	0.05	Old Dutch	10.40	Yes-MDC>sc.value
	Trichloroethene	X	3 / 23	6.85E-03	3.00E-03	2.60E-02	TP12A-1	0.001	Min of Housing	26.00	Yes-MDC>sc.value
PAHs	2-Methylnaphthalene	X	2 / 23	4.62E-02	2.10E-02	5.60E-02	TP12-2B	NSV	NA	--	Yes-No sc.value
	Acenaphthylene	X	1 / 23	4.59E-02	3.30E-02	3.30E-02	TP12A-1	NSV	NA	--	Yes-No sc.value
	Anthracene		1 / 23	4.86E-02	9.60E-02	9.60E-02	TP12A-1	0.1	Old Dutch	0.96	No-MDC<sc.value
	Benzo(a)anthracene	X	7 / 23	3.82E-02	4.00E-03	1.80E-01	TP12A-1	NSV	NA	--	Yes-No sc.value
	Benzo(a)pyrene	X	7 / 23	3.94E-02	5.00E-03	2.00E-01	TP12A-1	0.1	Old Dutch	2.00	Yes-MDC>sc.value
	Benzo(b)fluoranthene	X	8 / 23	3.89E-02	4.20E-03	1.90E-01	TP12A-1	NSV	NA	--	Yes-No sc.value
	Benzo(ghi)perylene	X	6 / 23	4.34E-02	4.00E-03	1.20E-01	TP12A-1	NSV	NA	--	Yes-No sc.value
	Benzo(k)fluoranthene	X	6 / 23	3.93E-02	7.00E-03	1.60E-01	TP12A-1	NSV	NA	--	Yes-No sc.value
	Chrysene	X	9 / 23	3.97E-02	4.30E-03	2.40E-01	TP12A-1	NSV	NA	--	Yes-No sc.value
	Dibenz(a,h)anthracene	X	3 / 23	4.44E-02	6.30E-03	5.70E-02	TP12A-1	NSV	NA	--	Yes-No sc.value
	Fluoranthene	X	12 / 23	4.24E-02	4.00E-03	4.20E-01	TP12A-1	0.1	Old Dutch	4.20	Yes-MDC>sc.value
	Fluorene	X	2 / 23	4.53E-02	5.40E-03	5.20E-02	TP12A-1	NSV	NA	--	Yes-No sc.value
	Indeno(1,2,3-cd)pyrene	X	5 / 23	4.46E-02	4.30E-03	1.20E-01	TP12A-1	NSV	NA	--	Yes-No sc.value
	Naphthalene	X	1 / 23	7.72E-02	6.00E-01	6.00E-01	TP12-2B	0.1	Old Dutch	6.00	Yes-MDC>sc.value
	Phenanthrene	X	7 / 23	4.46E-02	5.10E-03	3.40E-01	TP12A-1	0.1	Old Dutch	3.40	Yes-MDC>sc.value
	Pyrene	X	10 / 23	4.36E-02	4.20E-03	3.80E-01	TP12A-1	0.1	Old Dutch	3.80	Yes-MDC>sc.value
Semi-vols	2,4-Dimethylphenol		1 / 23	4.51E-02	2.50E-02	2.50E-02	TP12A-1	0.05	Min of Housing (a)	0.50	No-MDC<sc.value
	4-Methylphenol	X	1 / 23	5.01E-02	1.40E-01	1.40E-01	TP12A-1	0.05	Min of Housing (a)	2.80	Yes-MDC>sc.value
	Bis(2-Ethylhexyl)phthalate	X	6 / 23	1.27E-01	1.00E-02	9.30E-01	TP12-2B	NSV	NA	--	Yes-No sc.value
	Butylbenzylphthalate	X	1 / 23	5.13E-02	6.70E-03	6.70E-03	SB12-1	NSV	NA	--	Yes-No sc.value
	Carbazole	X	1 / 23	5.17E-02	1.60E-02	1.60E-02	SB12-1	NSV	NA	--	Yes-No sc.value
	Di-n-butylphthalate		5 / 23	1.11E-01	6.00E-03	1.70E+00	TP12A-1	200	Oak Ridge	0.01	No-MDC<sc.value
	Di-n-octylphthalate	X	4 / 23	4.70E-02	5.20E-03	7.90E-03	SB12-3	NSV	NA	--	Yes-No sc.value
	Dibenzofuran	X	1 / 23	5.13E-02	5.60E-03	5.60E-03	SB12-1	NSV	NA	--	Yes-No sc.value
	Phenol	X	2 / 23	5.09E-02	4.80E-02	3.00E-01	TP12A-1	0.05	Min of Housing	6.00	Yes-MDC>sc.value
PCBs	Aroclor-1254	X	6 / 23	1.99E-01	2.40E-02	3.00E+00	SB12-3	0.02	Min of Housing (a)	150.00	Yes-MDC>sc.value
Pesticides	4,4'-DDE	X	4 / 23	4.40E-03	2.20E-03	4.20E-02	SB12-3	0.0025	Min of Housing (b)	16.80	Yes-MDC>sc.value
	4,4'-DDT	X	2 / 23	3.89E-03	1.80E-03	4.20E-02	SS12-17	0.0025	Min of Housing (b)	16.80	Yes-MDC>sc.value

TABLE M.19

Ecological Mixed Surface and Subsurface Soil (0-4 ft) Screening *
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value	Source[1]	Screening HQ [2]	COPC? / Comments [3]
	Aldrin		1 / 23	1.10E-03	7.90E-04	7.90E-04	TP12A-1	0.0025	Min of Housing	0.32	No-MDC<sc.value
	Alpha-BHC	X	1 / 23	1.19E-03	2.80E-03	2.80E-03	TP12-2C	0.0025	Min of Housing	1.12	Yes-MDC>sc.value
	Alpha-Chlordane		1 / 23	1.13E-03	1.50E-03	1.50E-03	SB12-3	0.1	Old Dutch (c)	0.02	No-MDC<sc.value
	Dieldrin	X	3 / 23	4.30E-03	5.80E-03	4.00E-02	SB12-3	0.0005	Min of Housing	80.00	Yes-MDC>sc.value
	Endosulfan I		1 / 23	1.14E-03	1.80E-03	1.80E-03	SS12-17	0.1	Old Dutch (d)	0.02	No-MDC<sc.value
	Endosulfan II		2 / 23	2.73E-03	2.70E-03	1.90E-02	SB12-3	0.1	Old Dutch (d)	0.19	No-MDC<sc.value
	Endrin	X	3 / 23	2.69E-03	2.60E-03	1.60E-02	TP12A-2	0.001	Min of Housing	16.00	Yes-MDC>sc.value
	Endrin aldehyde		2 / 23	2.38E-03	3.50E-03	5.60E-03	SS12-17	0.1	Old Dutch	0.06	No-MDC<sc.value
	Gamma-Chlordane		4 / 23	4.36E-03	3.20E-03	5.80E-02	SB12-3	0.1	Old Dutch (c)	0.58	No-MDC<sc.value
	Heptachlor		1 / 23	1.18E-03	2.60E-03	2.60E-03	TP12-2C	0.1	Old Dutch	0.03	No-MDC<sc.value
	Heptachlor epoxide		3 / 23	2.18E-03	3.30E-03	2.20E-02	SB12-3	0.1	Old Dutch (c)	0.22	No-MDC<sc.value
Metals[4]	Aluminum	X	23 / 23	1.09E+04	6.10E+03	1.58E+04	TP12A-2	50	Oak Ridge	316.00	Yes-MDC>sc.value
	Antimony		5 / 10	7.45E-01	3.10E-01	1.90E+00	TP12A-2	3.5	New Dutch	0.54	No-MDC<sc.value
	Arsenic		23 / 23	3.86E+00	2.80E+00	5.50E+00	MW12-12	10	Oak Ridge	0.55	No-MDC<sc.value
	Barium		23 / 23	7.75E+01	5.03E+01	1.25E+02	SB12-2	165	New Dutch	0.76	No-MDC<sc.value
	Beryllium		23 / 23	4.05E-01	2.40E-01	6.20E-01	TP12A-2	1.1	New Dutch	0.56	No-MDC<sc.value
	Cadmium	X	7 / 23	4.93E+00	9.80E-01	9.43E+01	TP12A-1	1.6	New Dutch	58.94	Yes-MDC>sc.value
	Chromium	X	23 / 23	2.16E+01	9.50E+00	8.33E+01	TP12A-1	0.4	Oak Ridge	208.25	Yes-MDC>sc.value
	Cobalt		23 / 23	1.01E+01	7.50E+00	1.75E+01	TP12A-2	20	Old Dutch	0.88	No-MDC<sc.value
	Copper	X	23 / 23	2.93E+01	1.34E+01	2.15E+02	TP12A-1	40	New Dutch	5.38	Yes-MDC>sc.value
	Iron	X	23 / 23	2.10E+04	1.58E+04	2.71E+04	SB12-3	200	Oak Ridge	135.50	Yes-MDC>sc.value
	Lead	X	23 / 23	2.94E+01	6.90E+00	3.66E+02	TP12A-1	50	Old Dutch	7.32	Yes-MDC>sc.value
	Manganese	X	23 / 23	5.83E+02	3.27E+02	1.42E+03	SB12-2B	100	Oak Ridge	14.20	Yes-MDC>sc.value
	Mercury	X	5 / 23	3.85E-02	4.00E-02	1.10E-01	MW12-10	0.1	Oak Ridge	1.10	Yes-MDC>sc.value
	Nickel	X	22 / 23	2.54E+01	1.62E+01	4.25E+01	TP12A-2	30	Oak Ridge	1.42	Yes-MDC>sc.value
	Selenium	X	3 / 23	5.66E-01	6.00E-01	2.30E+00	SB12-1	0.81	New Dutch	2.84	Yes-MDC>sc.value
	Silver	X	2 / 23	6.65E-01	2.00E-01	1.19E+01	TP12A-1	2	Oak Ridge	5.95	Yes-MDC>sc.value
	Thallium	X	6 / 23	7.60E-01	4.40E-01	1.80E+00	MW12-8	1	Oak Ridge	1.80	Yes-MDC>sc.value
	Vanadium	X	23 / 23	1.82E+01	1.13E+01	2.40E+01	MW12-12	2	Oak Ridge	12.00	Yes-MDC>sc.value
	Zinc	X	23 / 23	7.28E+01	4.24E+01	2.85E+02	TP12A-2	50	Oak Ridge	5.70	Yes-MDC>sc.value

TABLE M.19

Ecological Mixed Surface and Subsurface Soil (0-4 ft) Screening *
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value	Source[1]	Screening HQ [2]	COPC? / Comments [3]
Misc	Cyanide	X	2 / 23	4.05E-01	1.20E+00	1.60E+00	MW12-8	5	Dutch	0.32	No-MDC<sc.value

Notes:

(1) Sources include Beyer 1998 (Old Dutch), Oak Ridge National Laboratory (Efroymson et al. 1997); CCME 1997 (Canadian); Ministry of Housing, Spatial Planning and Environment 1994; and Crommentuijn et al. 1997 (New Dutch). Dutch Ministry of Housing, Spatial Planning and Environment, February 4, 2000 (Dutch)

(2) Screening HQ = maximum detected concentration / screening value.

(3) An analyte is considered a Chemical of Potential Concern (COPC) if the maximum detected concentration exceeds the screening value or if no screening value is available.

(4) Naturally occuring analytes calcium, sodium, potassium, magnesium, and phosphorous were not included in screening.

MDC = maximum detected concentration
NA = not appropriate or not analyzed.
(a) Value for total arochlors.
(b) Value for total DDD/DDE/DDT.
(c) Value for chlordane.
(d) Value for endosulfan.
(e) Value for heptachlor.

TABLE M.19

Ecological Mixed Surface and Subsurface Soil (0-4 ft) Screening *
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value	Source[1]	Screening HQ [2]	COPC? / Comments [3]

MDC = maximum detected concentration
NA = not appropriate or not analyzed.
(a) Value for total arochlors.
(b) Value for total DDD/DDE/DDT.
(c) Value for chlordane.
(d) Value for endosulfan.
(e) Value for heptachlor.

Table M.20
Ecological Internal Radionuclide Dose Calculations for Mixed Soils (0 to 4 ft)
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Constituent	Maximum Detected Concentration (pCi/g)	C (pCi/g/d)	SP_v[1]		BAF[2]		Estimated Internal Gamma Dose[3] (rad/d)	Estimated Internal Beta Dose[4] (rad/d)	Estimated Internal Alpha Dose[5] (rad/d)	Total Internal Dose[6] (rad/d)
Actinium-228	9.10E-01	1.36E-02	3.50E-03	(a)	2.50E-05	(a)	8.13E-09	3.31E-07	0.00E+00	3.40E-07
Bismuth-214	3.98E+01	6.29E-01	3.50E-02	(a)	4.00E-04	(a)	0.00E+00	9.31E-06	8.02E-06	1.73E-05
Cesium-137	1.30E+00	3.59E-02	1.30E-01	(a)	2.00E-02	(a)	1.32E-08	3.44E-07	0.00E+00	3.57E-07
Cobalt-57	2.00E-01	5.32E-03	8.10E-02	(a)	2.00E-02	(a)	3.74E-10	5.17E-09	0.00E+00	5.55E-09
Cobalt-60	5.00E-01	1.33E-02	8.10E-02	(a)	2.00E-02	(a)	1.48E-08	6.60E-08	0.00E+00	8.09E-08
Lead-210	7.86E+01	1.19E+00	5.80E-03	(a)	3.00E-04	(a)	2.05E-07	2.32E-06	0.00E+00	2.52E-06
Lead-211	1.27E+01	1.92E-01	5.80E-03	(a)	3.00E-04	(a)	8.43E-09	4.48E-06	0.00E+00	4.48E-06
Lead-214	4.44E+01	6.73E-01	5.80E-03	(a)	3.00E-04	(a)	1.03E-07	9.96E-06	0.00E+00	1.01E-05
Plutonium-239/240	2.00E-01	2.98E-03	3.90E-04	(a)	5.00E-07	(a)	2.14E-10	1.68E-09	7.87E-07	7.88E-07
Promethium-147	4.20E+00	7.39E-02	1.00E-02	(a)	5.00E-03	(a)	0.00E+00	2.35E-07	0.00E+00	2.35E-07
Radium-223	1.30E+00	8.86E-02	7.50E-02	(a)	1.03E-01	(a)	6.04E-08	3.39E-07	2.61E-05	2.65E-05
Radium-226	3.98E+01	2.71E+00	7.50E-02	(a)	1.03E-01	(a)	6.81E-07	5.56E-07	6.63E-04	6.65E-04
Radium-228	3.60E+00	2.45E-01	7.50E-02	(a)	1.03E-01	(a)	0.00E+00	2.14E-07	0.00E+00	2.14E-07
Thallium-208	8.80E-01	3.08E-02	4.00E-03	(a)	4.00E-02	(a)	4.51E-08	9.33E-07	0.00E+00	9.78E-07
Thorium-227	4.00E-01	6.01E-03	6.60E-03	(a)	6.00E-06	(a)	3.26E-10	1.41E-08	1.83E-06	1.85E-06
Thorium-230	2.30E+00	3.45E-02	6.60E-03	(a)	6.00E-06	(a)	2.48E-09	2.65E-08	8.27E-06	8.30E-06
Thorium-232	2.10E+00	3.15E-02	6.60E-03	(a)	6.00E-06	(a)	1.13E-09	1.94E-08	6.46E-06	6.48E-06
Thorium-234	1.60E+00	2.40E-02	6.60E-03	(a)	6.00E-06	(a)	8.05E-09	7.29E-08	0.00E+00	8.09E-08
Tritium	5.33E+01	7.93E-01					0.00E+00	2.44E-07	0.00E+00	2.44E-07
Uranium-233/234	1.40E+00	2.15E-02	1.70E-02	(a)	2.00E-04	(a)	1.54E-09	1.43E-08	5.30E-06	5.31E-06
Uranium-235	3.00E-01	4.60E-03	1.70E-02	(a)	2.00E-04	(a)	3.68E-10	1.15E-08	1.04E-06	1.05E-06
Uranium-238	1.00E+00	1.53E-02	1.70E-02	(a)	2.00E-04	(a)	5.50E-10	7.85E-09	3.29E-06	3.30E-06
TOTAL DOSE							1.15E-06	2.92E-05	7.25E-04	7.55E-04

Note: Value of 0 indicates element does not emit radiation in question (alpha, beta, or gamma).

(a) NRC 1992.

[1] SP: soil-to-plant uptake factor, leafy vegetables.

[2] BAF: animal bioaccumulation factor.

[3] Estimated internal gamma dose (D) = ((CF) *(C)*(Eγnγ) * (Φγ))

where,

D = dose (rad/d) (includes daughters)

CF = conversion factor (1E-12Ci/pCi * 3.7E+10 dis/sec per Ci * 1/62.4E+06 rad per Mev/g * 3600 sec/hr * 24 hr/d)

C = daily ingested concentration per gram body weight (pCi/g) =

Where:

C = (MDC*SP*0.2*FI*PDF) + (MDC*BAF*FI*ADF) + (MDC*FI*SDF)

MDC = Maximum Detected Concentration (pCi/g)

SP_v = soil-to-plant uptake factor for vegetative matter

0.2 conversion factor for dry weight based SP values (NRC 1992 values only)

FI = Shrew food ingestion rate per gram body weight per day (g/g-d) = 0.62

PDF = Plant diet fraction = 16.7%

ADF = Animal/Insect diet fraction = 80.8%

SDF = Soil diet fraction (incidental soil ingestion portion of diet) = 2.4%

Eγ = photon energy emitted during transition from a higher to a lower energy state (MeV) (Table x)

nγ = proportion of disintegrations producing a γ-particle (Table x)

[4] Estimated internal beta dose (D)= ((CF) * (C) * (Eβnβ) * (Φβ))

where,

D = dose (rad/d) (includes daughters)

CF = conversion factor (1E-12Ci/pCi * 3.7E+10 dis/sec per Ci * 1/62.4E+06 rad per Mev/g * 3600 sec/hr * 24 hr/d)

C = daily ingested concentration per gram body weight (pCi/g)

Eβ = beta energy of the radionuclide (Mev) (Table 6.1-23)

nβ = proportion of disintegrations producing a β-particle (Table 6.1-23)

Φβ = absorbed fraction of energy Eβ (dimensionless) (Table 6.1-23)

[5] Estimated internal alpha dose (D) = ((CF) *(C)* (Eαnα) * (Φα))

where,

D = dose (rad/d) (includes daughters)

CF = conversion factor (1E-12Ci/pCi * 3.7E+10 dis/sec per Ci * 1/62.4E+06 rad per Mev/g * 3600 sec/hr * 24 hr/d)

C = daily ingested concentration per gram body weight (pCi/g)

Eα = alpha energy of the radionuclide (Mev) (Table 6.1-23)

nα = proportion of disintegrations producing an α-particle (Table 6.1-23)

Φα = absorbed fraction of energy Eα (dimensionless (Table 6.1-23)

[6] Total internal dose = Estimated Internal Gamma Dose + Estimated Internal Beta Dose + Estimated Internal Alpha Dose

Table M.21
Ecological Radionuclide Screening Value Comparison for Mixed Soils (0 to 4 ft)
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Constituent	Maximum Detected Concentration (pCi/g)	Estimated External Dose - Shrew[1] (rad/d)	Estimated Total Internal Dose - Shrew[2] (rad/d)	Total (External + Internal) Dose - Shrew (rad/d)	Soil Screening Benchmark[3] (rad/d)	Dose Exceeds Screening Benchmark (Y/N)	COPC[5]?	Basis for Elimination
Actinium-228	9.10E-01	5.13E-05	3.40E-07	5.16E-05	1.00E-02	N	No	<Benchmark
Bismuth-214	3.98E+01	3.55E-03	1.73E-05	3.57E-03	1.00E-02	N	No	<Benchmark
Cesium-137	1.30E+00	1.05E-08	3.57E-07	3.67E-07	1.00E-02	N	No	<Benchmark
Cobalt-57	2.00E-01	1.08E-06	5.55E-09	1.09E-06	1.00E-02	N	No	<Benchmark
Cobalt-60	5.00E-01	7.41E-05	8.09E-08	7.42E-05	1.00E-02	N	No	<Benchmark
Lead-210	7.86E+01	2.10E-06	2.52E-06	4.63E-06	1.00E-02	N	No	<Benchmark
Lead-211	1.27E+01	3.79E-05	4.48E-06	4.24E-05	1.00E-02	N	No	<Benchmark
Lead-214	4.44E+01	6.08E-04	1.01E-05	6.18E-04	1.00E-02	N	No	<Benchmark
Plutonium-239/240	2.00E-01	6.20E-10	7.88E-07	7.89E-07	1.00E-02	N	No	<Benchmark
Promethium-147	4.20E+00	2.29E-09	2.35E-07	2.37E-07	1.00E-02	N	No	<Benchmark
Radium-223	1.30E+00	8.22E-06	2.65E-05	3.47E-05	1.00E-02	N	No	<Benchmark
Radium-226	3.98E+01	1.34E-05	6.65E-04	6.78E-04	1.00E-02	N	No	<Benchmark
Radium-228	3.60E+00	0.00E+00	2.14E-07	2.14E-07	1.00E-02	N	No	<Benchmark
Thallium-208	8.80E-01	1.74E-04	9.78E-07	1.75E-04	1.00E-02	N	No	<Benchmark
Thorium-227	4.00E-01	2.17E-06	1.85E-06	4.01E-06	1.00E-02	N	No	<Benchmark
Thorium-230	2.30E+00	3.01E-08	8.30E-06	8.33E-06	1.00E-02	N	No	<Benchmark
Thorium-232	2.10E+00	1.19E-08	6.48E-06	6.49E-06	1.00E-02	N	No	<Benchmark
Thorium-234	1.60E+00	4.24E-07	8.09E-08	5.05E-07	1.00E-02	N	No	<Benchmark
Tritium	5.33E+01	0.00E+00	2.44E-07	2.44E-07	1.00E-02	N	No	<Benchmark
Uranium-233/234	1.40E+00	6.13E-09	5.31E-06	5.32E-06	1.00E-02	N	No	<Benchmark
Uranium-235	3.00E-01	2.30E-06	1.05E-06	3.35E-06	1.00E-02	N	No	<Benchmark
Uranium-238	1.00E+00	1.13E-09	3.30E-06	3.30E-06	1.00E-02	N	No	<Benchmark
TOTAL DOSE		4.48E-03	7.55E-04	5.23E-03	1.00E-02	N	No	<Benchmark

[1] Estimated dose of gamma radiation (D)= (Cs * DCF * CFa * CFd * 4), includes daughters.

where:

D = dose (rad/d)
Cs = maximum radionuclide concentration in soil (pCi/g)
DCF = dose conversion factor (Sv/d per Bq/m3) (includes daughters)
CFa = conversion factor for activity (5.92E+04 Bq/m3 = 1 pCi/g)
CFd = conversion factor for dose (100 rem/Sv)

[2] Internal dose from Tables 6.1-24

[3] Source: IAEA 1992.

[4] 2X average background of surface soil interval (0 to 1 ft).

[5] COPC =constituent of potential concern if total dose is greater than soil screening benchmark (SSB) and also if total dose is greater than 2X average background

ND = not detected

TABLE M.22

Ecological Surface Soil (0-1 ft) Screening *
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value	Source[1]	Screening HQ [2]	COPC? / Comments [3]
Volatiles	Acetone	X	7 / 16	1.06E-02	7.00E-03	6.10E-02	TP12-3A	NSV	NA	--	Yes-No sc.value
	Methylene chloride		1 / 16	1.69E-02	1.80E-01	1.80E-01	TP12-3A	0.2	Min of Housing	0.90	No-MDC<sc.value
	Toluene		1 / 16	6.03E-03	6.00E-03	6.00E-03	TP12-3A	0.05	Old Dutch	0.12	No-MDC<sc.value
PAHs	2-Methylnaphthalene	X	1 / 16	4.66E-02	7.80E-03	7.80E-03	TP12-7AA	NSV	NA	--	Yes-No sc.value
	Acenaphthene	X	4 / 16	3.36E-02	5.00E-03	4.40E-02	TP12A-6	NSV	NA	--	Yes-No sc.value
	Anthracene		6 / 16	3.37E-02	4.60E-03	6.30E-02	TP12A-6	0.1	Old Dutch	0.63	No-MDC<sc.value
	Benzo(a)anthracene	X	12 / 16	3.77E-02	5.30E-03	2.00E-01	TP12-8A	NSV	NA	--	Yes-No sc.value
	Benzo(a)pyrene		13 / 16	3.00E-02	4.80E-03	1.00E-01	TP12-8A	0.1	Old Dutch	1.00	No-MDC<sc.value
	Benzo(b)fluoranthene	X	12 / 16	3.94E-02	5.00E-03	2.00E-01	TP12-8A	NSV	NA	--	Yes-No sc.value
	Benzo(ghi)perylene	X	10 / 16	2.58E-02	7.50E-03	3.50E-02	TP12-8A	NSV	NA	--	Yes-No sc.value
	Benzo(k)fluoranthene	X	12 / 16	3.57E-02	5.10E-03	1.70E-01	TP12-8A	NSV	NA	--	Yes-No sc.value
	Chrysene	X	14 / 16	4.57E-02	4.50E-03	3.10E-01	TP12-8A	NSV	NA	--	Yes-No sc.value
	Dibenz(a,h)anthracene	X	7 / 16	2.86E-02	5.60E-03	4.30E-02	TP12A-6	NSV	NA	--	Yes-No sc.value
	Fluoranthene	X	12 / 16	6.12E-02	5.10E-03	3.00E-01	TP12A-6	0.1	Old Dutch	3.00	Yes-MDC>sc.value
	Fluorene	X	1 / 16	3.88E-02	3.50E-02	3.50E-02	TP12A-6	NSV	NA	--	Yes-No sc.value
	Indeno(1,2,3-cd)pyrene	X	10 / 16	2.83E-02	6.00E-03	6.90E-02	TP12A-6	NSV	NA	--	Yes-No sc.value
	Phenanthrene	X	13 / 16	4.02E-02	6.00E-03	2.80E-01	TP12A-6	0.1	Old Dutch	2.80	Yes-MDC>sc.value
	Pyrene	X	12 / 16	6.25E-02	1.00E-02	3.10E-01	TP12-8A	0.1	Old Dutch	3.10	Yes-MDC>sc.value
Semi-vols	Bis(2-Ethylhexyl)phthal	X	1 / 16	4.80E-02	5.80E-03	5.80E-03	MW12-15	NSV	NA	--	Yes-No sc.value
	Butylbenzylphthalate	X	1 / 16	4.65E-02	4.10E-03	4.10E-03	TP12-3A	NSV	NA	--	Yes-No sc.value
	Carbazole	X	5 / 16	3.20E-02	6.40E-03	4.00E-02	TP12A-6	NSV	NA	--	Yes-No sc.value
	Di-n-butylphthalate		3 / 16	3.52E-02	4.20E-03	4.70E-02	TP12A-6	200	Oak Ridge	0.00	No-MDC<sc.value
	Di-n-octylphthalate	X	3 / 16	4.32E-02	7.30E-03	1.50E-02	MW12-33	NSV	NA	--	Yes-No sc.value
Pesticides	4,4'-DDD	X	4 / 16	3.33E-03	2.20E-03	1.40E-02	TP12-5A	0.0025	Min of Housing (a)	5.58	Yes-MDC>sc.value
	4,4'-DDE	X	3 / 16	2.51E-03	2.50E-03	6.40E-03	TP12A-6	0.0025	Min of Housing (a)	2.56	Yes-MDC>sc.value
	4,4'-DDT	X	4 / 16	2.18E-03	2.20E-03	3.80E-03	TP12A-6	0.0025	Min of Housing (a)	1.52	Yes-MDC>sc.value
	Heptachlor		1 / 16	1.02E-03	1.05E-03	1.05E-03	TP12-3A	0.1	Old Dutch	0.01	No-MDC<sc.value
Metals[4]	Aluminum	X	16 / 16	1.05E+04	6.17E+03	1.41E+04	MW12-33	50	Oak Ridge	282.00	Yes-MDC>sc.value
	Antimony		1 / 3	5.00E-01	2.50E-01	2.50E-01	TP12A-6	3.5	New Dutch	0.07	No-MDC<sc.value
	Arsenic		16 / 16	3.75E+00	2.10E+00	5.80E+00	TP12-7AA	10	Oak Ridge	0.58	No-MDC<sc.value
	Barium		16 / 16	8.32E+01	5.18E+01	1.06E+02	TP12-8A	165	New Dutch	0.64	No-MDC<sc.value
	Beryllium		16 / 16	4.51E-01	2.60E-01	6.90E-01	MW12-33	1.1	New Dutch	0.63	No-MDC<sc.value
	Cadmium		1 / 16	1.10E-01	7.00E-01	7.00E-01	TP12A-6	1.6	New Dutch	0.44	No-MDC<sc.value
	Chromium	X	16 / 16	1.66E+01	1.07E+01	2.46E+01	TP12-7AA	0.4	Oak Ridge	61.50	Yes-MDC>sc.value
	Cobalt		16 / 16	9.23E+00	6.80E+00	1.16E+01	TP12-7BA	20	Old Dutch	0.58	No-MDC<sc.value

TABLE M.22

Ecological Surface Soil (0-1 ft) Screening *
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value	Source[1]	Screening HQ [2]	COPC? / Comments [3]
	Copper		16 / 16	1.89E+01	1.46E+01	2.60E+01	TP12-7AA	40	New Dutch	0.65	No-MDC<sc.value
	Iron	X	16 / 16	2.07E+04	1.54E+04	2.61E+04	TP12A-6	200	Oak Ridge	130.50	Yes-MDC>sc.value
	Lead		16 / 16	1.72E+01	6.70E+00	3.98E+01	TP12-7AA	50	Old Dutch	0.80	No-MDC<sc.value
	Manganese	X	16 / 16	5.14E+02	3.12E+02	7.00E+02	MW12-33	100	Oak Ridge	7.00	Yes-MDC>sc.value
	Mercury		6 / 16	4.34E-02	6.00E-02	1.00E-01	TP12-3A	0.1	Oak Ridge	1.00	No-MDC<sc.value
	Nickel	X	14 / 16	2.23E+01	1.87E+01	3.49E+01	TP12-7BA	30	Oak Ridge	1.16	Yes-MDC>sc.value
	Selenium	X	6 / 16	6.07E-01	4.30E-01	1.20E+00	TP12A-6	0.81	New Dutch	1.48	Yes-MDC>sc.value
	Silver		1 / 16	1.27E-01	3.00E-01	3.00E-01	TP12-3A	2	Oak Ridge	0.15	No-MDC<sc.value
	Thallium	X	7 / 16	8.80E-01	4.80E-01	1.70E+00	MW12-14,TP12-7AA	1	Oak Ridge	1.70	Yes-MDC>sc.value
	Vanadium	X	16 / 16	1.84E+01	1.17E+01	2.46E+01	MW12-33	2	Oak Ridge	12.30	Yes-MDC>sc.value
	Zinc	X	16 / 16	1.04E+02	4.10E+01	6.56E+02	TP12-7BA	50	Oak Ridge	13.12	Yes-MDC>sc.value

Notes:

(1) Sources include Beyer 1998 (Old Dutch); Oak Ridge National Laboratory (Elfroymson et al. 1997); CCME 1997 (Canadian); Ministry of Housing, Spatial Planning and Environment 1994; and Crommentuijn et al. 1997 (New Dutch).

(2) Screening HQ = maximum detected concentration / screening value.

(3) An analyte is considered a Chemical of Potential Concern (COPC) if the maximum detected concentration exceeds the screening value or if no screening value is available.

(4) Naturally occuring analytes calcium, sodium, potassium, magnesium, and phosphorous were not included in screening.

MDC = maximum detected concentration
NA = not appropriate or not analyzed.
(a) Value for total DDD/DDE/DDT.

TABLE M.23

Ecological Mixed Surface and Subsurface Soil (0-4 ft) Screening *
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value[1]	Source[2]	Screening HQ [3]	COPC? / Comments [4]
Volatiles	Acetone	X	8 / 32	0.009	0.007	0.061	TP12-3A	NSV	NA	--	Yes-No sc.value
	Chlorobenzene		2 / 32	0.006	0.001	0.005	TP12A-4	0.05	Old Dutch	0.10	No-MDC< sc.value
	Methylene chloride		2 / 32	0.011	0.001	0.18	TP12-3A	0.2	Min of Housing	0.90	No-MDC< sc.value
	Toluene		2 / 32	0.006	0.002	0.006	TP12-3A	0.05	Old Dutch	0.12	No-MDC< sc.value
	Trichloroethene	X	1 / 32	0.006	0.002	0.002	TP12A-4	0.001	Min of Housing	2.00	Yes-MDC>sc.value
PAHs	2-Methylnaphthalene	X	3 / 31	0.07	0.004	0.008	TP12-7AA	NSV	NA	--	Yes-No sc.value
	Acenaphthene	X	5 / 31	0.064	0.005	0.044	TP12A-6	NSV	NA	--	Yes-MDC>sc.value
	Anthracene		10 / 31	0.055	0.005	0.063	TP12A-6	0.1	Old Dutch	0.63	No-MDC< sc.value
	Benzo(a)anthracene	X	21 / 31	0.057	0.005	0.2	TP12-8A	NSV	NA	--	Yes-No sc.value
	Benzo(a)pyrene	X	23 / 32	0.054	0.005	0.18	TP12A-7	0.1	Old Dutch	1.80	Yes-MDC>sc.value
	Benzo(b)fluoranthene	X	22 / 31	0.064	0.005	0.32	TP12A-7	NSV	NA	--	Yes-No sc.value
	Benzo(ghi)perylene	X	18 / 32	0.05	0.005	0.098	TP12A-7	NSV	NA	--	Yes-No sc.value
	Benzo(k)fluoranthene	X	18 / 31	0.063	0.005	0.17	TP12-8A	NSV	NA	--	Yes-No sc.value
	Chrysene	X	24 / 31	0.064	0.005	0.31	TP12-8A	NSV	NA	--	Yes-No sc.value
	Dibenz(a,h)anthracene	X	9 / 31	0.056	0.006	0.099	TP12A-7	NSV	NA	--	Yes-No sc.value
	Fluoranthene	X	22 / 32	0.081	0.005	0.32	TP12A-7	0.1	Old Dutch	3.20	Yes-MDC>sc.value
	Fluorene	X	2 / 31	0.067	0.012	0.035	TP12A-6	NSV	NA	--	Yes-MDC>sc.value
	Indeno(1,2,3-cd)pyrene	X	16 / 31	0.054	0.006	0.14	TP12A-7	NSV	NA	--	Yes-No sc.value
	Phenanthrene	X	22 / 31	0.059	0.005	0.28	TP12A-6	0.1	Old Dutch	2.80	Yes-MDC>sc.value
	Pyrene	X	22 / 32	0.077	0.008	0.31	TP12-8A	0.1	Old Dutch	3.10	Yes-MDC>sc.value
Semi-vols	Bis(2-Ethylhexyl)phthalate	X	5 / 32	0.079	0.005	0.016	TP12-6C	NSV	NA	--	Yes-No sc.value
	Butylbenzylphthalate	X	5 / 31	0.069	0.004	0.03	TP12-6C	NSV	NA	--	Yes-No sc.value
	Carbazole	X	7 / 31	0.063	0.006	0.04	TP12A-6	NSV	NA	--	Yes-No sc.value
	Dibenzofuran	X	1 / 31	0.072	0.004	0.004	TP12-23B	NSV	NA	--	Yes-No sc.value
	Di-n-butylphthalate		6 / 31	0.093	0.004	0.05	TP12A-7	200	Oak Ridge	0.00	No-MDC< sc.value
	Di-n-octylphthalate	X	3 / 31	0.07	0.007	0.015	MW12-33	NSV	NA	--	Yes-No sc.value
Pesticides	4,4'-DDD	X	4 / 32	0.003	0.002	0.014	TP12-5A	0.0025	Min of Housing (a)	5.58	Yes-MDC>sc.value
	4,4'-DDE	X	6 / 32	0.002	0.002	0.006	TP12A-6	0.0025	Min of Housing (a)	2.56	Yes-MDC>sc.value
	4,4'-DDT	X	7 / 32	0.002	0.002	0.004	TP12-8C	0.0025	Min of Housing (a)	1.76	Yes-MDC>sc.value
	Alpha-Chlordane		1 / 32	0.001	0.003	0.003	TP12A-7	0.1	Old Dutch (b)	0.03	No-MDC< sc.value
	Gamma-Chlordane		1 / 32	0.001	0.002	0.002	TP12A-7	0.1	Old Dutch (b)	0.02	No-MDC< sc.value
	Heptachlor		1 / 32	0.001	0.001	0.001	TP12-3A	0.1	Old Dutch	0.01	No-MDC< sc.value
Metals	Aluminum	X	32 / 32	10608	4140	18600	TP12A-7	50	Oak Ridge	372.00	Yes-MDC>sc.value
	Antimony		2 / 8	0.295	0.25	0.39	TP12A-7	3.5	New Dutch	0.11	No-MDC< sc.value
	Arsenic		32 / 32	4.197	2.1	7.7	TP12A-7	10	Oak Ridge	0.77	No-MDC< sc.value

TABLE M.23

Ecological Mixed Surface and Subsurface Soil (0-4 ft) Screening *
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value[1]	Source[2]	Screening HQ [3]	COPC? / Comments [4]
Volatiles	Acetone	X	8 / 32	0.009	0.007	0.061	TP12-3A	NSV	NA	--	Yes-No sc.value
	Chlorobenzene		2 / 32	0.006	0.001	0.005	TP12A-4	0.05	Old Dutch	0.10	No-MDC< sc.value
	Methylene chloride		2 / 32	0.011	0.001	0.18	TP12-3A	0.2	Min of Housing	0.90	No-MDC< sc.value
	Toluene		2 / 32	0.006	0.002	0.006	TP12-3A	0.05	Old Dutch	0.12	No-MDC< sc.value
	Trichloroethene	X	1 / 32	0.006	0.002	0.002	TP12A-4	0.001	Min of Housing	2.00	Yes-MDC>sc.value
PAHs	2-Methylnaphthalene	X	3 / 31	0.07	0.004	0.008	TP12-7AA	NSV	NA	--	Yes-No sc.value
	Acenaphthene	X	5 / 31	0.064	0.005	0.044	TP12A-6	NSV	NA	--	Yes-MDC>sc.value
	Anthracene		10 / 31	0.055	0.005	0.063	TP12A-6	0.1	Old Dutch	0.63	No-MDC< sc.value
	Benzo(a)anthracene	X	21 / 31	0.057	0.005	0.2	TP12-8A	NSV	NA	--	Yes-No sc.value
	Benzo(a)pyrene	X	23 / 32	0.054	0.005	0.18	TP12A-7	0.1	Old Dutch	1.80	Yes-MDC>sc.value
	Benzo(b)fluoranthene	X	22 / 31	0.064	0.005	0.32	TP12A-7	NSV	NA	--	Yes-No sc.value
	Benzo(ghi)perylene	X	18 / 32	0.05	0.005	0.098	TP12A-7	NSV	NA	--	Yes-No sc.value
	Benzo(k)fluoranthene	X	18 / 31	0.063	0.005	0.17	TP12-8A	NSV	NA	--	Yes-No sc.value
	Chrysene	X	24 / 31	0.064	0.005	0.31	TP12-8A	NSV	NA	--	Yes-No sc.value
	Dibenz(a,h)anthracene	X	9 / 31	0.056	0.006	0.099	TP12A-7	NSV	NA	--	Yes-No sc.value
	Fluoranthene	X	22 / 32	0.081	0.005	0.32	TP12A-7	0.1	Old Dutch	3.20	Yes-MDC>sc.value
	Fluorene	X	2 / 31	0.067	0.012	0.035	TP12A-6	NSV	NA	--	Yes-MDC >sc.value
	Indeno(1,2,3-cd)pyrene	X	16 / 31	0.054	0.006	0.14	TP12A-7	NSV	NA	--	Yes-No sc.value
	Phenanthrene	X	22 / 31	0.059	0.005	0.28	TP12A-6	0.1	Old Dutch	2.80	Yes-MDC>sc.value
	Pyrene	X	22 / 32	0.077	0.008	0.31	TP12-8A	0.1	Old Dutch	3.10	Yes-MDC>sc.value
Semi-vols	Bis(2-Ethylhexyl)phthalate	X	5 / 32	0.079	0.005	0.016	TP12-6C	NSV	NA	--	Yes-No sc.value
	Butylbenzylphthalate	X	5 / 31	0.069	0.004	0.03	TP12-6C	NSV	NA	--	Yes-No sc.value
	Carbazole	X	7 / 31	0.063	0.006	0.04	TP12A-6	NSV	NA	--	Yes-No sc.value
	Dibenzofuran	X	1 / 31	0.072	0.004	0.004	TP12-23B	NSV	NA	--	Yes-No sc.value
	Di-n-butylphthalate		6 / 31	0.093	0.004	0.05	TP12A-7	200	Oak Ridge	0.00	No-MDC< sc.value
	Di-n-octylphthalate	X	3 / 31	0.07	0.007	0.015	MW12-33	NSV	NA	--	Yes-No sc.value
Pesticides	4,4'-DDD	X	4 / 32	0.003	0.002	0.014	TP12-5A	0.0025	Min of Housing (a)	5.58	Yes-MDC>sc.value
	4,4'-DDE	X	6 / 32	0.002	0.002	0.006	TP12A-6	0.0025	Min of Housing (a)	2.56	Yes-MDC>sc.value
	4,4'-DDT	X	7 / 32	0.002	0.002	0.004	TP12-8C	0.0025	Min of Housing (a)	1.76	Yes-MDC>sc.value
	Alpha-Chlordane		1 / 32	0.001	0.003	0.003	TP12A-7	0.1	Old Dutch (b)	0.03	No-MDC< sc.value
	Gamma-Chlordane		1 / 32	0.001	0.002	0.002	TP12A-7	0.1	Old Dutch (b)	0.02	No-MDC< sc.value
	Heptachlor		1 / 32	0.001	0.001	0.001	TP12-3A	0.1	Old Dutch	0.01	No-MDC< sc.value
Metals	Aluminum	X	32 / 32	10608	4140	18600	TP12A-7	50	Oak Ridge	372.00	Yes-MDC>sc.value
	Antimony		2 / 8	0.295	0.25	0.39	TP12A-7	3.5	New Dutch	0.11	No-MDC< sc.value

TABLE M.23

Ecological Mixed Surface and Subsurface Soil (0-4 ft) Screening *
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value[1]	Source[2]	Screening HQ [3]	COPC? / Comments [4]
	Arsenic		32 / 32	4.197	2.1	7.7	TP12A-7	10	Oak Ridge	0.77	No-MDC< sc.value
	Barium		32 / 32	81.22	38.9	135	TP12A-7	165	New Dutch	0.82	No-MDC< sc.value
	Beryllium		32 / 32	0.457	0.21	0.83	TP12A-7	1.1	New Dutch	0.75	No-MDC< sc.value
	Cadmium	X	6 / 32	0.266	0.4	3.6	TP12A-3	1.6	New Dutch	2.25	Yes-MDC>sc.value
	Chromium	X	32 / 32	16.93	6.7	29.7	TP12-23C	0.4	Oak Ridge	74.25	Yes-MDC>sc.value
	Cobalt		32 / 32	9.561	4.9	16.3	TP12-8B	20	Old Dutch	0.82	No-MDC< sc.value
	Copper	X	32 / 32	22.3	14	74.5	TP12-23C	40	New Dutch	1.86	Yes-MDC>sc.value
	Iron	X	32 / 32	21705	11300	51000	TP12-23C	200	Oak Ridge	255.00	Yes-MDC>sc.value
	Lead	X	32 / 32	20.25	6.7	90.9	TP12-23C	50	Old Dutch	1.82	Yes-MDC>sc.value
	Manganese	X	32 / 32	490.2	167	857	TP12A-7	100	Oak Ridge	8.57	Yes-MDC>sc.value
	Mercury	X	14 / 32	0.048	0.03	0.15	TP12-23C	0.1	Oak Ridge	1.50	Yes-MDC>sc.value
	Nickel	X	30 / 32	24.98	12.3	45.5	TP12-8B	30	Oak Ridge	1.52	Yes-MDC>sc.value
	Selenium	X	13 / 32	0.711	0.43	1.9	TP12A-3	0.81	New Dutch	2.35	Yes-MDC>sc.value
	Silver		3 / 32	0.128	0.27	0.39	TP12-3C	2	Oak Ridge	0.20	No-MDC< sc.value
	Thallium	X	13 / 32	0.754	0.41	1.7	MW12-14,TP12-7AA	1	Oak Ridge	1.70	Yes-MDC>sc.value
	Vanadium	X	32 / 32	18.85	11.1	36.4	TP12A-7	2	Oak Ridge	18.20	Yes-MDC>sc.value
	Zinc	X	32 / 32	296.3	41	6080	TP12-23C	50	Oak Ridge	121.60	Yes-MDC>sc.value
Misc	Cyanide	X	1 / 32	0.367	2.2	2.2	TP12-23C	5	Dutch	0.44	No-MDC< sc.value

Notes:

(1) Sources include Beyer 1998 (Old Dutch); Oak Ridge National Laboratory (Elfroymson et al. 1997); CCME 1997 (Canadian); Ministry of Housing, Spatial Planning and Environment 1994; and Crommentuijn et al. 1997 (New Dutch); Dutch Ministry of Housing, Spatial Planning and Environment, February 4, 2000 (Dutch).

(2) Screening HQ = maximum detected concentration / screening value.

(3) An analyte is considered a Chemical of Potential Concern (COPC) if the maximum detected concentration exceeds the screening value or if no screening value is available.

(4) Naturally occuring analytes calcium, sodium, potassium, magnesium, and phosphorous were not included in screening.

MDC = maximum detected concentration

NA = not appropriate or not analyzed.

(a) Value for total DDD/DDE/DDT.

(b) Value for chlordane.

TABLE M.23

Ecological Mixed Surface and Subsurface Soil (0-4 ft) Screening *
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value[1]	Source[2]	Screening HQ [3]	COPC? / Comments [4]
	Barium		32 / 32	81.22	38.9	135	TP12A-7	165	New Dutch	0.82	No-MDC< sc.value
	Beryllium		32 / 32	0.457	0.21	0.83	TP12A-7	1.1	New Dutch	0.75	No-MDC< sc.value
	Cadmium	X	6 / 32	0.266	0.4	3.6	TP12A-3	1.6	New Dutch	2.25	Yes-MDC>sc.value
	Chromium	X	32 / 32	16.93	6.7	29.7	TP12-23C	0.4	Oak Ridge	74.25	Yes-MDC>sc.value
	Cobalt		32 / 32	9.561	4.9	16.3	TP12-8B	20	Old Dutch	0.82	No-MDC< sc.value
	Copper	X	32 / 32	22.3	14	74.5	TP12-23C	40	New Dutch	1.86	Yes-MDC>sc.value
	Iron	X	32 / 32	21705	11300	51000	TP12-23C	200	Oak Ridge	255.00	Yes-MDC>sc.value
	Lead	X	32 / 32	20.25	6.7	90.9	TP12-23C	50	Old Dutch	1.82	Yes-MDC>sc.value
	Manganese	X	32 / 32	490.2	167	857	TP12A-7	100	Oak Ridge	8.57	Yes-MDC>sc.value
	Mercury	X	14 / 32	0.048	0.03	0.15	TP12-23C	0.1	Oak Ridge	1.50	Yes-MDC>sc.value
	Nickel	X	30 / 32	24.98	12.3	45.5	TP12-8B	30	Oak Ridge	1.52	Yes-MDC>sc.value
	Selenium	X	13 / 32	0.711	0.43	1.9	TP12A-3	0.81	New Dutch	2.35	Yes-MDC>sc.value
	Silver		3 / 32	0.128	0.27	0.39	TP12-3C	2	Oak Ridge	0.20	No-MDC< sc.value
	Thallium	X	13 / 32	0.754	0.41	1.7	MW12-14,TP12-7AA	1	Oak Ridge	1.70	Yes-MDC>sc.value
	Vanadium	X	32 / 32	18.85	11.1	36.4	TP12A-7	2	Oak Ridge	18.20	Yes-MDC>sc.value
	Zinc	X	32 / 32	296.3	41	6080	TP12-23C	50	Oak Ridge	121.60	Yes-MDC>sc.value
Misc	Cyanide	X	1 / 32	0.367	2.2	2.2	TP12-23C	NSV	NA		Yes-No sc.value

Notes:

(1) Sources include Beyer 1998 (Old Dutch); Oak Ridge National Laboratory (Elfroymson et al. 1997); CCME 1997 (Canadian); Ministry of Housing, Spatial Planning and Environment 1994; and Crommentuijn et al. 1997 (New Dutch).

(2) Screening HQ = maximum detected concentration / screening value.

(3) An analyte is considered a Chemical of Potential Concern (COPC) if the maximum detected concentration exceeds the screening value or if no screening value is available.

(4) Naturally occuring analytes calcium, sodium, potassium, magnesium, and phosphorous were not included in screening.

MDC = maximum detected concentration
NA = not appropriate or not analyzed.
(a) Value for total DDD/DDE/DDT.
(b) Value for chlordane.

Table M.24
Ecological Internal Radionuclide Dose Calculations for Mixed Soils (0 to 4 ft)
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Constituent	Maximum Detected Concentration (pCi/g)	C (pCi/g/d)	SP_v[1]		BAF[2]		Estimated Internal Gamma Dose[3] (rad/d)	Estimated Internal Beta Dose[4] (rad/d)	Estimated Internal Alpha Dose[5] (rad/d)	Total Internal Dose[6] (rad/d)
Actinium-228	1.20E+00	1.80E-02	3.50E-03	(a)	2.50E-05	(a)	1.07E-08	4.37E-07	0.00E+00	4.48E-07
Bismuth-214	5.80E+00	9.17E-02	3.50E-02	(a)	4.00E-04	(a)	0.00E+00	1.36E-06	1.17E-06	2.53E-06
Cesium-137	1.30E+00	3.59E-02	1.30E-01	(a)	2.00E-02	(a)	1.32E-08	3.44E-07	0.00E+00	3.57E-07
Cobalt-57	3.75E-01	9.97E-03	8.10E-02	(a)	2.00E-02	(a)	7.02E-10	9.70E-09	0.00E+00	1.04E-08
Cobalt-60	7.00E-01	1.86E-02	8.10E-02	(a)	2.00E-02	(a)	2.08E-08	9.24E-08	0.00E+00	1.13E-07
Lead-210	6.89E+01	1.04E+00	5.80E-03	(a)	3.00E-04	(a)	1.80E-07	2.03E-06	0.00E+00	2.21E-06
Lead-211	2.03E+01	3.08E-01	5.80E-03	(a)	3.00E-04	(a)	1.35E-08	7.15E-06	0.00E+00	7.17E-06
Lead-214	3.40E+00	5.15E-02	5.80E-03	(a)	3.00E-04	(a)	7.89E-09	7.63E-07	0.00E+00	7.71E-07
Plutonium-239/240	2.00E-01	2.98E-03	3.90E-04	(a)	5.00E-07	(a)	2.14E-10	1.68E-09	7.87E-07	7.88E-07
Promethium-147	4.20E+00	7.39E-02	1.00E-02	(a)	5.00E-03	(a)	0.00E+00	2.35E-07	0.00E+00	2.35E-07
Radium-223	1.70E+00	1.16E-01	7.50E-02	(a)	1.03E-01	(a)	7.89E-09	4.43E-07	3.41E-05	3.46E-05
Radium-226	5.80E+00	3.95E-01	7.50E-02	(a)	1.03E-01	(a)	9.92E-08	8.10E-08	9.67E-05	9.69E-05
Radium-228	3.50E+00	2.39E-01	7.50E-02	(a)	1.03E-01	(a)	0.00E+00	2.08E-07	0.00E+00	2.08E-07
Thallium-208	1.60E+00	5.60E-02	4.00E-03	(a)	4.00E-02	(a)	0.00E+00	1.70E-06	0.00E+00	1.70E-06
Thorium-230	1.50E+00	2.25E-02	6.60E-03	(a)	6.00E-06	(a)	1.62E-09	1.73E-08	5.39E-06	5.41E-06
Thorium-232	1.30E+00	1.95E-02	6.60E-03	(a)	6.00E-06	(a)	7.00E-10	1.20E-08	4.00E-06	4.01E-06
Tritium	1.30E+02	1.93E+00					0.00E+00	5.95E-07	0.00E+00	5.95E-07
Uranium-233	1.20E+00	1.84E-02	1.70E-02	(a)	2.00E-04	(a)	1.32E-09	1.23E-08	4.54E-06	4.55E-06
Uranium-235	4.00E-01	6.13E-03	1.70E-02	(a)	2.00E-04	(a)	4.90E-10	1.54E-08	1.38E-06	1.40E-06
Uranium-238	1.30E+00	1.99E-02	1.70E-02	(a)	2.00E-04	(a)	7.15E-10	1.02E-08	4.28E-06	4.29E-06
TOTAL DOSE							3.48E-07	1.51E-05	1.52E-04	1.68E-04

Note: Value of 0 indicates element does not emit radiation in question (alpha, beta, or gamma).

(a) NRC 1992.

[1] SP: soil-to-plant uptake factor, leafy vegetables.

[2] BAF: animal bioaccumulation factor.

[3] Estimated internal gamma dose (D) = ((CF) *(C)*(Eγnγ) * (Φγ))
where,
D = dose (rad/d) (includes daughters)
CF = conversion factor (1E-12Ci/pCi * 3.7E+10 dis/sec per Ci * 1/62.4E+06 rad per Mev/g * 3600 sec/hr * 24 hr/d)
C = daily ingested concentration per gram body weight (pCi/g) =
Where:
C = (MDC*SP*0.2*FI*PDF) + (MDC*BAF*FI*ADF) + (MDC*FI*SDF)
MDC = Maximum Detected Concentration (pCi/g)
SP_v = soil-to-plant uptake factor for vegetative matter
0.2 conversion factor for dry weight based SP values (NRC 1992 values only)
FI = Shrew food ingestion rate per gram body weight per day (g/g-d) = 0.62
PDF = Plant diet fraction = 16.7%
ADF = Animal/Insect diet fraction = 80.8%
SDF = Soil diet fraction (incidental soil ingestion portion of diet) = 2.4%
Eγ = photon energy emitted during transition from a higher to a lower energy state (MeV) (Table x)
nγ = proportion of disintegrations producing a γ-particle (Table x)

[4] Estimated internal beta dose (D)= ((CF) * (C) * (Eβnβ) * (Φβ))
where,
D = dose (rad/d) (includes daughters)
CF = conversion factor (1E-12Ci/pCi * 3.7E+10 dis/sec per Ci * 1/62.4E+06 rad per Mev/g * 3600 sec/hr * 24 hr/d)
C = daily ingested concentration per gram body weight (pCi/g)
Eβ = beta energy of the radionuclide (Mev) (Table 6.1-23)
nβ = proportion of disintegrations producing a β-particle (Table 6.1-23)
Φβ = absorbed fraction of energy Eβ (dimensionless) (Table 6.1-23)

[5] Estimated internal alpha dose (D) = ((CF) *(C)* (Eαnα) * (Φα))
where,
D = dose (rad/d) (includes daughters)
CF = conversion factor (1E-12Ci/pCi * 3.7E+10 dis/sec per Ci * 1/62.4E+06 rad per Mev/g * 3600 sec/hr * 24 hr/d)
C = daily ingested concentration per gram body weight (pCi/g)
Eα = alpha energy of the radionuclide (Mev) (Table 6.1-23)
nα = proportion of disintegrations producing an α-particle (Table 6.1-23)
Φα = absorbed fraction of energy Eα (dimensionless) (Table 6.1-23)

[6] Total internal dose = Estimated Internal Gamma Dose + Estimated Internal Beta Dose + Estimated Internal Alpha Dose

Table M.25
Ecological Radionuclide Screening Value Comparison for Mixed Soils (0 to 4 ft)
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Constituent	Maximum Detected Concentration (pCi/g)	Estimated External Dose - Shrew[1] (rad/d)	Estimated Total Internal Dose - Shrew[2] (rad/d)	Total (External + Internal) Dose - Shrew (rad/d)	Soil Screening Benchmark[3] (rad/d)	Dose Exceeds Screening Benchmark (Y/N)	COPC[5]?	Basis for Elimination
Actinium-228	1.20E+00	6.76E-05	4.48E-07	6.81E-05	1.00E-02	N	No	<Benchmark
Bismuth-214	5.80E+00	5.18E-04	2.53E-06	5.20E-04	1.00E-02	N	No	<Benchmark
Cesium-137	1.30E+00	1.05E-08	3.57E-07	3.67E-07	1.00E-02	N	No	<Benchmark
Cobalt-57	3.75E-01	2.03E-06	1.04E-08	2.04E-06	1.00E-02	N	No	<Benchmark
Cobalt-60	7.00E-01	1.04E-04	1.13E-07	1.04E-04	1.00E-02	N	No	<Benchmark
Lead-210	6.89E+01	1.84E-06	2.21E-06	4.06E-06	1.00E-02	N	No	<Benchmark
Lead-211	2.03E+01	6.06E-05	7.17E-06	6.77E-05	1.00E-02	N	No	<Benchmark
Lead-214	3.40E+00	4.65E-05	7.71E-07	4.73E-05	1.00E-02	N	No	<Benchmark
Plutonium-239/240	2.00E-01	6.20E-10	7.88E-07	7.89E-07	1.00E-02	N	No	<Benchmark
Promethium-147	4.20E+00	2.29E-09	2.35E-07	2.37E-07	1.00E-02	N	No	<Benchmark
Radium-223	1.70E+00	1.07E-05	3.46E-05	4.53E-05	1.00E-02	N	No	<Benchmark
Radium-226	5.80E+00	1.95E-06	9.69E-05	9.88E-05	1.00E-02	N	No	<Benchmark
Radium-228	3.50E+00	0.00E+00	2.08E-07	2.08E-07	1.00E-02	N	No	<Benchmark
Thallium-208	1.60E+00	3.17E-04	1.70E-06	3.18E-04	1.00E-02	N	No	<Benchmark
Thorium-230	1.50E+00	1.96E-08	5.41E-06	5.43E-06	1.00E-02	N	No	<Benchmark
Thorium-232	1.30E+00	7.39E-09	4.01E-06	4.02E-06	1.00E-02	N	No	<Benchmark
Tritium	1.30E+02	0.00E+00	5.95E-07	5.95E-07	1.00E-02	N	No	<Benchmark
Uranium-233/234	1.20E+00	5.26E-09	4.55E-06	4.56E-06	1.00E-02	N	No	<Benchmark
Uranium-235	4.00E-01	3.07E-06	1.40E-06	4.47E-06	1.00E-02	N	No	<Benchmark
Uranium-238	1.30E+00	1.47E-09	4.29E-06	4.29E-06	1.00E-02	N	No	<Benchmark
TOTAL DOSE		1.07E-03	1.68E-04	1.23E-03	1.00E-02	N	No	<Benchmark

[1] Estimated dose of gamma radiation (D)= (Cs * DCF * CFa * CFd * 4), includes daughters.

where:

D = dose (rad/d)
Cs = maximum radionuclide concentration in soil (pCi/g)
DCF = dose conversion factor (Sv/d per Bq/m3) (includes daughters)
CFa = conversion factor for activity (5.92E+04 Bq/m3 = 1 pCi/g)
CFd = conversion factor for dose (100 rem/Sv)

[2] Internal dose from Tables 6.1-24

[3] Source: IAEA 1992.

[4] 2X average background of surface soil interval (0 to 1 ft).

[5] COPC =constituent of potential concern if total dose is greater than soil screening benchmark (SSB) and also if total dose is greater than 2X average background

ND = not detected

TABLE M.26

Ecological Surface Soil (0-1 ft) Screening *
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value	Source[1]	Screening HQ [2]	COPC? / Comments [3]
Volatiles	1,2,4-Trichlorobenzene	X	1 / 14	4.71E-02	1.10E-02	1.10E-02	MW12-18	0.01	Min of Housing	1.1	Yes-MDC>sc.value
	Acetone	X	3 / 15	7.13E-03	6.00E-03	2.60E-02	SB12-10	NSV	NA	--	Yes-No sc.value
	Toluene		3 / 15	6.03E-03	3.00E-03	1.45E-02	MW12-18	0.05	Old Dutch	0.3	No-MDC<sc.value
PAHs	2-Methylnaphthalene	X	1 / 14	4.66E-02	5.50E-03	5.50E-03	SB12-5A	NSV	NA	--	Yes-No sc.value
	Benzo(a)anthracene	X	6 / 14	2.72E-02	6.85E-03	2.60E-02	MW12B-1	NSV	NA	--	Yes-No sc.value
	Benzo(a)pyrene		7 / 14	2.44E-02	3.90E-03	2.00E-02	MW12B-1	0.1	Old Dutch	0.2	No-MDC<sc.value
	Benzo(b)fluoranthene	X	8 / 14	2.41E-02	3.70E-03	3.40E-02	MW12B-1	NSV	NA	--	Yes-No sc.value
	Benzo(ghi)perylene	X	3 / 14	4.25E-02	6.60E-03	1.10E-02	MW12-18	NSV	NA	--	Yes-No sc.value
	Benzo(k)fluoranthene	X	6 / 14	2.67E-02	3.90E-03	2.00E-02	MW12B-1	NSV	NA	--	Yes-No sc.value
	Chrysene	X	9 / 14	2.19E-02	4.60E-03	3.20E-02	MW12B-1	NSV	NA	--	Yes-No sc.value
	Dibenz(a,h)anthracene	X	1 / 14	4.62E-02	4.80E-03	4.80E-03	SB12-10	NSV	NA	--	Yes-No sc.value
	Fluoranthene		9 / 14	2.50E-02	3.90E-03	6.40E-02	MW12B-1	0.1	Old Dutch	0.6	No-MDC<sc.value
	Indeno(1,2,3-cd)pyrene	X	4 / 14	3.96E-02	5.20E-03	7.30E-03	SB12-10	NSV	NA	--	Yes-No sc.value
	Naphthalene		1 / 14	4.66E-02	5.40E-03	5.40E-03	SB12-5A	0.1	Old Dutch	0.1	No-MDC<sc.value
	Phenanthrene		7 / 14	2.59E-02	6.70E-03	3.40E-02	MW12B-1	0.1	Old Dutch	0.3	No-MDC<sc.value
	Pyrene		9 / 14	2.44E-02	4.60E-03	5.10E-02	MW12B-1	0.1	Old Dutch	0.5	No-MDC<sc.value
Semi-vols	4-Methylphenol		1 / 14	4.62E-02	4.70E-03	4.70E-03	SB12-10	0.05	Min of Housing (a)	0.1	No-MDC<sc.value
	Bis(2-Ethylhexyl)phthalat	X	4 / 14	4.21E-02	5.80E-03	3.60E-02	MW12-16	NSV	NA	--	Yes-No sc.value
	Butylbenzylphthalate	X	1 / 14	4.64E-02	5.90E-03	5.90E-03	MW12-9	NSV	NA	--	Yes-No sc.value
	Di-n-butylphthalate		3 / 14	8.51E-02	4.10E-03	4.50E-03	SS12-145	200	Oak Ridge	0.0	No-MDC<sc.value
	Di-n-octylphthalate	X	4 / 14	4.13E-02	9.80E-03	1.50E-02	MW12-17,SB12-10	NSV	NA	--	Yes-No sc.value
	Diethyl phthalate		1 / 15	4.63E-02	1.10E-02	1.10E-02	SB12-5A	100	Oak Ridge	0.0	No-MDC<sc.value
PCBs	Aroclor-1242		1 / 15	1.91E-02	1.70E-02	1.70E-02	MW12B-1	0.02	Min of Housing (b)	0.9	No-MDC<sc.value
	Aroclor-1254	X	1 / 15	1.95E-02	2.30E-02	2.30E-02	SS12-144	0.02	Min of Housing (b)	1.2	Yes-MDC>sc.value
	Aroclor-1260	X	1 / 15	1.96E-02	2.50E-02	2.50E-02	SS12-144	0.02	Min of Housing (b)	1.3	Yes-MDC>sc.value
Pesticides	4,4'-DDE		1 / 15	1.93E-03	2.00E-03	2.00E-03	MW12B-1	0.0025	Min of Housing (c)	0.8	No-MDC<sc.value
	4,4'-DDT	X	1 / 15	2.07E-03	4.20E-03	4.20E-03	SS12-144	0.0025	Min of Housing (c)	1.7	Yes-MDC>sc.value
	Endrin aldehyde		1 / 15	1.94E-03	2.20E-03	2.20E-03	SS12-144	0.1	Old Dutch	0.0	No-MDC<sc.value

TABLE M.26

Ecological Surface Soil (0-1 ft) Screening *
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value	Source[1]	Screening HQ [2]	COPC? / Comments [3]
Metals[4]	Aluminum	X	15 / 15	9.38E+03	6.76E+03	1.36E+04	MW12-16	50	Oak Ridge	272	Yes-MDC>sc.value
	Antimony		1 / 2	6.58E-01	1.20E+00	1.20E+00	MW12-18	3.5	New Dutch	0.3	No-MDC<sc.value
	Arsenic		15 / 15	4.38E+00	3.10E+00	6.60E+00	MW12B-1	10	Oak Ridge	0.7	No-MDC<sc.value
	Barium		15 / 15	7.42E+01	5.38E+01	1.02E+02	MW12B-1	165	New Dutch	0.6	No-MDC<sc.value
	Beryllium		15 / 15	3.85E-01	2.10E-01	5.60E-01	MW12-17	1.1	New Dutch	0.5	No-MDC<sc.value
	Cadmium		1 / 15	1.19E-01	6.30E-01	6.30E-01	MW12B-1	1.6	New Dutch	0.4	No-MDC<sc.value
	Chromium	X	15 / 15	1.46E+01	1.07E+01	1.89E+01	SB12-10	0.4	Oak Ridge	47.3	Yes-MDC>sc.value
	Cobalt		15 / 15	8.45E+00	5.20E+00	1.06E+01	TP12-23A	20	Old Dutch	0.5	No-MDC<sc.value
	Copper	X	15 / 15	2.20E+01	1.59E+01	4.11E+01	SB12-10	40	New Dutch	1.0	Yes-MDC>sc.value
	Iron	X	15 / 15	2.04E+04	1.30E+04	4.11E+04	SB12-10	200	Oak Ridge	206	Yes-MDC>sc.value
	Lead		15 / 15	1.12E+01	5.10E+00	2.05E+01	MW12-16	50	Old Dutch	0.4	No-MDC<sc.value
	Manganese	X	15 / 15	4.41E+02	3.52E+02	6.29E+02	TP12-23A	100	Oak Ridge	6.3	Yes-MDC>sc.value
	Mercury	X	2 / 15	4.57E-02	4.00E-02	2.90E-01	SB12-10	0.1	Oak Ridge	2.9	Yes-MDC>sc.value
	Nickel	X	13 / 15	2.18E+01	1.64E+01	3.03E+01	SB12-5A	30	Oak Ridge	1.0	Yes-MDC>sc.value
	Selenium	X	4 / 15	5.06E-01	4.50E-01	1.30E+00	MW12B-1	0.81	New Dutch	1.6	Yes-MDC>sc.value
	Silver		3 / 15	1.53E-01	2.70E-01	3.90E-01	MW12-35	2	Oak Ridge	0.2	No-MDC<sc.value
	Thallium	X	5 / 15	8.05E-01	4.10E-01	2.20E+00	SB12-10	1	Oak Ridge	2.2	Yes-MDC>sc.value
	Vanadium	X	15 / 15	1.69E+01	1.25E+01	2.28E+01	MW12-16	2	Oak Ridge	11.4	Yes-MDC>sc.value
	Zinc	X	15 / 15	5.35E+01	3.61E+01	8.00E+01	SB12-10	50	Oak Ridge	1.6	Yes-MDC>sc.value

Notes:

(1) Sources include Beyer 1998 (Old Dutch); Oak Ridge National Laboratory (Elfroymson et al. 1997); CCME 1997 (Canadian); Ministry of Housing, Spatial Planning and Environment 1994; and Crommentuijn et al. 1997 (New Dutch).

(2) Screening HQ = maximum detected concentration / screening value.

(3) An analyte is considered a Chemical of Potential Concern (COPC) if the maximum detected concentration exceeds the screening value or if no screening value is available.

(4) Naturally occuring analytes calcium, sodium, potassium, magnesium, and phosphorous were not included in screening.

MDC = maximum detected concentration
NA = not appropriate or not analyzed.
(a) Value for phenol.
(b) Value for total arochlors.
(c) Value for total DDD/DDE/DDT.

TABLE M.27

Ecological Mixed Surface and Subsurface Soil (0-4 ft) Screening *
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value[1]	Source[2]	Screening HQ [3]	COPC? / Comments [4]
Volatiles	1,2,4-Trichlorobenzene	X	1 / 20	0.066	0.011	0.011	MW12-18	NSV	NA	--	Yes-No sc.value
	Acetone	X	5 / 22	0.007	0.006	0.026	SB12-10	NSV	NA	--	Yes-No sc.value
	Methylene chloride		1 / 22	0.005	0.001	0.001	TP12B-1	0.2	Min of Housing	0.01	No-MDC< sc.value
	Toluene		6 / 22	0.006	0.003	0.015	MW12-18	0.05	Old Dutch	0.29	No-MDC< sc.value
PAHs	2-Methylnaphthalene	X	1 / 20	0.066	0.006	0.006	SB12-5A	NSV	NA	--	Yes-No sc.value
	Benzo(a)anthracene	X	5 / 20	0.054	0.007	0.026	MW12B-1	NSV	NA	--	Yes-No sc.value
	Benzo(a)pyrene		6 / 20	0.052	0.004	0.02	MW12B-1	0.1	Old Dutch	0.20	No-MDC< sc.value
	Benzo(b)fluoranthene	X	7 / 20	0.051	0.004	0.034	MW12B-1	NSV	NA	--	Yes-No sc.value
	Benzo(ghi)perylene	X	3 / 20	0.063	0.007	0.011	MW12-18	NSV	NA	--	Yes-No sc.value
	Benzo(k)fluoranthene	X	6 / 20	0.052	0.004	0.02	MW12B-1	NSV	NA	--	Yes-No sc.value
	Chrysene	X	9 / 20	0.048	0.005	0.032	MW12B-1	NSV	NA	--	Yes-No sc.value
	Dibenz(a,h)anthracene	X	1 / 20	0.065	0.005	0.005	SB12-10	NSV	NA	--	Yes-No sc.value
	Fluoranthene		10 / 20	0.049	0.004	0.064	MW12B-1	0.1	Old Dutch	0.64	No-MDC< sc.value
	Indeno(1,2,3-cd)pyrene	X	4 / 20	0.061	0.005	0.007	SB12-10	NSV	NA	--	Yes-No sc.value
	Naphthalene		1 / 20	0.066	0.005	0.005	SB12-5A	0.1	Old Dutch	0.05	No-MDC< sc.value
	Phenanthrene		8 / 20	0.05	0.005	0.034	MW12B-1	0.1	Old Dutch	0.34	No-MDC< sc.value
	Pyrene		10 / 20	0.049	0.005	0.051	MW12B-1	0.1	Old Dutch	0.51	No-MDC< sc.value
Semi-vols	4-Methylphenol		1 / 21	0.064	0.005	0.005	SB12-10	0.05	Min of Housing (a)	0.1	No-MDC< sc.value
	Bis(2-Ethylhexyl)phthalate	X	5 / 20	0.062	0.006	0.036	MW12-16	NSV	NA	--	Yes-No sc.value
	Butylbenzylphthalate	X	1 / 20	0.066	0.006	0.006	MW12-9	NSV	NA	--	Yes-No sc.value
	Diethyl phthalate		1 / 22	0.063	0.011	0.011	SB12-5A	100	Oak Ridge	0.00	No-MDC< sc.value
	Di-n-butylphthalate		5 / 20	0.074	0.004	0.053	TP12B-3	200	Oak Ridge	0.00	No-MDC< sc.value
	Di-n-octylphthalate	X	4 / 20	0.062	0.01	0.015	MW12-17,SB12-10	NSV	NA	--	Yes-No sc.value
PCBs	Aroclor-1242		1 / 22	0.019	0.017	0.017	MW12B-1	0.02	Min of Housing (b)	0.85	No-MDC< sc.value
	Aroclor-1254	X	1 / 22	0.019	0.023	0.023	SS12-144	0.02	Min of Housing (b)	1.15	Yes-MDC>sc.value
	Aroclor-1260	X	1 / 22	0.019	0.025	0.025	SS12-144	0.02	Min of Housing (b)	1.25	Yes-MDC>sc.value
Pesticides	4,4'-DDE		1 / 22	0.002	0.002	0.002	MW12B-1	0.0025	Min of Housing (c)	0.80	No-MDC< sc.value
	4,4'-DDT	X	1 / 22	0.002	0.004	0.004	SS12-144	0.0025	Min of Housing (c)	1.68	Yes-MDC>sc.value
	Endrin aldehyde		1 / 22	0.002	0.002	0.002	SS12-144	0.1	Old Dutch	0.02	No-MDC< sc.value

TABLE M.27

Ecological Mixed Surface and Subsurface Soil (0-4 ft) Screening *
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Class	Analyte (mg/kg)	COPC	Freq of Detect	Mean	Min Detect	Max Detect	Max Detect Location	Screening Value[1]	Source[2]	Screening HQ [3]	COPC? / Comments [4]
Metals	Aluminum	X	22 / 22	9011	6485	14500	SB12-6	50	Oak Ridge	290.00	Yes-MDC>sc.value
	Antimony		1 / 7	0.347	1.2	1.2	MW12-18	3.5	New Dutch	0.34	No-MDC< sc.value
	Arsenic		22 / 22	4.284	3.05	6.6	MW12B-1	10	Oak Ridge	0.66	No-MDC< sc.value
	Barium		22 / 22	73.73	34.5	110	SB12-6	165	New Dutch	0.67	No-MDC< sc.value
	Beryllium		22 / 22	0.382	0.21	0.62	SB12-6	1.1	New Dutch	0.56	No-MDC< sc.value
	Cadmium		4 / 22	0.131	0.175	0.63	MW12B-1	1.6	New Dutch	0.39	No-MDC< sc.value
	Chromium	X	22 / 22	14.03	8.55	20.8	SB12-6	0.4	Oak Ridge	52.00	Yes-MDC>sc.value
	Cobalt		22 / 22	8.145	4.25	10.9	SB12-5A	20	Old Dutch	0.55	No-MDC< sc.value
	Copper	X	22 / 22	22.25	13.35	41.1	SB12-10	40	New Dutch	1.03	Yes-MDC>sc.value
	Iron	X	22 / 22	19095	11350	41100	SB12-10	200	Oak Ridge	205.50	Yes-MDC>sc.value
	Lead		22 / 22	10.22	4.55	20.5	MW12-16	50	Old Dutch	0.41	No-MDC< sc.value
	Manganese	X	22 / 22	413.7	319	596	SB12-10	100	Oak Ridge	5.96	Yes-MDC>sc.value
	Mercury	X	7 / 22	0.043	0.02	0.29	SB12-10	0.1	Oak Ridge	2.90	Yes-MDC>sc.value
	Nickel	X	20 / 22	22	8.95	31.9	SB12-6	30	Oak Ridge	1.06	Yes-MDC>sc.value
	Selenium	X	4 / 22	0.461	0.45	1.3	MW12B-1	0.81	New Dutch	1.60	Yes-MDC>sc.value
	Silver		4 / 22	0.147	0.24	0.39	MW12-35	2	Oak Ridge	0.20	No-MDC< sc.value
	Thallium	X	8 / 22	0.73	0.39	2.2	SB12-10	1	Oak Ridge	2.20	Yes-MDC>sc.value
	Vanadium	X	22 / 22	16.39	12.5	23.8	SB12-6	2	Oak Ridge	11.90	Yes-MDC>sc.value
	Zinc	X	22 / 22	50.51	27.45	80	SB12-10	50	Oak Ridge	1.60	Yes-MDC>sc.value

Notes:

(1) Sources include Beyer 1998 (Old Dutch); Oak Ridge National Laboratory (Elfroymson et al. 1997); CCME 1997 (Canadian); Ministry of Housing, Spatial Planning and Environment 1994; and Crommentuijn et al. 1997 (New Dutch).

(2) Screening HQ = maximum detected concentration / screening value.

(3) An analyte is considered a Chemical of Potential Concern (COPC) if the maximum detected concentration exceeds the screening value or if no screening value is available.

(4) Naturally occuring analytes calcium, sodium, potassium, magnesium, and phosphorous were not included in screening.

MDC = maximum detected concentration
NA = not appropriate or not analyzed.
(a) Value for phenol.
(b) Value for total arochlors.
(c) Value for total DDD/DDE/DDT.

Table M.28
Ecological Internal Radionuclide Dose Calculations for Mixed Soils (0 to 4 ft)
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Constituent	Maximum Detected Concentration (pCi/g)	C (pCi/g/d)	SP_v[1]		BAF[2]		Estimated Internal Gamma Dose[3] (rad/d)	Estimated Internal Beta Dose[4] (rad/d)	Estimated Internal Alpha Dose[5] (rad/d)	Total Internal Dose[6] (rad/d)
Actinium-228	7.40E-01	1.11E-02	3.50E-03	(a)	2.50E-05	(a)	6.61E-09	2.69E-07	0.00E+00	2.76E-07
Bismuth-214	3.50E+00	5.53E-02	3.50E-02	(a)	4.00E-04	(a)	0.00E+00	8.19E-07	7.06E-07	1.52E-06
Cesium-137	1.10E+00	3.04E-02	1.30E-01	(a)	2.00E-02	(a)	1.11E-08	2.91E-07	0.00E+00	3.02E-07
Cobalt-57	2.00E-01	5.32E-03	8.10E-02	(a)	2.00E-02	(a)	3.74E-10	5.17E-09	0.00E+00	5.55E-09
Cobalt-60	6.00E-01	1.59E-02	8.10E-02	(a)	2.00E-02	(a)	1.78E-08	7.92E-08	0.00E+00	9.70E-08
Lead-210	7.08E+01	1.07E+00	5.80E-03	(a)	3.00E-04	(a)	1.85E-07	2.09E-06	0.00E+00	2.27E-06
Lead-211	1.94E+01	2.94E-01	5.80E-03	(a)	3.00E-04	(a)	1.29E-08	6.84E-06	0.00E+00	6.85E-06
Lead-214	2.80E+00	4.24E-02	5.80E-03	(a)	3.00E-04	(a)	6.49E-09	6.28E-07	0.00E+00	6.35E-07
Plutonium-239/240	1.00E+00	1.49E-02	3.90E-04	(a)	5.00E-07	(a)	1.07E-09	8.39E-09	3.93E-06	3.94E-06
Promethium-147	5.10E+00	8.97E-02	1.00E-02	(a)	5.00E-03	(a)	0.00E+00	2.85E-07	0.00E+00	2.85E-07
Radium-223	1.00E+00	6.82E-02	7.50E-02	(a)	1.03E-01	(a)	4.64E-09	2.60E-07	2.01E-05	2.03E-05
Radium-226	3.50E+00	2.39E-01	7.50E-02	(a)	1.03E-01	(a)	5.99E-08	4.89E-08	5.83E-05	5.85E-05
Radium-228	3.30E+00	2.25E-01	7.50E-02	(a)	1.03E-01	(a)	4.77E-14	1.96E-07	0.00E+00	1.96E-07
Thallium-208	4.40E-01	1.54E-02	4.00E-03	(a)	4.00E-02	(a)	2.25E-08	4.66E-07	0.00E+00	4.89E-07
Thorium-227	1.00E-01	1.50E-03	6.60E-03	(a)	6.00E-06	(a)	8.16E-11	3.52E-09	4.58E-07	4.61E-07
Thorium-230	2.05E+00	3.08E-02	6.60E-03	(a)	6.00E-06	(a)	2.21E-09	2.37E-08	7.37E-06	7.39E-06
Thorium-232	1.30E+00	1.95E-02	6.60E-03	(a)	6.00E-06	(a)	7.00E-10	1.20E-08	4.00E-06	4.01E-06
Tritium	1.49E+02	2.21E+00					0.00E+00	6.79E-07	0.00E+00	6.79E-07
Uranium-233	1.00E+00	1.53E-02	1.70E-02	(a)	2.00E-04	(a)	7.20E-10	1.02E-08	3.78E-06	3.79E-06
Uranium-235	3.00E-01	4.60E-03	1.70E-02	(a)	2.00E-04	(a)	3.68E-10	1.15E-08	1.04E-06	1.05E-06
Uranium-238	1.00E+00	1.53E-02	1.70E-02	(a)	2.00E-04	(a)	5.50E-10	7.85E-09	3.29E-06	3.30E-06
TOTAL DOSE							3.26E-07	1.28E-05	1.03E-04	1.16E-04

Note: Value of 0 indicates element does not emit radiation in question (alpha, beta, or gamma).

(a) NRC 1992.

[1] SP: soil-to-plant uptake factor, leafy vegetables.

[2] BAF: animal bioaccumulation factor.

[3] Estimated internal gamma dose (D) = ((CF) *(C)*(Eγnγ) * (Φγ))

where,

D = dose (rad/d) (includes daughters)

CF = conversion factor (1E-12Ci/pCi * 3.7E+10 dis/sec per Ci * 1/62.4E+06 rad per Mev/g * 3600 sec/hr * 24 hr/d)

C = daily ingested concentration per gram body weight (pCi/g) =

Where:

C = (MDC*SP*0.2*FI*PDF) + (MDC*BAF*FI*ADF) + (MDC*FI*SDF)

MDC = Maximum Detected Concentration (pCi/g)

SP_v = soil-to-plant uptake factor for vegetative matter

0.2 conversion factor for dry weight based SP values (NRC 1992 values only)

FI = Shrew food ingestion rate per gram body weight per day (g/g-d) = 0.62

PDF = Plant diet fraction = 16.7%

ADF = Animal/Insect diet fraction = 80.8%

SDF = Soil diet fraction (incidental soil ingestion portion of diet) = 2.4%

Eγ = photon energy emitted during transition from a higher to a lower energy state (MeV) (Table x)

nγ = proportion of disintegrations producing a γ-particle (Table x)

[4] Estimated internal beta dose (D)= ((CF) * (C) * (Eβnβ) * (Φβ))

where,

D = dose (rad/d) (includes daughters)

CF = conversion factor (1E-12Ci/pCi * 3.7E+10 dis/sec per Ci * 1/62.4E+06 rad per Mev/g * 3600 sec/hr * 24 hr/d)

C = daily ingested concentration per gram body weight (pCi/g)

Eβ = beta energy of the radionuclide (Mev) (Table 6.1-23)

nβ = proportion of disintegrations producing a β-particle (Table 6.1-23)

Φβ = absorbed fraction of energy Eβ (dimensionless) (Table 6.1-23)

[5] Estimated internal alpha dose (D) = ((CF) *(C)* (Eαnα) * (Φα))

where,

D = dose (rad/d) (includes daughters)

CF = conversion factor (1E-12Ci/pCi * 3.7E+10 dis/sec per Ci * 1/62.4E+06 rad per Mev/g * 3600 sec/hr * 24 hr/d)

C = daily ingested concentration per gram body weight (pCi/g)

Eα = alpha energy of the radionuclide (Mev) (Table 6.1-23)

nα = proportion of disintegrations producing an α-particle (Table 6.1-23)

Φα = absorbed fraction of energy Eα (dimensionless (Table 6.1-23)

[6] Total internal dose = Estimated Internal Gamma Dose + Estimated Internal Beta Dose + Estimated Internal Alpha Dose

Table M.29
Ecological Radionuclide Screening Value Comparison for Mixed Soils (0 to 4 ft)
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Constituent	Maximum Detected Concentration (pCi/g)	Estimated External Dose - Shrew [1] (rad/d)	Estimated Total Internal Dose - Shrew [2] (rad/d)	Total (External + Internal) Dose - Shrew (rad/d)	Soil Screening Benchmark[3] (rad/d)	Dose Exceeds Screening Benchmark (Y/N)	COPC[5]?	Basis for Elimination
Actinium-228	7.40E-01	4.17E-05	2.76E-07	4.20E-05	1.00E-02	N	No	<Benchmark
Bismuth-214	3.50E+00	3.12E-04	1.52E-06	3.14E-04	1.00E-02	N	No	<Benchmark
Cesium-137	1.10E+00	8.86E-09	3.02E-07	3.11E-07	1.00E-02	N	No	<Benchmark
Cobalt-57	2.00E-01	1.08E-06	5.55E-09	1.09E-06	1.00E-02	N	No	<Benchmark
Cobalt-60	6.00E-01	8.89E-05	9.70E-08	8.90E-05	1.00E-02	N	No	<Benchmark
Lead-210	7.08E+01	1.89E-06	2.27E-06	4.17E-06	1.00E-02	N	No	<Benchmark
Lead-211	1.94E+01	5.79E-05	6.85E-06	6.47E-05	1.00E-02	N	No	<Benchmark
Lead-214	2.80E+00	3.83E-05	6.35E-07	3.90E-05	1.00E-02	N	No	<Benchmark
Plutonium-239/240	1.00E+00	3.10E-09	3.94E-06	3.95E-06	1.00E-02	N	No	<Benchmark
Promethium-147	5.10E+00	2.78E-09	2.85E-07	2.88E-07	1.00E-02	N	No	<Benchmark
Radium-223	1.00E+00	6.32E-06	2.03E-05	2.67E-05	1.00E-02	N	No	<Benchmark
Radium-226	3.50E+00	1.18E-06	5.85E-05	5.96E-05	1.00E-02	N	No	<Benchmark
Radium-228	3.30E+00	0.00E+00	1.96E-07	1.96E-07	1.00E-02	N	No	<Benchmark
Thallium-208	4.40E-01	8.71E-05	4.89E-07	8.76E-05	1.00E-02	N	No	<Benchmark
Thorium-227	1.00E-01	5.42E-07	4.61E-07	1.00E-06	1.00E-02	N	No	<Benchmark
Thorium-230	2.05E+00	2.68E-08	7.39E-06	7.42E-06	1.00E-02	N	No	<Benchmark
Thorium-232	1.30E+00	7.39E-09	4.01E-06	4.02E-06	1.00E-02	N	No	<Benchmark
Tritium	1.49E+02	0.00E+00	6.79E-07	6.79E-07	1.00E-02	N	No	<Benchmark
Uranium-233/234	1.00E+00	4.38E-09	3.79E-06	3.80E-06	1.00E-02	N	No	<Benchmark
Uranium-235	3.00E-01	2.30E-06	1.05E-06	3.35E-06	1.00E-02	N	No	<Benchmark
Uranium-238	1.00E+00	1.13E-09	3.30E-06	3.30E-06	1.00E-02	N	No	<Benchmark
TOTAL DOSE		5.98E-04	1.16E-04	7.14E-04	1.00E-02	N	No	<Benchmark

[1] Estimated dose of gamma radiation (D)= (Cs * DCF * CFa * CFd * 4), includes daughters.

where:

D = dose (rad/d)
Cs = maximum radionuclide concentration in soil (pCi/g)
DCF = dose conversion factor (Sv/d per Bq/m3) (includes daughters)
CFa = conversion factor for activity (5.92E+04 Bq/m3 = 1 pCi/g)
CFd = conversion factor for dose (100 rem/Sv)

[2] Internal dose from Tables 6.1-24

[3] Source: IAEA 1992.

[4] 2X average background of surface soil interval (0 to 1 ft).

[5] COPC =constituent of potential concern if total dose is greater than soil screening benchmark (SSB) and also if total dose is greater than 2X average background

ND = not detected

TABLE M.30

Ecological Sediment Screening
Seneca / SEAD-12
Seneca Army Depot Activity

Analyte (mg/kg)	COPC	Freq of Detect	Mean	Max Detect	Screening Value	Source[1]	Screening HQ[2]	COPC?[3] / Comments
Volatile Organics								
1,1,1-Trichloroethane		1 / 54	1.54E-02	3.00E-03	NSV	NA	--	No-FOD < 5%
Acetone	X	20 / 54	2.32E-02	9.50E-02	NSV	NA	--	Yes-No sc.value
Methyl chloride		2 / 54	1.51E-02	1.70E-02	NSV	NA	--	No-FOD < 5%
Methyl ethyl ketone		1 / 54	1.56E-02	1.10E-02	NSV	NA	--	No-FOD < 5%
Tetrachloroethene		2 / 54	1.53E-02	4.00E-03	NSV	NA	--	No-FOD < 5%
Toluene		5 / 54	1.54E-02	2.00E-02	2.646	NYSDEC	0.01	No-MDC < Sc. Value
Trichloroethene	X	4 / 54	1.52E-02	1.80E-02	NSV	NA	--	Yes-No sc.value
Semivolatile Organics								
2-Methylnaphthalene		12 / 54	1.06E-01	3.60E-02	1.836	NYSDEC	0.02	No-MDC < Sc. Value
4-Chlorophenyl phenyl ether		1 / 54	1.31E-01	6.00E-03	NSV	NA	--	No-FOD < 5%
4-Methylphenol	X	5 / 54	1.26E-01	1.50E-01	0.027	NYSDEC[e]	5.56	Yes-MDC > Sc. Value
Acenaphthene		22 / 54	9.13E-02	5.00E-01	7.56	NYSDEC	0.07	No-MDC < Sc. Value
Acenaphthylene		3 / 54	1.26E-01	1.50E-02	0.33	Reg 4	0.05	No-MDC < Sc. Value
Anthracene		26 / 54	9.82E-02	8.30E-01	5.778	NYSDEC	0.14	No-MDC < Sc. Value
Benzo(a)anthracene	X	39 / 54	2.06E-01	3.10E+00	0.648	NYSDEC	4.78	Yes-MDC > Sc. Value
Benzo(a)pyrene	X	41 / 54	2.14E-01	3.30E+00	0.33	Reg 4	10.00	Yes-MDC > Sc. Value
Benzo(b)fluoranthene	X	44 / 54	2.41E-01	3.20E+00	0.655	Reg 4	4.89	Yes-MDC > Sc. Value
Benzo(ghi)perylene	X	38 / 54	1.68E-01	2.10E+00	0.655	Reg 4	3.21	Yes-MDC > Sc. Value
Benzo(k)fluoranthene	X	29 / 54	1.90E-01	2.70E+00	0.655	Reg 4	4.12	Yes-MDC > Sc. Value
Bis(2-Ethylhexyl)phthalate		7 / 54	2.21E-01	5.00E+00	10.773	NYSDEC	0.46	No-MDC < Sc. Value
Butylbenzylphthalate		9 / 54	1.18E-01	4.20E-02	10.773	NYSDEC[f]	0.00	No-MDC < Sc. Value
Carbazole	X	28 / 54	1.12E-01	9.10E-01	NSV	NA	--	Yes-No sc.value
Chrysene	X	44 / 54	2.29E-01	3.20E+00	0.33	Reg 4	9.70	Yes-MDC > Sc. Value
Di-n-butylphthalate		15 / 54	1.03E-01	5.30E-02	10.773	NYSDEC[f]	0.00	No-MDC < Sc. Value
Di-n-octylphthalate		11 / 54	1.02E-01	1.40E-01	10.773	NYSDEC[f]	0.01	No-MDC < Sc. Value
Dibenz(a,h)anthracene	X	30 / 54	1.01E-01	8.60E-01	0.33	Reg 4	2.61	Yes-MDC > Sc. Value
Dibenzofuran	X	16 / 54	9.91E-02	6.40E-02	NSV	NA	--	Yes-No sc.value
Diethyl phthalate		7 / 54	1.20E-01	2.30E-02	10.773	NYSDEC[f]	0.00	No-MDC < Sc. Value
Fluoranthene		47 / 54	3.91E-01	6.20E+00	55.08	NYSDEC	0.11	No-MDC < Sc. Value
Fluorene		20 / 54	8.90E-02	3.40E-01	0.432	NYSDEC	0.79	No-MDC < Sc. Value
Hexachlorobenzene		1 / 54	1.31E-01	6.20E-03	300.78	NYSDEC	0.00	No-MDC < Sc. Value
Indeno(1,2,3-cd)pyrene	X	38 / 54	1.55E-01	2.00E+00	0.655	Reg 4	3.05	Yes-MDC > Sc. Value
Naphthalene		7 / 54	1.17E-01	4.90E-02	1.62	NYSDEC	0.03	No-MDC < Sc. Value
Phenanthrene		45 / 54	2.33E-01	3.10E+00	6.48	NYSDEC	0.48	No-MDC < Sc. Value
Pyrene		46 / 54	3.36E-01	5.40E+00	51.894	NYSDEC	0.10	No-MDC < Sc. Value
Pesticides/PCBs								
4,4'-DDD	X	6 / 54	8.82E-03	1.10E-01	0.054	NYSDEC	2.04	Yes-MDC > Sc. Value
4,4'-DDE	X	10 / 54	8.72E-03	7.60E-02	0.054	NYSDEC	1.41	Yes-MDC > Sc. Value
4,4'-DDT	X	7 / 54	9.41E-03	2.00E-01	0.054	NYSDEC	3.70	Yes-MDC > Sc. Value
Alpha-Chlordane		2 / 54	2.61E-03	3.20E-03	0.00162	NYSDEC[a]	1.98	No-FOD < 5%
Aroclor-1254	X	4 / 54	7.40E-02	1.20E+00	1.0422	NYSDEC[b]	1.15	Yes-MDC > Sc. Value

TABLE M.30

Ecological Sediment Screening
Seneca / SEAD-12
Seneca Army Depot Activity

Analyte (mg/kg)	COPC	Freq of Detect	Mean	Max Detect	Screening Value	Source[1]	Screening HQ[2]	COPC?[3] / Comments
Aroclor-1260		2 / 54	5.04E-02	3.70E-02	1.0422	NYSDEC[b]	0.04	No-MDC < Sc. Value
Endosulfan I		2 / 54	2.58E-03	3.60E-03	0.00162	NYSDEC[d]	2.22	No-FOD < 5%
Endrin		1 / 54	5.10E-03	5.60E-03	0.216	NYSDEC	0.03	No-MDC < Sc. Value
Endrin aldehyde		2 / 54	5.15E-03	7.60E-03	0.216	NYSDEC[e]	0.04	No-MDC < Sc. Value
Endrin ketone		2 / 54	5.43E-03	2.20E-02	0.216	NYSDEC[e]	0.10	No-MDC < Sc. Value
Heptachlor epoxide	X	3 / 54	2.85E-03	1.10E-02	0.0054	NYSDEC	2.04	Yes-MDC > Sc. Value
Metals[4]								
Aluminum	X	54 / 54	1.24E+04	3.87E+04	NSV	NA	--	Yes-No sc.value
Antimony	X	4 / 54	8.54E-01	2.80E+00	2	NYSDEC	1.40	Yes-MDC > Sc. Value
Arsenic	X	52 / 54	5.37E+00	1.91E+01	6	NYSDEC	3.18	Yes-MDC > Sc. Value
Barium	X	54 / 54	1.16E+02	8.85E+02	NSV	NA	--	Yes-No sc.value
Beryllium	X	47 / 54	4.34E-01	1.70E+00	NSV	NA	--	Yes-No sc.value
Cadmium	X	15 / 54	6.63E-01	9.00E+00	0.6	NYSDEC	15.00	Yes-MDC > Sc. Value
Chromium	X	54 / 54	2.29E+01	1.30E+02	26	NYSDEC	5.00	Yes-MDC > Sc. Value
Cobalt	X	43 / 54	1.15E+01	7.53E+01	NSV	NA	--	Yes-No sc.value
Copper	X	54 / 54	5.14E+01	1.16E+03	16	NYSDEC	72.50	Yes-MDC > Sc. Value
Cyanide		2 / 54	9.01E-01	2.60E+00	NSV	NA	--	No-FOD < 5%
Iron	X	54 / 54	2.57E+04	8.59E+04	NSV	NA	--	Yes-No sc.value
Lead	X	46 / 54	2.65E+01	2.15E+02	31	NYSDEC	6.94	Yes-MDC > Sc. Value
Manganese	X	49 / 54	1.08E+03	1.40E+04	460	NYSDEC	30.43	Yes-MDC > Sc. Value
Mercury	X	18 / 54	1.37E-01	1.70E+00	0.15	NYSDEC	11.33	Yes-MDC > Sc. Value
Nickel	X	54 / 54	3.44E+01	1.26E+02	16	NYSDEC	7.88	Yes-MDC > Sc. Value
Selenium	X	25 / 54	1.66E+00	6.20E+00	NSV	NA	--	Yes-No sc.value
Silver	X	5 / 54	4.37E-01	1.50E+00	1	NYSDEC	1.50	Yes-MDC > Sc. Value
Thallium	X	6 / 54	1.66E+00	4.00E+00	NSV	NA	--	Yes-No sc.value
Vanadium	X	54 / 54	2.38E+01	7.03E+01	NSV	NA	--	Yes-No sc.value
Zinc	X	49 / 54	2.39E+02	2.65E+03	120	NYSDEC	22.08	Yes-MDC > Sc. Value

Notes:

(1) Sources include, in order of preference:

- NYSDEC - Technical Guidance for Screening Contaminated Sediments, *Sediment Criteria for Non-polar Organic Contaminants* (Table 1), benthic aquatic life chronic and *Sediment Criteria for Metals* (Table 2), lowest effect level,
  Div. of Fish, Wildlife and Marine Resources, NYSDEC January 1999. NOTES: 5.4% organic carbon.
- Region 4 = *Region 4 Waste Management Division Sediment Screening Values for Hazardous Waste Sites* (Table 3), screening value, USEPA August 11, 1999

(2) Screening HQ = maximum detected concentration / screening criteria.

(3) An analyte is considered a Chemical of Potential Concern (COPC) if the maximum detected concentration exceeds the screening criteria or if no screening criteria is availa

(4) Naturally occuring analytes calcium, sodium, potassium, magnesium, and phosphorous were not included in screening.

FOD = frequency of detects
MDC = maximum detected concentration
NA = not available
a - value for chlordane
b - value for PCBs
c - value for hexachlorocyclohexanes
d - value for endosulfan
e - value for endrin
f - value for bis(2-ethylhexyl)phthalate
g - value for total unchlorinated phenols

Table M.31
Ecological Internal Radionuclide Dose Calculations for Sediment
SEAD-12
Seneca Army Depot, NY

Constituent	Maximum Detected Concentration (pCi/g)	C (pCi/g/d)	SP_v[1]		BAF[2]		Internal Gamma Dose[3] (rad/d)	Estimated Internal Beta Dose[4] (rad/d)	Internal Alpha Dose[5] (rad/d)	Internal Dose[6] (rad/d)
Actinium-228	1.10E+00	1.65E-02	3.50E-03	(a)	2.50E-05	(a)	9.01E-08	4.01E-07	0.00E+00	4.91E-07
Bismuth-214	2.40E+00	3.79E-02	3.50E-02	(a)	4.00E-04	(a)	0.00E+00	5.62E-07	4.84E-07	1.05E-06
Cesium-137	1.50E+00	4.14E-02	1.30E-01	(a)	2.00E-02	(a)	1.52E-07	3.96E-07	0.00E+00	5.48E-07
Lead-210	6.10E+00	9.24E-02	5.80E-03	(a)	3.00E-04	(a)	2.14E-08	1.80E-07	0.00E+00	2.01E-07
Lead-211	2.24E+01	3.39E-01	5.80E-03	(a)	3.00E-04	(a)	1.40E-07	7.89E-06	0.00E+00	8.03E-06
Lead-214	2.90E+00	4.39E-02	5.80E-03	(a)	3.00E-04	(a)	5.04E-08	6.50E-07	0.00E+00	7.01E-07
Plutonium-239/240	2.00E-01	2.98E-03	3.90E-04	(a)	5.00E-07	(a)	2.87E-10	1.68E-09	7.87E-07	7.88E-07
Promethium-147	8.30E+01	1.46E+00	1.00E-02	(a)	5.00E-03	(a)	0.00E+00	4.64E-06	0.00E+00	4.64E-06
Radium-223	1.10E+00	7.50E-02	7.50E-02	(a)	1.03E-01	(a)	5.62E-08	2.87E-07	2.21E-05	2.24E-05
Radium-226	2.40E+00	1.64E-01	7.50E-02	(a)	1.03E-01	(a)	5.51E-08	3.35E-08	4.00E-05	4.01E-05
Radium-228	3.20E+00	2.18E-01	7.50E-02	(a)	1.03E-01	(a)	4.63E-14	1.90E-07	0.00E+00	1.90E-07
Thallium-208	8.50E-01	2.98E-02	4.00E-03	(a)	4.00E-02	(a)	4.10E-07	9.01E-07	0.00E+00	1.31E-06
Thorium-227	3.00E-01	4.51E-03	6.60E-03	(a)	6.00E-06	(a)	2.45E-09	1.05E-08	1.37E-06	1.39E-06
Thorium-230	1.90E+00	2.85E-02	6.60E-03	(a)	6.00E-06	(a)	2.75E-09	2.19E-08	6.83E-06	6.85E-06
Thorium-232	1.70E+00	2.55E-02	6.60E-03	(a)	6.00E-06	(a)	1.23E-09	1.57E-08	5.23E-06	5.24E-06
Thorium-234	1.60E+00	2.40E-02	6.60E-03	(a)	6.00E-06	(a)	8.10E-07	7.39E-08	0.00E+00	8.84E-07
Tritium	6.00E-01	3.10E-01			1.00E+00	(a)	0.00E+00	9.51E-08	0.00E+00	9.51E-08
Uranium-234	1.50E+00	2.30E-02	1.70E-02	(a)	2.00E-04	(a)	2.22E-09	1.53E-08	5.68E-06	5.69E-06
Uranium-235	2.00E-01	3.07E-03	1.70E-02	(a)	2.00E-04	(a)	2.45E-09	7.70E-09	6.91E-07	7.01E-07
Uranium-238	1.00E+00	1.53E-02	1.70E-02	(a)	2.00E-04	(a)	7.38E-10	7.85E-09	3.29E-06	3.30E-06
TOTAL DOSE							1.71E-06	1.60E-05	8.64E-05	1.04E-04

Note: Value of 0 indicates element does not emit radiation in question (alpha, beta, or gamma).

(a) NRC 1992.

[1] SP: soil-to-plant uptake factor, leafy vegetables.

[2] BAF: animal bioaccumulation factor.

[3] Estimated internal gamma dose (D) = ((CF) *(C)*(Eγnγ) * (Φγ))

where,

D = dose (rad/d) (includes daughters)

CF = conversion factor (1E-12Ci/pCi * 3.7E+10 dis/sec per Ci * 1/62.4E+06 rad per Mev/g * 3600 sec/hr * 24 hr/d)

C = daily ingested concentration per gram body weight (pCi/g) =

Where:

C = (MDC*SP*0.2*FI*PDF) + (MDC*BAF*FI*ADF) + (MDC*FI*SDF)

MDC = Maximum Detected Concentration (pCi/g)

SP_v = soil-to-plant uptake factor for vegetative matter

0.2 conversion factor for dry weight based SP values (NRC 1992 values only)

FI = Shrew food ingestion rate per gram body weight per day (g/g-d) = 0.62

PDF = Plant diet fraction = 16.7%

ADF = Animal/Insect diet fraction = 80.8%

SDF = Soil diet fraction (incidental soil ingestion portion of diet) = 2.4%

Eγ = photon energy emitted during transition from a higher to a lower energy state (MeV) (Table 6.1-23)

nγ = proportion of disintegrations producing a γ-particle (Table 6.1-23)

[4] Estimated internal beta dose (D)= ((CF) * (C) * (Eβnβ) * (Φβ))

where,

D = dose (rad/d) (includes daughters)

CF = conversion factor (1E-12Ci/pCi * 3.7E+10 dis/sec per Ci * 1/62.4E+06 rad per Mev/g * 3600 sec/hr * 24 hr/d)

C = daily ingested concentration per gram body weight (pCi/g)

Eβ = beta energy of the radionuclide (Mev) (Table 6.1-23)

nβ = proportion of disintegrations producing a β-particle (Table 6.1-23)

Φβ = absorbed fraction of energy Eβ (dimensionless) (Table 6.1-23)

[5] Estimated internal alpha dose (D) = ((CF) *(C)* (Eαnα) * (Φα))

where,

D = dose (rad/d) (includes daughters)

CF = conversion factor (1E-12Ci/pCi * 3.7E+10 dis/sec per Ci * 1/62.4E+06 rad per Mev/g * 3600 sec/hr * 24 hr/d)

C = daily ingested concentration per gram body weight (pCi/g)

Eα = alpha energy of the radionuclide (Mev) (Table 6.1-23)

nα = proportion of disintegrations producing an α-particle (Table 6.1-23)

Φα = absorbed fraction of energy Eα (dimensionless (Table 6.1-23)

[6] Total internal dose = Estimated Internal Gamma Dose + Estimated Internal Beta Dose + Estimated Internal Alpha Dose

Table M.32
Ecological Radionuclide Screening Value Comparison for Sediment
SEAD-12
Seneca Army Depot, NY

Constituent	Maximum Detected Concentration (pCi/g)	Estimated External Dose - Crayfish[1] (rad/d)	Estimated Total Internal Dose - Crayfish[2] (rad/d)	Total (External + Internal) Dose - Crayfish (rad/d)	Sediment Screening Benchmark[3] (rad/d)	Dose Exceeds Screening Benchmark (Y/N)	COPC[5]?	Basis for Elimination
Actinium-228	1.10E+00	2.02E-05	NA	2.02E-05	1.00E-01	N	No	<Benchmark
Bismuth-214	2.40E+00	0.00E+00	NA	0.00E+00	1.00E-01	N	No	<Benchmark
Cesium-137	1.50E+00	1.70E-05	NA	1.70E-05	1.00E-01	N	No	<Benchmark
Lead-210	6.10E+00	1.69E-07	NA	1.69E-07	1.00E-01	N	No	<Benchmark
Lead-211	2.24E+01	2.12E-05	NA	2.12E-05	1.00E-01	N	No	<Benchmark
Lead-214	2.90E+00	1.37E-05	NA	1.37E-05	1.00E-01	N	No	<Benchmark
Plutonium-239/240	2.00E-01	2.30E-09	NA	2.30E-09	1.00E-01	N	No	<Benchmark
Promethium-147	8.30E+01	0.00E+00	NA	0.00E+00	1.00E-01	N	No	<Benchmark
Radium-223	1.10E+00	2.78E-06	NA	2.78E-06	1.00E-01	N	No	<Benchmark
Radium-226	2.40E+00	9.67E-08	NA	9.67E-08	1.00E-01	N	No	<Benchmark
Radium-228	3.20E+00	0.00E+00	NA	0.00E+00	1.00E-01	N	No	<Benchmark
Thallium-208	8.50E-01	5.43E-05	NA	5.43E-05	1.00E-01	N	No	<Benchmark
Thorium-227	3.00E-01	6.04E-07	NA	6.04E-07	1.00E-01	N	No	<Benchmark
Thorium-230	1.90E+00	2.19E-08	NA	2.19E-08	1.00E-01	N	No	<Benchmark
Thorium-232	1.70E+00	9.78E-09	NA	9.78E-09	1.00E-01	N	No	<Benchmark
Thorium-234	1.60E+00	6.44E-06	NA	6.44E-06	1.00E-01	N	No	<Benchmark
Tritium	6.00E-01	0.00E+00	NA	0.00E+00	1.00E-01	N	No	<Benchmark
Uranium-234	1.50E+00	1.73E-08	NA	1.73E-08	1.00E-01	N	No	<Benchmark
Uranium-235	2.00E-01	5.92E-07	NA	5.92E-07	1.00E-01	N	No	<Benchmark
Uranium-238	1.00E+00	5.75E-09	NA	5.75E-09	1.00E-01	N	No	<Benchmark
TOTAL DOSE		1.17E-04		1.17E-04	1.00E+00	N	No	<Benchmark

[1] Estimated external dose of gamma radiation (D)= ((2.88E-04) * $E_\gamma n_\gamma$ * (1-Φ_γ) * (Csed * CF_1 * CF_2) * R) * CF_3, includes daughters.

where:

D = dose (rad/d)
2.88E-04 = constant from Blaylock et al. (1993)
Eγ = photon energy emitted during transition from a higher to a lower energy state (MeV) (Table x)
nγ = proportion of disintegrations producing a γ-particle (Table x)
1−Φγ = absorbed fraction of energy Eγ (dimensionless) (Table x)
Csed = maximum radionuclide concentration in sed (pCi/g)
CF_1 = conversion factor (1 pCi/g = 37 Bq/kg)
CF_2 = conversion factor to convert sediment concentration from dry weight to wet weight (assume 0.75)
R = fraction of time organism spends at the sediment-water interface (assume 1.0)
CF_3 = conversion factor (1 υGy/h = 2.4E-03 rad/d)

[2] Internal dose not applicable.
[3] Source: IAEA 1992.
[4] 2X average background of sediment.
[5] COPC =constituent of potential concern if total dose is greater than sediment screening benchmark (SSB) and also if total dose is greater than 2X average background
ND = not detected

TABLE M.33

Ecological Surface Water Screening
Seneca / SEAD-12
Seneca Army Depot Activity

Analyte (mg/L)	COPC	Freq of Detect	Mean	Max Detect	Screening Value	Source[1]	Screening HQ[2]	COPC?[3] / Comments
Volatile Organics								
Acetone		3 / 52	2.93E-03	1.00E-02	5.00E-02	NY AWQS/g	0.2	No-MDC < Sc. Value
Toluene		1 / 52	7.73E-04	4.00E-04	1.00E-01	NY AWQS/g	0.0	No-MDC < Sc. Value
Trichloroethene		1 / 52	7.86E-04	1.00E-03	NSV	NA	--	No-FOD < 5%
Semivolatile Organics								
Benzo(a)anthracene		1 / 52	7.49E-04	5.00E-04	3.00E-05	NY AWQS/g	16.7	No-FOD < 5%
Benzo(a)pyrene		1 / 52	7.50E-04	6.00E-04	NSV	NA	--	No-FOD < 5%
Benzo(k)fluoranthene		1 / 52	7.54E-04	1.00E-03	NSV	NA	--	No-FOD < 5%
Bis(2-Ethylhexyl)phthalate	X	4 / 52	1.02E-03	1.20E-02	6.00E-04	NY AWQS/s	20.0	Yes-MDC > Sc. Value
Butylbenzylphthalate		10 / 52	7.25E-04	2.00E-04	2.20E-02	Reg 4	0.0	No-MDC < Sc. Value
Chrysene		1 / 52	7.49E-04	5.00E-04	NSV	NA	--	No-FOD < 5%
Di-n-butylphthalate		6 / 52	7.25E-04	2.00E-03	5.00E-02	NY AWQS/g	0.0	No-MDC < Sc. Value
Diethyl phthalate		11 / 52	7.08E-04	4.60E-04	5.00E-02	NY AWQS/g	0.0	No-MDC < Sc. Value
Pentachlorophenol		1 / 52	1.90E-03	2.00E-03	1.07E+01	NY AWQS/s	0.0	No-MDC < Sc. Value
Pyrene		1 / 52	7.54E-04	1.00E-03	4.60E-03	NY AWQS/g	0.2	No-MDC < Sc. Value
Pesticides/PCBs								
4,4'-DDE		1 / 52	8.10E-06	5.60E-06	1.10E-05	NY AWQS/s[b]	0.5	No-MDC < Sc. Value
4,4'-DDT		1 / 52	9.26E-06	6.20E-05	1.10E-05	NY AWQS/s[b]	5.6	No-FOD < 5%
Aldrin		1 / 52	4.12E-06	4.10E-06	NSV	NA	--	No-FOD < 5%
Alpha-BHC		10 / 52	7.33E-06	9.00E-05	5.01E+00	Reg 4	0.0	No-MDC < Sc. Value
Alpha-Chlordane		1 / 52	4.66E-06	3.60E-06	4.30E-06	Reg 4[a]	0.8	No-MDC < Sc. Value
Aroclor-1242		2 / 52	9.45E-05	4.40E-04	1.20E-04	NY AWQS/s	3.7	No-FOD < 5%
Beta-BHC		5 / 52	4.58E-06	1.70E-05	5.00E+01	Reg 4	0.0	No-MDC < Sc. Value
Delta-BHC	X	3 / 52	4.08E-06	4.60E-06	NSV	NA	--	Yes-No sc.value
Endrin aldehyde		2 / 52	8.28E-06	1.20E-05	2.30E-06	Reg 4[c]	5.2	No-FOD < 5%
Endrin ketone		1 / 52	8.30E-06	1.50E-05	2.30E-06	Reg 4[c]	6.5	No-FOD < 5%
Gamma-BHC/Lindane		5 / 52	6.10E-06	9.20E-05	9.50E-04	NY AWQS/s	0.1	No-MDC < Sc. Value
Heptachlor	X	3 / 52	4.22E-06	6.30E-06	3.80E-06	Reg 4	1.7	Yes-MDC > Sc. Value
Heptachlor epoxide		2 / 52	4.10E-06	3.30E-06	3.80E-06	Reg 4	0.9	No-MDC < Sc. Value
Hexachlorobenzene	X	3 / 48	5.33E-06	2.00E-05	NSV	NA	--	Yes-No sc.value
Metals[4]								
Aluminum	X	43 / 52	2.81E-01	3.43E+00	1.00E-01	NY AWQS/s	34.3	Yes-MDC > Sc. Value
Arsenic		5 / 52	1.48E-03	3.80E-03	1.50E-01	NY AWQS/s	0.0	No-MDC < Sc. Value
Barium	X	52 / 52	4.06E-02	1.15E-01	NSV	NA	--	Yes-No sc.value
Beryllium		4 / 52	5.78E-05	1.80E-04	1.10E+00	NY AWQS/s[5]	0.0	No-MDC < Sc. Value
Cadmium		7 / 52	2.73E-04	2.10E-03	3.89E-03	NY AWQS/s[5]	0.5	No-MDC < Sc. Value
Chromium		11 / 52	6.93E-04	3.30E-03	1.41E-01	NY AWQS/s[5]	0.0	No-MDC < Sc. Value
Cobalt	X	7 / 52	8.60E-04	6.00E-03	5.00E-03	NY AWQS/s	1.2	Yes-MDC > Sc. Value
Copper	X	29 / 52	2.92E-03	2.76E-02	1.76E-02	NY AWQS/s[5]	1.6	Yes-MDC > Sc. Value
Iron	X	48 / 52	4.70E-01	6.83E+00	3.00E-01	NY AWQS/s	22.8	Yes-MDC > Sc. Value

TABLE M.33

Ecological Surface Water Screening
Seneca / SEAD-12
Seneca Army Depot Activity

Analyte (mg/L)	COPC	Freq of Detect	Mean	Max Detect	Screening Value	Source[1]	Screening HQ[2]	COPC?[3] / Comments
Lead	X	4 / 52	1.83E-03	3.54E-02	8.83E-03	NY AWQS/s[5]	4.0	Yes-MDC > Sc. Value
Manganese	X	50 / 52	1.02E-01	1.32E+00	NSV	NA	–	Yes-No sc.value
Mercury	X	5 / 52	2.27E-04	1.10E-04	2.60E-06	NY AWQS/s	42.3	Yes-MDC > Sc. Value
Nickel		27 / 52	1.67E-03	1.97E-02	1.01E-01	NY AWQS/s[5]	0.2	No-MDC < Sc. Value
Silver	X	6 / 52	6.80E-04	1.60E-03	1.00E-04	NY AWQS/s	16.0	Yes-MDC > Sc. Value
Thallium		2 / 52	2.99E-03	6.50E-03	8.00E-03	NY AWQS/s	0.8	No-MDC < Sc. Value
Vanadium		7 / 52	9.20E-04	7.20E-03	1.40E-02	NY AWQS/s	0.5	No-MDC < Sc. Value
Zinc		52 / 52	2.19E-02	1.05E-01	1.62E-01	NY AWQS/s[5]	0.7	No-MDC < Sc. Value

Notes:

(1) Surface water screening values are, in order of preference:

- NY AWQS = *Ambient Water Quality Standards and Guidance Values*, New York, Division of Water Technical and Operational Guidance Series (1.1.1), June 1998.
  Where multiple values were available, the lesser of freshwater Fish (propagation or survival) vs Wildlife types was used.
  s = standard, g = guidance value NOTES: pH = 7.47
- Region 4 = *Region 4 Waste Management Division Freshwater Surface Water Screening Values for Hazardous Waste Sites*, Table 1, chronic, USEPA August 11, 1999

(2) Screening HQ = maximum detected concentration / screening criteria.

(3) An analyte is considered a Chemical of Potential Concern (COPC) if the maximum detected concentration exceeds the screening criteria or if no screening criteria is available.

(4) Naturally occuring analytes calcium, sodium, potassium, magnesium, and phosphorous were not included in screening.

(5) Hardness dependent. Site specific mean value of 220 mg/L as CaCO3.

(a) Value for chlordane

(b) Value for sum of DDD, DDE, and DDT.

(c) Value for endrin.

MDC = maximum detected concentration

NA = not available

NSV = no screening value

Table M.34
Ecological Internal Radionuclide Dose Calculations for Surface Water
SEAD-12
Seneca Army Depot, NY

Constituent	Maximum Detected Concentration (pCi/l)	BAF[2]		Internal Gamma Dose[3] (rad/d)	Estimated Internal Beta Dose[4] (rad/d)	Internal Alpha Dose[5] (rad/d)	Internal Dose[6] (rad/d)
Bismuth-214	3.46E+01	4.00E-04	(a)	0.00E+00	4.09E-08	3.53E-08	7.62E-08
Cobalt-60	9.20E+00	2.00E-02	(a)	5.77E-09	3.20E-09	0.00E+00	8.97E-09
Lead-211	3.52E+02	3.00E-04	(a)	2.32E-08	1.31E-06	0.00E+00	1.33E-06
Lead-214	2.88E+01	3.00E-04	(a)	2.97E-09	3.83E-08	0.00E+00	4.13E-08
Promethium-147	7.06E+01	5.00E-03	(a)	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Radium-223	4.00E-01	1.03E-01	(a)	3.29E-11	1.68E-10	1.29E-08	1.31E-08
Radium-226	5.00E-01	1.03E-01	(a)	1.58E-10	9.62E-11	1.15E-07	1.15E-07
Radon-222	4.01E+02	0.00E+00	(a)	8.16E-09	2.24E-10	1.15E-04	1.15E-04
Thorium-227	1.40E+00	6.00E-06	(a)	7.59E-11	3.27E-10	4.26E-08	4.30E-08
Thorium-230	2.20E+00	6.00E-06	(a)	1.99E-10	1.59E-09	4.94E-07	4.96E-07
Thorium-232	4.00E-01	6.00E-06	(a)	1.81E-11	2.31E-10	7.69E-08	7.71E-08
Tritium	4.32E+02			0.00E+00	0.00E+00	0.00E+00	0.00E+00
Uranium-234	1.00E+00	2.00E-04	(a)	9.04E-11	6.25E-10	2.32E-07	2.32E-07
Uranium-235	2.00E-01	2.00E-04	(a)	1.60E-11	5.01E-11	4.50E-09	4.56E-09
Uranium-238	7.00E-01	2.00E-04	(a)	3.16E-11	3.37E-10	1.41E-07	1.41E-07
TOTAL DOSE				4.07E-08	1.39E-06	1.16E-04	1.17E-04

Note: Value of 0 indicates element does not emit radiation in question (alph
(a) NRC 1992.

[1] SP: soil-to-plant uptake factor, leafy vegetables.

[2] BAF: animal bioaccumulation factor.

[3] Estimated internal gamma dose (D)= ((5.76E-04) * Eγnγ * Φγ *(Cw * BC
where,
D = dose (rad/d) (includes daughters)
5.76E-04 = constant from Blaylock et al. (1993)
Eγ = photon energy emitted during transition from a higher to a lower energy
nγ = proportion of disintegrations producing a γ-particle (Table x)
Φγ = absorbed fraction of energy Eγ (dimensionless) (Table x3)
Cw = maximum radionuclide concentration in surface water (pCi/l)
BCF = bioconcentration factor (pCi/kg in organism per pCi/l in water)(NRC
CF_1 = conversion factor (1 pCi/l = .037 Bq/lg)
CF_2 = conversion factor (1 uGy/h = 2.4E-03 rad/d)

[4] Estimated internal beta dose (D)= ((5.76E-04) * Eβnβ * Φβ *(Cw * BCF *
where,
D = dose (rad/d) (includes daughters)
5.76E-04 = constant from blaylock et al. (1993)
Eβ = beta energy of the radionuclide (Mev) (Table x)
nβ = proportion of disintegrations producing a β-particle (Table x)
Φβ = absorbed fraction of energy Eβ (dimensionless) (Table x)
Cw = maximum radionuclide concentration in surface water (pCi/l)
BCF = bioconcentration factor (pCi/kg in organism per pCi/l in water)(NRC
CF_1 = conversion factor (1 pCi/l = .037 Bq/lg)
CF_2 = conversion factor (1 uGy/h = 2.4E-03 rad/d)

[5] Estimated internal alpha dose (D) = ((5.76E-04) * (Eαnα) * (Cw * BCF *C
where,
D = dose (rad/d) (includes daughters)
5.76E-04 = constant from Blaylock et al. (1993)
Eα = alpha energy of the radionuclide (Mev) (Table x)
nα = proportion of disintegrations producing an α-particle (Table x)
Cw = maximum radionuclide concentration in surface water (pCi/l)
BCF = bioconcentration factor (pCi/kg in organism per pCi/l in water)(NRC
CF_1 = conversion factor (1 pCi/l = .037 Bq/lg)
CF_2 = conversion factor (1 uGy/h = 2.4E-03 rad/d)

[6] Total internal dose = Estimated Internal Gamma Dose + Estimated Internal Beta Dose + Estimated Internal Alpha Dose

Table M.35
Ecological Radionuclide Screening Value Comparison for Surface Water
SEAD-12
Seneca Army Depot, NY

Constituent	Maximum Detected Concentration (pCi/l)	Estimated External Dose - Large fish [1] (rad/d)	Estimated Total Internal Dose - Large fish [2] (rad/d)	Total (External + Internal) Dose - Large fish (rad/d)	Surface Water Screening Benchmark[3] (rad/d)	Dose Exceeds Screening Benchmark (Y/N)	COPC[5]?	Basis for Elimination
Bismuth-214	3.46E+01	0.00E+00	7.62E-08	7.62E-08	1.00E-01	N	No	<Benchmark
Cobalt-60	9.20E+00	1.10E-06	8.97E-09	1.10E-06	1.00E-01	N	No	<Benchmark
Lead-211	3.52E+02	7.61E-07	1.33E-06	2.09E-06	1.00E-01	N	No	<Benchmark
Lead-214	2.88E+01	3.34E-07	4.13E-08	3.75E-07	1.00E-01	N	No	<Benchmark
Promethium-147	7.06E+01	0.00E+00	0.00E+00	0.00E+00	1.00E-01	N	No	<Benchmark
Radium-223	4.00E-01	2.42E-09	1.31E-08	1.56E-08	1.00E-01	N	No	<Benchmark
Radium-226	5.00E-01	1.07E-11	1.15E-07	1.15E-07	1.00E-01	N	No	<Benchmark
Radon-222	4.01E+02	0.00E+00	1.15E-04	1.15E-04	1.00E-01	N	No	<Benchmark
Thorium-227	1.40E+00	6.83E-09	4.30E-08	4.98E-08	1.00E-01	N	No	<Benchmark
Thorium-230	2.20E+00	1.35E-11	4.96E-07	4.96E-07	1.00E-01	N	No	<Benchmark
Thorium-232	4.00E-01	1.23E-12	7.71E-08	7.71E-08	1.00E-01	N	No	<Benchmark
Tritium	4.32E+02	0.00E+00	0.00E+00	0.00E+00	1.00E-01	N	No	<Benchmark
Uranium-234	1.00E+00	6.14E-12	2.32E-07	2.32E-07	1.00E-01	N	No	<Benchmark
Uranium-235	2.00E-01	1.44E-09	4.56E-09	6.00E-09	1.00E-01	N	No	<Benchmark
Uranium-238	7.00E-01	2.15E-12	1.41E-07	1.41E-07	1.00E-01	N	No	<Benchmark
TOTAL DOSE		2.20E-06	1.17E-04	1.19E-04	1.00E-01	N	No	<Benchmark

[1] Estimated external dose of gamma radiation (D)= $((5.76E\text{-}04) * E_\gamma n_\gamma * (1-\Phi_\gamma) * (Cw * CF_1)) * CF_2$, includes daughters.

where:

D = dose (rad/d)
5.76E-04 = constant from Blaylock et al. (1993)
$E\gamma$ = photon energy emitted during transition from a higher to a lower energy state (MeV) (Table x)
$n\gamma$ = proportion of disintegrations producing a γ-particle (Table x)
$1-\Phi\gamma$ = absorbed fraction of energy $E\gamma$ (dimensionless) (Table x)
Cw = maximum radionuclide concentration in surface water (pCi/l)
CF_1 = conversion factor (1 pCi/l = .037 Bq/l)
CF_2 = conversion factor (1 υGy/h = 2.4E-03 rad/d)

[2] Internal dose from Table x.
[3] Source: IAEA 1992.
[4] 2X average background of Surface Water.
[5] COPC =constituent of potential concern if total dose is greater than Surface Water screening benchmark (SSB) and also if total dose is greater than 2X average background
ND = not detected

TABLE M.36
Ecological Chemicals of Potential Concern (COPCs)
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Class	Analyte	Surface Soil (0-1 ft)			Mixed Surface and Subsurface Soil (0-4 ft)		
		Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location
Volatiles	Acetone	9.07E-03	5.20E-02	MW12-8	8.85E-03	5.20E-02	MW12-8
	Methyl butyl ketone	5.57E-03	1.00E-03	SB12-4	6.00E-03	1.00E-03	SB12-4
	Total Xylenes	–	–	–	2.82E-02	5.20E-01	TP12-2B
	Trichloroethene	–	–	–	6.85E-03	2.60E-02	TP12A-1
PAHs	2-Methylnaphthalene	–	–	–	4.62E-02	5.60E-02	TP12-2B
	Acenaphthylene	–	–	–	4.59E-02	3.30E-02	TP12A-1
	Benzo(a)anthracene	2.98E-02	2.70E-02	SS12-183	3.82E-02	1.80E-01	TP12A-1
	Benzo(a)pyrene	–	–	–	3.94E-02	2.00E-01	TP12A-1
	Benzo(b)fluoranthene	2.97E-02	3.60E-02	SS12-183	3.89E-02	1.90E-01	TP12A-1
	Benzo(ghi)perylene	2.97E-02	2.30E-02	SB12-1	4.34E-02	1.20E-01	TP12A-1
	Benzo(k)fluoranthene	3.20E-02	2.60E-02	SS12-183	3.93E-02	1.60E-01	TP12A-1
	Chrysene	2.76E-02	5.10E-02	SS12-183	3.97E-02	2.40E-01	TP12A-1
	Dibenz(a,h)anthracene	3.55E-02	1.60E-02	SB12-1	4.44E-02	5.70E-02	TP12A-1
	Fluoranthene	–	–	–	4.24E-02	4.20E-01	TP12A-1
	Fluorene	3.71E-02	5.40E-03	SB12-1	4.53E-02	5.20E-02	TP12A-1
	Indeno(1,2,3-cd)pyrene	3.15E-02	1.80E-02	SB12-1	4.46E-02	1.20E-01	TP12A-1
	Naphthalene	–	–	–	7.72E-02	6.00E-01	TP12-2B
	Phenanthrene	–	–	–	4.46E-02	3.40E-01	TP12A-1
	Pyrene	–	–	–	4.36E-02	3.80E-01	TP12A-1
Semi-vols	4-Methylphenol	–	–	–	5.01E-02	1.40E-01	TP12A-1
	Bis(2-Ethylhexyl)phthalate	4.68E-02	2.10E-01	MW12-12	1.27E-01	9.30E-01	TP12-2B
	Butylbenzylphthalate	3.72E-02	6.70E-03	SB12-1	5.13E-02	6.70E-03	SB12-1
	Carbazole	3.78E-02	1.60E-02	SB12-1	5.17E-02	1.60E-02	SB12-1
	Di-n-octylphthalate	3.52E-02	7.80E-03	SB12-1	4.70E-02	7.90E-03	SB12-3
	Dibenzofuran	3.71E-02	5.60E-03	SB12-1	5.13E-02	5.60E-03	SB12-1
	Phenol	–	–	–	5.09E-02	3.00E-01	TP12A-1
PCBs	Aroclor-1254	9.14E-02	6.70E-01	SS12-17	1.99E-01	3.00E+00	SB12-3
Pesticides	4,4'-DDE	3.04E-03	1.50E-02	SS12-17	4.40E-03	4.20E-02	SB12-3
	4,4'-DDT	4.64E-03	4.20E-02	SS12-17	3.89E-03	4.20E-02	SS12-17
	Alpha-BHC	–	–	–	1.19E-03	2.80E-03	TP12-2C
	Dieldrin	3.04E-03	1.40E-02	SS12-17	4.30E-03	4.00E-02	SB12-3
	Endrin	2.17E-03	4.20E-03	SS12-17	2.69E-03	1.60E-02	TP12A-2

TABLE M.36
Ecological Chemicals of Potential Concern (COPCs)
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

		Surface Soil (0-1 ft)			Mixed Surface and Subsurface Soil (0-4 ft)		
Class	Analyte	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location
Metals	Aluminum	1.11E+04	1.58E+04	SB12-2B	1.09E+04	1.58E+04	TP12A-2
	Cadmium	3.29E-01	3.20E+00	SB12-2	4.93E+00	9.43E+01	TP12A-1
	Chromium	1.72E+01	2.33E+01	SB12-2B	2.16E+01	8.33E+01	TP12A-1
	Copper	–	–	–	2.93E+01	2.15E+02	TP12A-1
	Iron	2.09E+04	2.71E+04	MW12-12	2.10E+04	2.71E+04	SB12-3
	Lead	–	–	–	2.94E+01	3.66E+02	TP12A-1
	Manganese	6.36E+02	1.42E+03	SB12-2B	5.83E+02	1.42E+03	SB12-2B
	Mercury	4.13E-02	1.10E-01	MW12-10	3.85E-02	1.10E-01	MW12-10
	Nickel	2.43E+01	3.99E+01	MW12-12	2.54E+01	4.25E+01	TP12A-2
	Selenium	5.63E-01	2.30E+00	SB12-1	5.66E-01	2.30E+00	SB12-1
	Silver	–	–	–	6.65E-01	1.19E+01	TP12A-1
	Thallium	8.84E-01	1.80E+00	MW12-8	7.60E-01	1.80E+00	MW12-8
	Vanadium	1.86E+01	2.40E+01	SB12-4	1.82E+01	2.40E+01	MW12-12
	Zinc	5.99E+01	8.37E+01	SB12-2	7.28E+01	2.85E+02	TP12A-2

Notes:

– = analyte is not a COPC in this medium.

1 Will, M.E. and G.W. Suter II, *Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process*, Martin Marietta Environmental Restoration Program, September 1994.

Earthworms-Screening benchmark concentrations for the toxicity of chemicals to earthworms.

Microorganisms-Screening benchmark concentrations for the toxicity of chemicals to soil microorganisms and microbial processes.

na criteria is not available.

TABLE M.37

Ecological Chemicals of Potential Concern (COPCs)
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Class	Analyte	CAS No.	Surface Soil (0-1 ft)			Mixed Surface and Subsurface Soil (0-4 ft)		
			Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location
Volatiles	Acetone	67641	1.06E-02	6.10E-02	TP12-3A	8.87E-03	6.10E-02	TP12-3A
	Trichloroethene	79016	--	--	--	5.97E-03	2.00E-03	TP12A-4
PAHs	2-Methylnaphthalene	91576	4.66E-02	7.80E-03	TP12-7AA	6.96E-02	7.80E-03	TP12-7AA
	Acenaphthene	83329	3.36E-02	4.40E-02	TP12A-6	6.42E-02	4.40E-02	TP12A-6
	Benzo(a)anthracene	56553	3.77E-02	2.00E-01	TP12-8A	5.75E-02	2.00E-01	TP12-8A
	Benzo(a)pyrene	50328	--	--	--	5.39E-02	1.80E-01	TP12A-7
	Benzo(b)fluoranthene	205992	3.94E-02	2.00E-01	TP12-8A	6.39E-02	3.20E-01	TP12A-7
	Benzo(ghi)perylene	191242	2.58E-02	3.50E-02	TP12-8A	5.04E-02	9.80E-02	TP12A-7
	Benzo(k)fluoranthene	207089	3.57E-02	1.70E-01	TP12-8A	6.30E-02	1.70E-01	TP12-8A
	Chrysene	218019	4.57E-02	3.10E-01	TP12-8A	6.42E-02	3.10E-01	TP12-8A
	Dibenz(a,h)anthracene	53703	2.86E-02	4.30E-02	TP12A-6	5.63E-02	9.90E-02	TP12A-7
	Fluoranthene	206440	6.12E-02	3.00E-01	TP12A-6	8.06E-02	3.20E-01	TP12A-7
	Fluorene	86737	3.88E-02	3.50E-02	TP12A-6	6.68E-02	3.50E-02	TP12A-6
	Indeno(1,2,3-cd)pyrene	193395	2.83E-02	6.90E-02	TP12A-6	5.42E-02	1.40E-01	TP12A-7
	Phenanthrene	85018	4.02E-02	2.80E-01	TP12A-6	5.92E-02	2.80E-01	TP12A-6
	Pyrene	129000	6.25E-02	3.10E-01	TP12-8A	7.68E-02	3.10E-01	TP12-8A
semi-vols	Bis(2-Ethylhexyl)phthalate	117817	4.80E-02	5.80E-03	MW12-15	7.86E-02	1.60E-02	TP12-6C
	Butylbenzylphthalate	85687	4.65E-02	4.10E-03	TP12-3A	6.91E-02	3.00E-02	TP12-6C
	Carbazole	86748	3.20E-02	4.00E-02	TP12A-6	6.25E-02	4.00E-02	TP12A-6
	Dibenzofuran	132649	--	--	--	7.15E-02	4.10E-03	TP12-23B
	Di-n-octylphthalate	117840	4.32E-02	1.50E-02	MW12-33	6.99E-02	1.50E-02	MW12-33
Pesticides	4,4'-DDD	72548	3.33E-03	1.40E-02	TP12-5A	2.70E-03	1.40E-02	TP12-5A
	4,4'-DDE	72559	2.51E-03	6.40E-03	TP12A-6	2.33E-03	6.40E-03	TP12A-6
	4,4'-DDT	50293	2.18E-03	3.80E-03	TP12A-6	2.28E-03	4.40E-03	TP12-8C

TABLE M.37

Ecological Chemicals of Potential Concern (COPCs)
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Class	Analyte	CAS No.	Surface Soil (0-1 ft)			Mixed Surface and Subsurface Soil (0-4 ft)		
			Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location
Metals	Aluminum	7429905	1.05E+04	1.41E+04	MW12-33	1.06E+04	1.86E+04	TP12A-7
	Cadmium	7440439	--	--	--	2.66E-01	3.60E+00	TP12A-3
	Chromium	7440473	1.66E+01	2.46E+01	TP12-7AA	1.69E+01	2.97E+01	TP12-23C
	Copper	7440508	--	--	--	2.23E+01	7.45E+01	TP12-23C
	Cyanide	57125	--	--	--	3.67E-01	2.20E+00	TP12-23C
	Iron	7439896	2.07E+04	2.61E+04	TP12A-6	2.17E+04	5.10E+04	TP12-23C
	Lead	7439921	--	--	--	2.02E+01	9.09E+01	TP12-23C
	Manganese	7439965	5.14E+02	7.00E+02	MW12-33	4.90E+02	8.57E+02	TP12A-7
	Mercury	7439976	--	--	--	4.83E-02	1.50E-01	TP12-23C
	Nickel	7440020	2.23E+01	3.49E+01	TP12-7BA	2.50E+01	4.55E+01	TP12-8B
	Selenium	7782492	6.07E-01	1.20E+00	TP12A-6	7.11E-01	1.90E+00	TP12A-3
	Thallium	7440280	8.80E-01	1.70E+00	MW12-14,TP12-7AA	7.54E-01	1.70E+00	MW12-14,TP12-7AA
	Vanadium	7440622	1.84E+01	2.46E+01	MW12-33	1.89E+01	3.64E+01	TP12A-7
	Zinc	7440666	1.04E+02	6.56E+02	TP12-7BA	2.96E+02	6.08E+03	TP12-23C

-- = analyte is not a COPC in this medium.

TABLE M.38

Ecological Chemicals of Potential Concern (COPCs)
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Class	Analyte	CAS No.	Surface Soil (0-1 ft)			Mixed Surface and Subsurface Soil (0-4 ft)		
			Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location
Volatiles	1,2,4-Trichlorobenzene	120821	4.71E-02	1.10E-02	MW12-18	6.61E-02	1.10E-02	MW12-18
	Acetone	67641	7.13E-03	2.60E-02	SB12-10	7.00E-03	2.60E-02	SB12-10
PAHs	2-Methylnaphthalene	91576	4.66E-02	5.50E-03	SB12-5A	6.58E-02	5.50E-03	SB12-5A
	Benzo(a)anthracene	56553	2.72E-02	2.60E-02	MW12B-1	5.37E-02	2.60E-02	MW12B-1
	Benzo(b)fluoranthene	205992	2.41E-02	3.40E-02	MW12B-1	5.13E-02	3.40E-02	MW12B-1
	Benzo(ghi)perylene	191242	4.25E-02	1.10E-02	MW12-18	6.29E-02	1.10E-02	MW12-18
	Benzo(k)fluoranthene	207089	2.67E-02	2.00E-02	MW12B-1	5.19E-02	2.00E-02	MW12B-1
	Chrysene	218019	2.19E-02	3.20E-02	MW12B-1	4.82E-02	3.20E-02	MW12B-1
	Dibenz(a,h)anthracene	53703	4.62E-02	4.80E-03	SB12-10	6.55E-02	4.80E-03	SB12-10
	Indeno(1,2,3-cd)pyrene	193395	3.96E-02	7.30E-03	SB12-10	6.09E-02	7.30E-03	SB12-10
Semi-vols	Bis(2-Ethylhexyl)phthalate	117817	4.21E-02	3.60E-02	MW12-16	6.24E-02	3.60E-02	MW12-16
	Butylbenzylphthalate	85687	4.64E-02	5.90E-03	MW12-9	6.56E-02	5.90E-03	MW12-9
	Di-n-octylphthalate	117840	4.13E-02	1.50E-02	MW12-17,SB12-10	6.20E-02	1.50E-02	MW12-17,SB12-10
PCBs	Aroclor-1254	11097691	1.95E-02	2.30E-02	SS12-144	1.91E-02	2.30E-02	SS12-144
	Aroclor-1260	11096825	1.96E-02	2.50E-02	SS12-144	1.92E-02	2.50E-02	SS12-144
Pesticides	4,4'-DDT	50293	2.07E-03	4.20E-03	SS12-144	2.00E-03	4.20E-03	SS12-144
Metals	Aluminum	7429905	9.38E+03	1.36E+04	MW12-16	9.01E+03	1.45E+04	SB12-6
	Chromium	7440473	1.46E+01	1.89E+01	SB12-10	1.40E+01	2.08E+01	SB12-6
	Copper	7440508	2.20E+01	4.11E+01	SB12-10	2.23E+01	4.11E+01	SB12-10
	Iron	7439896	2.04E+04	4.11E+04	SB12-10	1.91E+04	4.11E+04	SB12-10
	Manganese	7439965	4.41E+02	6.29E+02	TP12-23A	4.14E+02	5.96E+02	SB12-10
	Mercury	7439976	4.57E-02	2.90E-01	SB12-10	4.25E-02	2.90E-01	SB12-10
	Nickel	7440020	2.18E+01	3.03E+01	SB12-5A	2.20E+01	3.19E+01	SB12-6
	Selenium	7782492	5.06E-01	1.30E+00	MW12B-1	4.61E-01	1.30E+00	MW12B-1
	Thallium	7440280	8.05E-01	2.20E+00	SB12-10	7.30E-01	2.20E+00	SB12-10
	Vanadium	7440622	1.69E+01	2.28E+01	MW12-16	1.64E+01	2.38E+01	SB12-6
	Zinc	7440666	5.35E+01	8.00E+01	SB12-10	5.05E+01	8.00E+01	SB12-10

-- = analyte is not a COPC in this medium.

TABLE M.39
Ecological Chemicals of Potential Concern (COPCs)
Seneca / SEAD-12
Seneca Army Depot Activity

Analyte	Primary Expos./Effect[1]		Sediment		Surface Water	
	Direct	Bioaccum./ Biomagn.	Maximum Concentration (mg/kg)	Mean	Maximum Concentration (mg/kg)	Mean
Volatile Organics						
Acetone	+	–	9.50E-02	2.32E-02	–	–
Trichloroethene	+	–	1.80E-02	1.52E-02	–	–
Semivolatile Organics						
4-Methylphenol	–	–	1.50E-01	1.26E-01	–	–
Benzo(a)anthracene	+	–	3.10E+00	2.06E-01	–	–
Benzo(a)pyrene	++	–	3.30E+00	2.14E-01	–	–
Benzo(b)fluoranthene	+	–	3.20E+00	2.41E-01	–	–
Benzo(ghi)perylene	+	–	2.10E+00	1.68E-01	–	–
Benzo(k)fluoranthene	+	–	2.70E+00	1.90E-01	–	–
Bis(2-Ethylhexyl)phthalate	+	++	–		1.20E-02	1.02E-03
Carbazole	–	–	9.10E-01	1.12E-01	–	–
Chrysene	+	–	3.20E+00	2.29E-01	–	–
Dibenz(a,h)anthracene	+	–	8.60E-01	1.01E-01	–	–
Dibenzofuran	++	++	6.40E-02	9.91E-02	–	–
Indeno(1,2,3-cd)pyrene	+	–	2.00E+00	1.55E-01	–	–
Pesticides/PCBs						
4,4'-DDD	+	++	1.10E-01	8.82E-03	–	–
4,4'-DDE	+	++	7.60E-02	8.72E-03	–	–
4,4'-DDT	++	++	2.00E-01	9.41E-03	–	–
Aroclor-1254	–	++	1.20E+00	7.40E-02	–	–
Delta-BHC	+	++	–		4.60E-06	4.08E-06
Heptachlor	+	++	–		6.30E-06	4.22E-06
Heptachlor epoxide	+	++	1.10E-02	2.85E-03	–	–
Hexachlorobenzene	++	++	–		2.00E-05	5.33E-06
Metals						
Aluminum	+	–	3.87E+04	1.24E+04	3.43E+00	2.81E-01
Antimony	+	+	2.80E+00	8.54E-01	–	–
Arsenic	+	++	1.91E+01	5.37E+00	–	–
Barium	+	–	8.85E+02	1.16E+02	1.15E-01	4.06E-02
Beryllium	+	+	1.70E+00	4.34E-01	–	–
Cadmium	+	++	9.00E+00	6.63E-01	–	–
Chromium	+	++	1.30E+02	2.29E+01	–	–
Cobalt	+	+	7.53E+01	1.15E+01	6.00E-03	8.60E-04
Copper	+	++	1.16E+03	5.14E+01	2.76E-02	2.92E-03
Iron	+	–	8.59E+04	2.57E+04	6.83E+00	4.70E-01
Lead	+	++	2.15E+02	2.65E+01	3.54E-02	1.83E-03
Manganese	+	–	1.40E+04	1.08E+03	1.32E+00	1.02E-01
Mercury	+	++	1.70E+00	1.37E-01	1.10E-04	2.27E-04
Nickel	+	+	1.26E+02	3.44E+01	–	–
Selenium	+	++	6.20E+00	1.66E+00	–	–
Silver	+	++	1.50E+00	4.37E-01	1.60E-03	6.80E-04
Thallium	+	+	4.00E+00	1.66E+00	–	–
Vanadium	+	+	7.03E+01	2.38E+01	–	–
Zinc	+	++	2.65E+03	2.39E+02	–	–

1 Primary exposure/effects rated qualitatively as "--" - minor concern, "+" - some potential, "++" - significant potential

a Maximum concentration in mixed soils is the same as in surface soils.

b Not Identified as COPC because site average is less than background average.

-- = analyte is not a COPC in this medium.

TABLE M.40 - Continued
NOAEL Toxicity Reference Values - Soil Receptors (Birds)
SEAD-12
Seneca Army Depot, NY

Constituent	Test Organism	Endpoint/Duration/Effect	Source	Effect Dose (mg/kg/day)	Endpoint CF(1)	Study Duration CF(1)	Total CF(1)	TRV(2) (mg/kg/day)
Volatiles								
1,2,4-Trichlorobenzene		No data available						no data
Acetone	Japanese quail	LD50, subacute, diet	HSDB, 1995	4.51E+03	10	10	100	4.51E+01
Methyl butyl ketone		No data available						no data
Total Xylenes	Japanese quail	NOAEL, 14-day old chicks, diet, 5 days, survival	Hill and Camardese 1986	3.06E+03	1	10	10	3.06E+02
Trichloroethene		No data available						no data
PAH's								
2-Methylnaphthalene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Acenaphthylene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Benzo(a)anthracene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Benzo(a)pyrene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Benzo(b)fluoranthene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Benzo(g,h,i)perylene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Benzo(k)fluoranthene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Chrysene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Dibenz(a,h)anthracene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Fluoranthene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Fluorene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Indeno(1,2,3-cd)pyrene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Naphthalene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Phenanthrene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Pyrene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Semi-volatiles								
4-Methylphenol	red-winged blackbird	LD50, single gavage, survival	Schafer et al. 1983.	2.06E+01	10	10	100	2.06E-01
Bis(2-ethylhexyl) phthalate	ringed dove	NOAEL, diet, 4 wks. crit. lifestage, reproduction	Sample et al. 1996	1.11E+00	1	1	1	1.11E+00
Butyl benzylphthalate		No data available						no data
Carbazole		No data available						no data
Di-n-octylphthalate	ringed dove	NOAEL, diet, 4 wks. crit. lifestage, reproduction (bis(2-ethylhexyl) phthalate as surrogate)	Sample et al. 1996	1.11E+00	1	1	1	1.11E+00
Dibenzofuran	red-winged blackbird	LC50, diet, 18 hours, survival	Schafer et al. 1983.	2.18E+01	10	10	100	2.18E-01
Phenol		No data available						no data
PCB's								
Arochlor 1254	ring-necked pheasant	NOAEL, oral gelatin capsule, 17 wks. crit. lifestage, reproduction	Sample et al. 1996	1.80E-01	1	1	1	1.80E-01
Arochlor 1254	Amer. kestrel	NOAEL, diet, 62 days, reproduction	Bird et al. 1983	1.00E+01	10	10	100	1.00E-01
Arochlor 1260	Japanese quail	LOAEL, diet, 21 day, reproduction	Sample et al. 1996	7.04E+00	10	10	100	7.04E-02
Arochlor 1260	Amer. kestrel	NOAEL, diet, 62 days, reproduction (Arochlor 1254 as surrogate)	Bird et al. 1983	1.00E+01	10	10	100	1.00E-01
Pesticides								

TABLE M.40
NOAEL Toxicity Reference Values - Soil Receptors (Birds)
SEAD-12
Seneca Army Depot, NY

Constituent	Test Organism	Endpoint/Duration/Effect	Source	Effect Dose (mg/kg/day)	Endpoint CF(1)	Study Duration CF(1)	Total CF(1)	TRV(2) (mg/kg/day)
Volatiles								
1,2,4-Trichlorobenzene		No data available						no data
Acetone	Japanese quail	LD50, subacute, diet	HSDB, 1995	4.51E+03	10	10	100	4.51E+01
Methyl butyl ketone		No data available						no data
Total Xylenes	Japanese quail	NOAEL, 14-day old chicks, diet, 5 days, survival	Hill and Camardese 1986	3.06E+03	1	10	10	3.06E+02
Trichloroethene		No data available						no data
PAH's								
2-Methylnaphthalene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Acenaphthylene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Benzo(a)anthracene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Benzo(a)pyrene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Benzo(b)fluoranthene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Benzo(g,h,i)perylene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Benzo(k)fluoranthene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Chrysene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Dibenz(a,h)anthracene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Fluoranthene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Fluorene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Indeno(1,2,3-cd)pyrene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Naphthalene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Phenanthrene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Pyrene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	10	1	10	2.85E+01
Semi-volatiles								
4-Methylphenol	red-winged blackbird	LD50, single gavage, survival	Schafer et al 1983	2.06E+01	10	10	100	2.06E-01
Bis(2-ethylhexyl) phthalate	ringed dove	NOAEL, diet, 4 wks crit. lifestage, reproduction	Sample et al. 1996	1.11E+00	1	1	1	1.11E+00
Butyl benzylphthalate		No data available						no data
Carbazole		No data available						no data
Di-n-octylphthalate	ringed dove	NOAEL, diet, 4 wks. crit. lifestage, reproduction (bis(2-ethylhexyl) phthalate as surrogate)	Sample et al. 1996	1.11E+00	1	1	1	1.11E+00
Dibenzofuran	red-winged blackbird	LC50, diet, 18 hours, survival	Schafer et al. 1983.	2.18E+01	10	10	100	2.18E-01
Phenol		No data available						no data
PCB's								
Arochlor 1254	ring-necked pheasant	NOAEL, oral gelatin capsule, 17 wks. crit. lifestage, reproduction	Sample et al. 1996	1.80E-01	1	1	1	1.80E-01
Arochlor 1254	Amer. kestrel	LOAEL, diet, 62 days, reproduction	Bird et al. 1983	1.00E+01	10	1	10	1.00E+00
Arochlor 1260	Japanese quail	LOAEL, diet, 21 day, reproduction	Sample et al. 1996	7.04E+00	10	10	100	7.04E-02
Arochlor 1260	Amer. kestrel	LOAEL, diet, 62 days, reproduction (Arochlor 1254 as surrogate)	Bird et al. 1983	1.00E+01	10	1	10	1.00E+00
Pesticides								
4,4'-DDD	Japanese quail	NOAEL, diet, 10 week, reproduction (DDT used as surrogate)	Sample et al. 1996 (Appendix C)	5.60E-01	1	1	1	5.60E-01
4,4'-DDD	Amer. kestrel	LOAEL, diet, 2 years, reproduction (DDE as surrogate)	Matsumura 1985	2.20E-01	10	1	10	2.20E-02
4,4'-DDE	brown pelican	NOAEL, diet, 5 yrs, reproduction (used DDT)	Sample et al., 1996	2.80E-03	1	1	1	2.80E-03
4,4'-DDE	Amer. kestrel	LOAEL, diet, 2 years, reproduction	Matsumura 1985	2.20E-01	10	1	10	2.20E-02

TABLE M.40
NOAEL Toxicity Reference Values - Soil Receptors (Birds)
SEAD-12
Seneca Army Depot, NY

Constituent	Test Organism	Endpoint/Duration/Effect	Source	Effect Dose (mg/kg/day)	Endpoint CF(1)	Study Duration CF(1)	Total CF(1)	TRV(2) (mg/kg/day)
4,4'-DDT	brown pelican	NOAEL, diet, 5 yrs, reproduction	Sample et al., 1996	2.80E-03	1	1	1	2.80E-03
4,4'-DDT	Amer. kestrel	LOAEL, diet, 2 years, reproduction (DDE as surrogate)	Matsumura 1985	2.20E-01	10	1	10	2.20E-02
BHC, alpha	Japanese quail	NOAEL, diet, 90 days critical lifestage, reproduction (BHC-mixed isomers)	Sample et al. 1996	5.60E-01	1	1	1	5.60E-01
BHC, delta	Japanese quail	NOAEL, diet, 90 days critical lifestage, reproduction (BHC-mixed isomers)	Sample et al 1996	5.60E-01	1	1	1	5.60E-01
Dieldrin	barn owl	NOAEL, oral, 2 yrs, reproduction	Sample et al., 1996	7.70E-02	1	1	1	7.70E-02
Endrin	mallard	NOAEL, diet, >200 days crit. lifestage, reproduction	Sample et al. 1996	3.00E-01	1	1	1	3.00E-01
Endrin	screech owl	LOAEL, diet, >83 days crit. lifestage, reproduction	Sample et al. 1996	1.04E-01	10	1	10	1.04E-02
Heptachlor	mallard	LD50, single oral dose, survival	Hudson et al. 1984	2.08E+03	10	10	100	2.08E+01
Heptachlor epoxide	mallard	LD50, single oral dose, survival (heptachlor as surrogate)	Hudson et al. 1984	2.08E+03	10	10	100	2.08E+01
Hexachlorobenzene		No data available						no data
Metals								
Aluminum	ringed dove	NOAEL, diet, 4-month, reproduction	Sample et al., 1996	1.10E+02	1	1	1	1.10E+02
Arsenic	mallard	NOAEL, diet, 128 days, mortality	Sample et al. 1996	5.14E+00	1	1	1	5.14E+00
Barium	chicken	NOAEL, diet, 4 wks (from 1-day old chicks) mortality	Sample et al 1996	2.08E+02	1	10	10	2.08E+01
Cadmium	mallard	NOAEL, diet, 90 days, reproduction	Sample et al., 1996	1.45E+00	1	1	1	1.45E+00
Chromium	Black duck	NOAEL, diet, 10 mos, reproduction	Sample et al., 1996	1.00E+00	1	1	1	1.00E+00
Copper	chicken	NOAEL, diet, 10 wks, growth, mortality	Sample et al. 1996	4.70E+01	1	1	1	4.70E+01
Iron		No data available						no data
Lead	Japanese quail	NOAEL, diet, 12 wks, reproduction	Sample et al., 1996	1.13E+00	1	1	1	1.13E+00
Lead	Amer. kestrel	NOAEL, diet, 7 mos. crit. lifestage, reproduction	Sample et al. 1996	3.85E+00	1	1	1	3.85E+00
Manganese	Japanese quail	NOAEL, diet, 75 days, growth & aggressive behavior	Sample et al., 1996	9.77E+02	1	1	1	9.77E+02
Mercury	Amer. kestrel	NOAEL, diet, 3 month, eggshell thickness (Dimethylmercury as surrogate)	Peakall, et al 1972	2.86E+00	1	1	1	2.86E+00
Mercury	coturnix quail	LOAEL, diet, acute, 5 days, mortality, (mercuric chloride)	USEPA 1999	3.25E+02	10	10	100	3.25E+00
Nickel	mallard	NOAEL, diet, duckling, 90 days, mortality, growth, behavior	Sample et al. 1996	7.74E+01	1	1	1	7.74E+01
Selenium	mallard	NOAEL, diet, 100 days, mortality	Sample et al., 1996	4.00E-01	1	1	1	4.00E-01
Selenium	Amer. kestrel	NOAEL, diet, 11 weeks, survival, food cons, reproduction	Santolo et al 1999	1.71E+00	1	1	1	1.71E+00
Silver		No data available						no data
Thallium	European starling	LD50, single gavage, survival	Schafer et al 1983.	9.50E+00	10	10	100	9.50E-02
Vanadium	mallard	NOAEL, diet, 12 wks., mortality, body wt, blood chemistry	Sample et al. 1996	1.14E+01	1	1	1	1.14E+01
Zinc	White Leghorn Hen	NOAEL, diet, 44 wks, reproduction	Sample et al., 1996	1.45E+01	1	1	1	1.45E+01

[1] CF = conversion factor.

[2] The toxicity reference value was derived by dividing the effect dose by the total conversion factor.

TABLE M.41
LOAEL Toxicity Reference Values - Soil Receptors (Birds)
SEAD-12
Seneca Army Depot, NY

Constituent	Test Organism	Endpoint/Duration/Effect	Source	Effect Dose (mg/kg/day)	Endpoint CF(1)	Study Duration CF(1)	Total CF(1)	TRV(2) (mg/kg/day)
Volatiles								
1,2,4-Trichlorobenzene		No data available						no data
Acetone	Japanese quail	LD50, subacute, diet	HSDB, 1995	4.51E+03	1	10	10	4.51E+02
Methyl butyl ketone		No data available						no data
Total Xylenes	Japanese quail	NOAEL, 14-day old chicks, diet, 5 days, survival	Hill and Camardese	3.06E+03	0.1	10	1	3.06E+03
Trichloroethene		No data available						no data
PAH's								
2-Methylnaphthalene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Acenapthylene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Benzo(a)anthracene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Benzo(a)pyrene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Benzo(b)fluoranthene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Benzo(g,h,i)perylene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Benzo(k)fluoranthene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Chrysene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Dibenz(a,h)anthracene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Fluoranthene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Fluorene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Indeno(1,2,3-cd)pyrene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Naphthalene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Phenanthrene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Pyrene	mallard	LOAEL, diet, 7 months, physiological (mixed PAHs used as surrogate)	Eisler, 1987	2.85E+02	1	1	1	2.85E+02
Semi-volatiles								
4-Methylphenol	red-winged	LD50, single gavage, survival	Schafer et al. 1983.	2.06E+01	10	10	100	2.06E-01
Bis(2-ethylhexyl)phthalate	ringed dove	NOAEL, diet, 4-week, reproduction	Sample et al., 1996	1.11E+00	0.1	1	0.1	1.11E+01
Butylbenzylphthalate		No data available						no data
Carbazole		No data available						no data
Di-n-octylphthalate		LOAEL, diet, 4 wks. crit. lifestage, reproduction (bis(2-ethylhexyl) phthalate as surrogate)	Sample et al., 1996	1.11E+00	1	1	1	1.11E+00
Dibenzofuran	red-winged	LC50, diet, 18 hours, survival	Schafer et al. 1983.	2.18E+01	10	10	100	2.18E-01
Phenol		No data available						no data
PCB's								
Arochlor 1254	ring-necked pheasant	LOAEL, oral gelatin capsule, 17 wks. crit. lifestage, reproduction	Sample et al. 1996	1.80E+00	1	1	1	1.80E+00
Arochlor 1254	Amer. kestrel	LOAEL, diet, 62 days, reproduction	Bird et al. 1983	1.00E+01	1	1	1	1.00E+01
Arochlor 1260	Japanese quail	LOAEL, diet, 21 day, reproduction	Sample et al. 1996	7.04E+00	1	10	10	7.04E-01
Arochlor 1260	Amer. kestrel	LOAEL, diet, 62 days, reproduction (Arochlor 1254 as surrogate)	Bird et al. 1983	1.00E+01	1	1	1	1.00E+01
Pesticides								
4,4'-DDD	Japanese quail	LOAEL, diet, 10 week, reproduction (DDT used as surrogate)	Sample et al. 1996	5.63E+00	1	1	1	5.63E+00
4,4'-DDD	Amer. kestrel	LOAEL, diet, 2 years, reproduction (DDE as surrogate)	Matsumura 1985	2.20E-01	1	1	1	2.20E-01
4,4'-DDE	brown pelican	LOAEL, diet, 5 yrs, reproduction (used DDT)	Sample et al., 1996	2.80E-02	1	1	1	2.80E-02
4,4'-DDE	Amer. kestrel	LOAEL, diet, 2 years, reproduction	Matsumura 1985	2.20E-01	1	1	1	2.20E-01
4,4'-DDT	brown pelican	LOAEL, diet, 5 yrs, reproduction	Sample et al., 1996	2.80E-02	1	1	1	2.80E-02
4,4'-DDT	Amer. kestrel	LOAEL, diet, 2 years, reproduction (DDE as surrogate)	Matsumura 1985	2.20E-01	1	1	1	2.20E-01
BHC, alpha	Japanese quail	LOAEL, diet, 90 days critical lifestage, reproduction (BHC-mixed isomers)	Sample et al. 1996	2.25E+00	1	1	1	2.25E+00

TABLE M.41
LOAEL Toxicity Reference Values - Soil Receptors (Birds)
SEAD-12
Seneca Army Depot, NY

Constituent	Test Organism	Endpoint/Duration/Effect	Source	Effect Dose (mg/kg/day)	Endpoint CF(1)	Study Duration CF(1)	Total CF(1)	TRV(2) (mg/kg/day)
Delta-BHC	Japanese quail	LOAEL, diet, 90 days critical lifestage, reproduction (BHC-mixed isomers)	Sample et al. 1996	2.25E+00	1	1	1	2.25E+00
Dieldrin	barn owl	NOAEL, oral, 2 yrs, reproduction	Sample et al., 1996	7.70E-02	0.1	1	0.1	7.70E-01
Endrin	mallard	NOAEL, diet, >200 days crit. lifestage, reproduction	Sample et al. 1996	3.00E-01	0.1	1	0.1	3.00E+00
Endrin	screech owl	LOAEL, diet, >83 days crit. lifestage, reproduction	Sample et al. 1996	1.04E-01	1	10	10	1.04E-02
Heptachlor	mallard	LD50, single oral dose, survival	Hudson et al. 1984	2.08E+03	10	10	100	2.08E+01
Heptachlor epoxide	mallard	LD50, single oral dose, survival (heptochlor as surrogate)	Hudson et al. 1984	2.08E+03	10	10	100	2.08E+01
Hexachlorobenzene		No data available						no data
Metals								
Aluminum	ringed dove	NOAEL, diet, 4-month, reproduction	Sample et al., 1996	1.10E+02	0.1	1	0.1	1.10E+03
Arsenic	mallard	LOAEL, diet, 128 days, mortality	Sample et al. 1996	1.28E+01	1	1	1	1.28E+01
Barium	chicken	LOAEL, diet, 4 wks. mortality	Sample et al. 1996	4.16E+02	1	10	10	4.16E+01
Cadmium	mallard	LOAEL, diet, 90 days, reproduction	Sample et al., 1996	2.00E+01	1	1	1	2.00E+01
Chromium	Black duck	LOAEL, diet, 10 mos, reproduction	Sample et al., 1996	5.00E+00	1	1	1	5.00E+00
Copper	chicken	NOAEL, diet, 10 wks, growth, mortality	Sample et al. 1996	4.70E+01	0.1	1	0.1	4.70E+02
Iron		No data available						No data
Lead	Japanese quail	LOAEL, diet, 12 wks, reproduction	Sample et al., 1996	1.13E+01	1	1	1	1.13E+01
Lead	Amer. kestrel	NOAEL, diet, 7 mos. crit. lifestage, reproduction	Sample et al. 1996	3.85E+00	0.1	1	0.1	3.85E+01
Manganese	Japanese quail	NOAEL, diet, 75 days, growth & aggressive behavior	Sample et al., 1996	9.77E+02	0.1	1	0.1	9.77E+03
Mercury	coturnix quail	LOAEL, diet, acute, 5 days, mortality, (mercuric chloride)	USEPA, 1999	3.25E+02	1	10	10	3.25E+01
Mercury	Amer. kestrel	NOAEL, diet, 3 month, eggshell thickness (Dimethylmercury as surrogate)	Peakall, et al. 1972	2.86E+00	0.1	1	0.1	2.86E+01
Nickel	mallard	LOAEL, diet, duckling, 90 days, mortality, growth, behavior	Sample et al. 1996	1.07E+02	1	1	1	1.07E+02
Selenium	mallard	LOAEL, diet,100 days,mortality	Sample et al., 1996	8.00E-01	1	1	1	8.00E-01
Selenium	Amer. kestrel	LOAEL, , diet, 11 weeks, survival, food cons, reproduction	Santolo et al. 1999	3.43E+00	1	1	1	3.43E+00
Silver		No data available						No data
Thallium	European starling	LD50, single gavage, survival	Schafer et al. 1983.	9.50E+00	10	10	100	9.50E-02
Vanadium	mallard	NOAEL, diet, 12 wks., mortality, body wt, blood chemistry	Sample et al. 1996	1.14E+01	0.1	1	0.1	1.14E+02
Zinc	White Leghorn	LOAEL, diet, 44 wks, reproduction	Sample et al., 1996	1.31E+02	1	1	1	1.31E+02

[1] CF = conversion factor.

[2] The toxicity reference value was derived by dividing the effect dose by the total conversion factor.

TABLE M.42
NOAEL Toxicity Reference Values - Soil Receptors (Mammals)
SEAD-12
Seneca Army Depot, NY

Constituent	Test Organism	Endpoint/Duration/Effect	Source	Effect Dose (mg/kg/day)	Endpoint CF[1]	Study Duration CF[1]	Total CF[1]	TRV[2] (mg/kg/day)
Volatiles								
1,2,4-Trichlorobenzene		No data available						No data
Acetone	rat	NOAEL, gavage, 90-day, liver and kidney damage	Sample et al. 1996	1.00E+02	1	1	1	1.00E+02
Methyl butyl ketone		No data available						No data
Total Xylenes	mouse	NOAEL, gavage, day 6-15 gestation crit. lifestage, reproduction	Sample et al. 1996	2.10E+00	1	1	1	2.10E+00
Trichloroethene	mouse	LOAEL, oral gavage, 6 wks., hepatotoxicity	Sample et al. 1996	7.00E+01	10	10	100	7.00E-01
PAHs								
2-Methylnaphthalene	mouse	LOAEL, diet, 81 wks., respitory (naphthalene used as surrogate)	ATSDR 1995	7.16E+01	10	1	10	7.16E+00
Acenapthylene	mouse	LOAEL, oral intubation, gestation days 7-16 (crit. lifestage), reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	10	1	10	1.00E+00
Benzo(a)anthracene	mouse	LOAEL, oral intubation, gestation days 7-16 (crit. lifestage), reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	10	1	10	1.00E+00
Benzo(a)pyrene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction	Sample et al. 1996	1.00E+01	10	1	10	1.00E+00
Benzo(b)fluoranthene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	10	1	10	1.00E+00
Benzo(g,h,i)perylene	mouse	LOAEL, oral intubation, gestation days 7-16 (crit. lifestage), reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	10	1	10	1.00E+00
Benzo(k)fluoranthene	mouse	LOAEL, oral intubation, gestation days 7-16 (crit. lifestage), reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	10	1	10	1.00E+00
Chrysene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	10	1	10	1.00E+00
Dibenz(a,h)anthracene	mouse	LOAEL, oral intubation, gestation days 7-16 (crit. lifestage), reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	10	1	10	1.00E+00
Fluoranthene	mouse	LOAEL, oral gavage, 13 wks., hepatic effects	ATSDR 1995	1.25E+02	10	1	10	1.25E+01
Fluorene	mouse	LOAEL, oral gavage, 13 wks., hepatic effects	ATSDR 1995	1.25E+02	10	1	10	1.25E+01
Indeno(1,2,3-cd)pyrene	mouse	LOAEL, oral intubation, gestation days 7-16 (crit. lifestage), reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	10	1	10	1.00E+00
Naphthalene	mouse	LOAEL, diet, 81 wks., respitory	ATSDR 1995	7.16E+01	10	1	10	7.16E+00
Phenanthrene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	10	1	10	1.00E+00
Pyrene	mouse	LOAEL, oral intubation, gestation days 7-16 (crit. lifestage), reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	10	1	10	1.00E+00
Semi-volatiles								
4-Methylphenol	mink	NOAEL, diet, 6 mos. crit. lifestage, reproduction (2-Methylphenol as	Sample et al. 1996	2.19E+02	1	1	1	2.19E+02
Bis(2-ethylhexyl)phthalate	mouse	NOAEL, diet, 105 days crit. lifestage, reproduction	Sample et al. 1996	1.83E+01	1	1	1	1.83E+01
Butylbenzylphthalate	rat	NOAEL, diet, 6 months, reproduction, liver weight, blood chemistry	IRIS, 1999	1.59E+02	1	1	1	1.59E+02
Carbazole	rat	LD50, oral		5.00E+02	10	10	100	5.00E+00
Di-n-octylphthalate	mouse	LD50, oral	Sax, 1984	6.51E+03	10	10	100	6.51E+01
Dibenzofuran		No data available						No data
Phenol		No data available						No data
PCBs								
Arochlor 1254	oldfield mouse	LOAEL, diet, 12 mos. crit. lifestage, reproduction	Sample et al. 1996	6.80E-01	10	1	10	6.80E-02
Arochlor 1260	oldfield mouse	LOAEL, diet, 12 mos. crit. lifestage, reproduction (Aroclor 1254 used as	Sample et al. 1996	6.80E-01	10	1	10	6.80E-02

TABLE M.42
NOAEL Toxicity Reference Values - Soil Receptors (Mammals)
SEAD-12
Seneca Army Depot, NY

Constituent	Test Organism	Endpoint/Duration/Effect	Source	Effect Dose (mg/kg/day)	Endpoint CF[1]	Study Duration CF[1]	Total CF[1]	TRV[2] (mg/kg/day)
Pesticides								
4,4'-DDD	rat	NOAEL, diet, 2 year crit. lifestage, reproduction (DDT used as surrogate)	Sample et al. 1996	8.00E-01	1	1	1	8.00E-01
4,4'-DDE	rat	NOAEL, diet, 2 year crit. lifestage, reproduction (DDT used as surrogate)	Sample et al. 1996	8.00E-01	1	1	1	8.00E-01
4,4'-DDT	rat	NOAEL, diet, 2 year crit. lifestage, reproduction	Sample et al. 1996	8.00E-01	1	1	1	8.00E-01
BHC, alpha	rat	NOAEL, diet, 4 generations, reproduction (BHC-mixed isomers)	Sample et al. 1996	1.60E+00	1	1	1	1.60E+00
Dieldrin	rat	LOAEL, diet, 3 yr. crit. lifestage, reproduction.	Sample et al. 1996	2.00E-01	10	1	10	2.00E-02
Endrin	mouse	LOAEL, diet, 120 days crit. lifestage, reproduction	Sample et al. 1996	9.20E-01	10	1	10	9.20E-02
Metals								
Aluminum	mouse	NOAEL, water, 3 generations, reproduction	Sample et al. 1996	1.93E+00	1	1	1	1.93E+00
Cadmium	rat	NOAEL, gavage, 6 weeks mating and gestation crit. lifestage, reproduction	Sample et al. 1996	1.00E+00	1	1	1	1.00E+00
Chromium	rat	NOAEL, diet, 2 year, reproduction	Sample et al. 1996	2.74E+03	1	1	1	2.74E+03
Copper	rat	NOAEL, diet, 13 wks., gastrointestinal effects	ATSDR 1990	1.40E+01	1	1	1	1.40E+01
Iron	rat	LD50, oral, acute	RTECS 1994	2.55E+03	10	10	100	2.55E+01
Lead	rat	NOAEL, diet, 3 generations, reproduction	Sample et al. 1996	8.00E+00	1	1	1	8.00E+00
Manganese	rat	NOAEL, diet, 244 days crit. lifestage, reproduction	Sample et al. 1996	8.80E+01	1	1	1	8.80E+01
Mercury	mouse	NOAEL, diet, 20 mo., mortality, liver and kidney histology, reproduction	Sample et al. 1996	1.32E+01	1	1	1	1.32E+01
Nickel	rat	NOAEL, diet, 3 generations, reproduction	Sample et al. 1996	4.00E+01	1	1	1	4.00E+01
Selenium	rat	NOAEL, water, 1 yr througth 2 generations, reproduction	Sample et al. 1996	2.00E-01	1	1	1	2.00E-01
Silver	mouse	LOAEL, water, 125 days, decr in activity	ATSDR 1990	1.81E+01	10	1	10	1.81E+00
Thallium	rat	LOAEL, water, 60 days, reproduction	Sample et al. 1996	7.40E-01	10	1	10	7.40E-02
Vanadium	rat	LOAEL, oral intubation, 60 days (critical lifestage), reproduction	Sample et al. 1996	2.10E+00	10	1	10	2.10E-01
Zinc	rat	NOAEL, oral in diet, 1-16d (critical lifestage)	Sample et al. 1996	1.60E+02	1	1	1	1.60E+02

1 CF = conversion factor.
2 The toxicity reference value was derived by dividing the effect dose by the total conversion factor.

TABLE M.43
LOAEL Toxicity Reference Values - Soil Receptors (Mammals)
SEAD-12
Seneca Army Depot, NY

Constituent	Test Organism	Endpoint/Duration/Effect	Source	Effect Dose (mg/kg/day)	Endpoint CF[1]	Study Duration CF[1]	Total CF[1]	TRV[2] (mg/kg/day)
Volatiles								
1,2,4-Trichlorobenzene		No data available						No data
Acetone	rat	LOAEL, gavage, 90-day, liver and kidney damage	Sample et al., 1996	5.00E+02	1	1	1	5.00E+02
Methyl butyl ketone		No data available						No data
Total Xylenes	mouse	LOAEL, gavage, day 6-15 gestation crit. lifestage, reproduction	Sample et al. 1996	2.06E+03	1	1	1	2.06E+03
Trichloroethene	mouse	LOAEL, oral gavage, 6 wks., hepatotoxicity	Sample et al. 1996	7.00E+01	1	1	1	7.00E+01
PAHs								
2-Methylnaphthalene	mouse	LOAEL, diet, 81 wks., respiratory (naphthalene used as surrogate)	ATSDR 1995	7.16E+01	1	1	1	7.16E+01
Acenapthylene	mouse	LOAEL, oral intubation, gestation days 7-16 (crit. lifestage).	Sample et al. 1996	1.00E+01	1	1	1	1.00E+01
Benzo(a)anthracene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	1	1	1	1.00E+01
Benzo(a)pyrene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction	Sample et al. 1996	1.00E+01	1	1	1	1.00E+01
Benzo(b)fluoranthene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	1	1	1	1.00E+01
Benzo(g,h,i)perylene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	1	1	1	1.00E+01
Benzo(k)fluoranthene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	1	1	1	1.00E+01
Chrysene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	1	1	1	1.00E+01
Dibenz(a,h)anthracene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	1	1	1	1.00E+01
Fluoranthene	mouse	LOAEL, oral gavage, 13 wks., hepatic effects	ATSDR 1995	1.25E+02	1	1	1	1.25E+02
Fluorene	mouse	LOAEL, oral gavage, 13 wks., hepatic effects	ATSDR 1995	1.25E+02	1	1	1	1.25E+02
Indeno(1,2,3-cd)pyrene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	1	1	1	1.00E+01
Naphthalene	mouse	LOAEL, diet, 81 wks., respiratory	ATSDR 1995	7.16E+01	1	1	1	7.16E+01
Phenanthrene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	1	1	1	1.00E+01
Pyrene	mouse	LOAEL, oral intubation, gestation days 7-16 crit. lifestage, reproduction (benzo(a)pyrene used as surrogate)	Sample et al. 1996	1.00E+01	1	1	1	1.00E+01
Semi-volatiles								
4-Methylphenol	mink	NOAEL, diet, 6 mos. crit. lifestage, reproduction (2-methylphenol as surrogate)	Sample et al. 1996	2.19E+02	1	1	1	2.19E+02
bis(2-Ethylhexyl)phthalate	mouse	NOAEL, diet, 105 days crit. lifestage, reproduction	Sample et al. 1996	1.83E+02	1	1	1	1.83E+02
Butylbenzylphthalate	rat	LOAEL, diet, 6 months, reproduction, liver weight, blood chemistry	IRIS, 1999	4.70E+02	1	1	1	4.70E+02
Carbazole	rat	LD50, oral	Sax, 1984	5.00E+02	10	10	100	5.00E+00
Di-n-octylphthalate	mouse	LD50, oral	Sax, 1984	6.51E+03	10	10	100	6.51E+01
Dibenzofuran		No data available						No data
Phenol		No data available						No data
PCBs								
Arochlor 1254	oldfield mouse	LOAEL, diet, 12 mos. crit. lifestage, reproduction	Sample et al. 1996	6.80E-01	1	1	1	6.80E-01
Arochlor 1260	oldfield mouse	LOAEL, diet, 12 mos. crit. lifestage, reproduction (Aroclor 1254 used as	Sample et al. 1996	6.80E-01	1	1	1	6.80E-01

TABLE M.43
LOAEL Toxicity Reference Values - Soil Receptors (Mammals)
SEAD-12
Seneca Army Depot, NY

Constituent	Test Organism	Endpoint/Duration/Effect	Source	Effect Dose (mg/kg/day)	Endpoint CF[1]	Study Duration CF[1]	Total CF[1]	TRV[2] (mg/kg/day)
Pesticides								
4,4'-DDD	rat	LOAEL, diet, 2 years, reproduction (DDT used as surrogate)	Sample et al. 1996	4.00E+00	1	1	1	4.00E+00
4,4'-DDE	rat	LOAEL, diet, 2 years, reproduction (DDT used as surrogate)	Sample et al. 1996	4.00E+00	1	1	1	4.00E+00
4,4'-DDT	rat	LOAEL, diet, 2 years, reproduction	Sample et al., 1996	4.00E+00	1	1	1	4.00E+00
BHC, alpha	rat	LOAEL, diet, 4 generations, reproduction (BHC-mixed isomers)	Sample et al. 1996	3.20E+00	1	1	1	3.20E+00
Dieldrin	rat	LOAEL, diet, 3 yr, crit. Lifestage, reproduction	Sample et al., 1996	2.00E-01	1	1	1	2.00E-01
Endrin	mouse	LOAEL, diet, 120 days crit. lifestage, reproduction	Sample et al. 1996	9.20E-01	1	1	1	9.20E-01
Metals								
Aluminum	mouse	LOAEL, water, 3 generations, reproduction	Sample et al., 1996	1.93E+01	1	1	1	1.93E+01
Cadmium	rat	LOAEL, gavage, 6 weeks mating and gestation crit. lifestage,	Sample et al. 1996	1.00E+01	1	1	1	1.00E+01
Chromium	rat	NOAEL, diet, 2 year, reproduction	Sample et al. 1996	2.74E+03	0.1	1	0.1	2.74E+04
Copper	rat	LOAEL, diet, 13 wks., gastrointestinal effects	ATSDR 1990	2.80E+01	1	1	1	2.80E+01
Iron	rat	LD50, oral, acute	RTECS 1994	2.55E+03	10	10	100	2.55E+01
Lead	rat	LOAEL, diet, 3 generations, reproduction	Sample et al. 1996	8.00E+01	1	1	1	8.00E+01
Manganese	rat	LOAEL, diet, 244 days crit. lifestage, reproduction	Sample et al. 1996	2.84E+02	1	1	1	2.84E+02
Mercury	mouse	NOAEL, diet, 20 mo., mortality, liver and kidney histology,	Sample et al. 1996	1.32E+01	0.1	1	0.1	1.32E+02
Nickel	rat	LOAEL, diet, 3 generations, reproduction	Sample et al. 1996	8.00E+01	1	1	1	8.00E+01
Selenium	rat	LOAEL, water, 1 yr througth 2 generations, reproduction	Sample et al. 1996	3.30E-01	1	1	1	3.30E-01
Silver	mouse	LOAEL, water, 125 day, decr in activity	ATSDR 1990	1.81E+01	1	1	1	1.81E+01
Thallium	rat	LOAEL, water, 60 days, reproduction	Sample et al. 1996	7.40E-01	1	1	1	7.40E-01
Vanadium	rat	LOAEL, oral intubation, 60 days (critical lifestage), reproduction	Sample et al. 1996	2.10E+00	1	1	1	2.10E+00
Zinc	rat	LOAEL, oral in diet, 1-16d (critical lifestage)	Sample et al. 1996	3.20E+02	1	1	1	3.20E+02

1 CF = conversion factor.
2 The toxicity reference value was derived by dividing the effect dose by the total conversion factor.

TABLE M.44
Toxicity Reference Values for Surface Water COPCs - Largemouth Bass
SEAD 12
Seneca Army Depot, NY

Surface Water:

Constituent	Test Organism	Endpoint/Duration/Effect	Source	Effect Dose (mg/L)	Endpoint CF[1]	Study Duration CF[1]	Total CF[1]	TRV[2] (mg/L)
Semivolatiles								
Bis(2-ethylhexyl)phthalate	Inland silverside (Menidia beryllina)	survival / 96hr / NOEC	Horne et al. 1983	7.50E+01	1	1	1	7.50E+01
Pesticides								
Delta-BHC	bluegill (Lepomis macrochirus)	survival / 96hr / NOEC	AQUIRE 1997	7.90E-01	1	1	1	7.90E-01
Heptachlor	Micropterus salmoides Largemouth bass	survival / 96hr / LC50	AQUIRE 1997	1.00E-02	10	10	100	1.00E-04
Hexachlorobenzene		No data available						No data
Metals								
Aluminum	Mosquitofish (*Gambusia affinis*)	Survival / 1 day / LC50	AQUIRE 1999	1.11E+02	10	10	100	1.11E+00
Barium	Sheepshead minnow (*Cyprinodon variegatus*)	Survival / 4 days / NOEC	AQUIRE 1999	5.00E+01	1	10	10	5.00E+00
Cobalt	Zebra danio (*Brachy danio*)	Survival / 13 day / NOEC	AQUIRE 1999	6.00E-02	1	10	10	6.00E-03
Copper	Snake-head catfish (*Channa striata*)	Survival / 3mo / LC50	AQUIRE 1997	1.24E+01	10	1	10	1.24E+00
Iron	Fathead minnow (*Pimephales promelas*)	Survival, growth, repreduction / 12 month / NOAEL	Smith et al. 1973	1.50E+00	1	1	1	1.50E+00
Lead	Snake-head catfish (*Channa striata*)	Survival / 3mo / LC50	AQUIRE 1997	5.85E+01	10	1	10	5.85E+00
Manganese	Longfin dace (*Agosia chrysogaster*)	Survival / 96 hour / LC50	Lewis 1978	1.30E+02	10	10	100	1.30E+00
Mercury	Fathead minnow (Pimephales promelas)	survival / 6 week / LC50	NAS/NAE 1972	2.00E+02	1	1	1	2.00E+02
Silver	Fathead minnow (*Pimephales promelas*)	Survival / 10 week / NOEC	Ratte 1999	5.00E+00	1	1	1	5.00E+00

1 CF = conversion factor. Conversion factors are based on EPA Region IV guidance (USEPA 1997)
2 The toxicity reference value was derived by dividing the effect dose by the total conversion factor

TABLE M.44
Toxicity Reference Values for Surface Water COPCs - Largemouth Bass
SEAD 12
Seneca Army Depot, NY

Tissue:

Constituent	Tissue Concentration (mg/kg)	Effect	Test Organism	Source
Semi-vols				
Bis(2-ethylhexyl)phthalate	No data			
Pesticides				
Gamma BHC (Lindane)	1.5	NOED	Bluegill	ERED
Heptachlor	0.01	NOED	Spot	ERED
Hexachlorobenzene	No data			
Inorganics				
Aluminum	12.5	NOED	Brook Trout	ERED
Barium	No data			
Cobalt	No data			
Copper	3.92	NOED	Rainbow Trout	ERED
Iron	No data			
Lead	2.5	NOED	Brook Trout	ERED
Manganese	No data			
Mercury	0.14	NOED	Rainbow Trout	ERED
Silver	No data			

TABLE M.45
Adverse Effects Concentrations
REPTILES AND AMPHIBIANS

Surface Water:

Constituent	Group	Test Organism	Lifestage	Endpoint/Duration/Effect	Source	Effect Concentration (mg/L)
Semi-vols						
Bis(2-ethylhexyl)phthalate	Amphibian	No data available				No data
Pesticides						
Gamma BHC (Lindane)	Amphibian	Chorus frog	tadpole	LC50, 96 hour, survival	Sanders 1970	2.70E+00
Heptachlor	Amphibian	Fowler's woodhouse's toad	tadpole	LC50, 96 hour, survival		4.40E-01
Hexachlorobenzene	Amphibian	No data available				No data
Inorganics						
Aluminum	Amphibian	Eastern narrow-mouthed frog	embryo	LC50, acute, survival	US EPA 1988	5.00E-02
Barium	Amphibian	No data available				No data
Cobalt	Amphibian	No data available				No data
Copper	Amphibian	Northern leopard frog	embryo	LC50, 8 day, survival	Birge and Black 1979	5.00E-02
Iron	Amphibian	No data available				No data
Lead	Amphibian	Marbled salamanders	unknown	LC after 8 days, survival	Eisler 1988	1.40E+00
Manganese	Amphibian	No data available				No data
Mercury	Amphibian	Marbled salamanders	embryo	LC50, 96 hour, survival	Birge et al. 1979	1.08E-01
Silver	Amphibian	Leopard frog	embryo	LC50, acute, survival and development	Birge and Zuiderveen 1995	1.00E-02

No toxicity information could be located for harmful levels in amphibian tissues for the compounds detected in surface water.

TABLE M.46

Chemicals of Potential Concern Environmental Fate and Transport Properties
SEAD-12
Seneca Army Depot, NY

Chemical	Log Kow[1]	SP[2]		Small Mammal BAF[3]		Invertebrate BAF[3]	
Volatiles							
1,2,4-Trichlorobenzene	4.11	1.63E-01	Travis & Arms 1988 (logKow calc)	1.00E+00	default	1.00E+00	default
Acetone	-0.24	5.33E+01	Travis & Arms, 1988	3.90E-01	EPA 1995e in Sample et al., 1996	3.90E-01	EPA 1995e in Sample et al., 1996
Methyl butyl ketone	1.38	6.17E+00	Travis & Arms 1988 (logKow calc)	1.00E+00	default	1.00E+00	default
Total Xylenes	3.18	5.62E-01	Travis & Arms 1988 (logKow calc)	1.00E+00	default	6.00E+00	ATSDR 1990
Trichloroethene	2.60	1.22E+00	Travis & Arms 1988 (logKow calc)	1.00E+00	default	1.00E+00	default
PAHs							
2-Methylnaphthalene	4.11	1.63E-01	Travis & Arms 1988 (logKow calc)	5.90E-01	USEPA 1994 (BAP as surrogate)	3.42E-01	Beyer, 1990
Acenapthylene	4.07	1.72E-01	Travis & Arms 1988 (logKow calc)	5.90E-01	USEPA 1994 (BAP as surrogate)	1.00E+00	default
Benzo(a)anthracene	5.90	1.51E-02	Travis & Arms 1988 (logKow calc)	5.90E-01	USEPA 1994 (BAP as surrogate)	1.25E-01	Beyer 1990
Benzo(a)pyrene	6.04	1.02E+00	USEPA 1994	5.90E-01	USEPA 1994	4.50E+00	USEPA 1994
Benzo(b)fluoranthene	6.57	1.00E-02	Travis & Arms, 1988	5.90E-01	USEPA 1994 (BAP as surrogate)	3.20E-01	Beyer, 1990
Benzo(g,h,i)perylene	7.10	3.05E-03	Travis & Arms 1988 (logKow calc)	5.90E-01	USEPA 1994 (BAP as surrogate)	2.40E-01	Beyer, 1990
Benzo(k)fluoranthene	6.85	4.25E-03	Travis & Arms 1988 (logKow calc)	5.90E-01	USEPA 1994 (BAP as surrogate)	2.53E-01	Beyer, 1990
Chrysene	5.61	2.00E-02	Travis & Arms, 1988	5.90E-01	USEPA 1994 (BAP as surrogate)	1.75E-01	Beyer, 1990
Dibenz(a,h)anthracene	6.36	8.16E-03	Travis & Arms 1988 (logKow calc)	5.90E-01	USEPA 1994 (BAP as surrogate)	1.75E-01	Beyer, 1990
Fluoranthene	5.22	3.72E-02	Travis & Arms 1988 (logKow calc)	5.90E-01	USEPA 1994 (BAP as surrogate)	7.92E-01	Beyer, 1990
Fluorene	4.12	1.49E-01	Travis & Arms 1988 (logKow calc)	5.90E-01	USEPA 1994 (BAP as surrogate)	3.42E-01	Beyer, 1990
Indeno(1,2,3-cd)pyrene	7.70	1.37E-03	Travis & Arms 1988 (logKow calc)	5.90E-01	USEPA 1994 (BAP as surrogate)	4.19E-01	Beyer, 1990
Naphthalene	3.36	4.43E-01	Travis & Arms 1988 (logKow calc)	5.90E-01	USEPA 1994 (BAP as surrogate)	3.42E-01	Beyer, 1990
Phenanthrene	4.46	1.00E-01	Travis & Arms, 1988	5.90E-01	USEPA 1994 (BAP as surrogate)	1.22E-01	Beyer, 1990
Pyrene	5.09	4.43E-02	Travis & Arms 1988 (logKow calc)	5.90E-01	USEPA 1994 (BAP as surrogate)	9.20E-02	Beyer, 1990
Semi-volatiles							
4-Methylphenol	1.67	4.20E+00	Travis & Arms 1988 (logKow calc)	1.00E+00	default	1.00E+00	default
Bis(2-ethylhexyl)phthalate	4.20	1.00E-02	USEPA, 1994	1.50E+00	USEPA, 1994	1.20E+01	USEPA, 1994
Butylbenzylphthalate	4.78	1.00E+00	default	1.00E+00	default	1.00E+00	default
Carbazole	1.00	1.00E+00	default	1.00E+00	default	1.00E+00	default
Di-n-octylphthalate	9.20	1.60E-04	USEPA 1994	6.42E+02	USEPA 1994	4.90E+03	USEPA 1994
Dibenzofuran	4.17	1.51E-01	Travis & Arms 1988 (logKow calc)	1.00E+00	default	1.00E+00	default
Phenol	1.48	5.40E+00	Travis & Arms 1988 (logKow calc)	1.00E+00	default	1.00E+00	default
PCBs							
Arochlor 1254	6.47	1.00E-02	Travis & Arms, 1988	4.50E+00	USEPA, 1994	4.50E+00	USEPA, 1994
Arochlor 1260	6.91	3.93E-03	Travis & Arms 1988 (logKow calc)	7.00E+00	USEPA, 1995	5.50E+00	USEPA, 1995

TABLE M.46

Chemicals of Potential Concern Environmental Fate and Transport Properties
SEAD-12
Seneca Army Depot, NY

Chemical	Log Kow[1]	SP[2]		Small Mammal BAF[3]		Invertebrate BAF[3]	
Pesticides							
4,4'-DDD	5.99	1.34E-02	Travis & Arms 1988 (logKow calc)	1.00E-01	USEPA, 1994 (DDT as surrogate)	1.00E-01	USEPA, 1994 (DDT as surrogate)
4,4'-DDE	5.77	1.80E-02	Travis & Arms 1988 (logKow calc)	2.50E-02	Menzie et al., 1992	2.50E-02	Menzie et al., 1992
4,4'-DDT	5.90	1.00E-02	USEPA, 1994	1.00E-01	USEPA, 1994	1.00E-01	USEPA, 1994
BHC, alpha	3.28	3.00E-01	Bell 1992	1.00E+00	default	1.00E+00	default
Dieldrin	4.61	1.20E-01	USEPA, 1994	4.70E-02	USEPA, 1994	4.70E-02	USEPA, 1994
Endrin	4.56	5.80E-02	USEPA 1994	2.40E-02	USEPA, 1994	1.80E-01	USEPA, 1994
Metals							
Aluminum	NA	4.00E-03	Baes et al., 1984	1.50E-02	ATSDR, 1992	1.50E-02	ATSDR, 1992
Cadmium	NA	5.50E-01	NRC, 1992	2.15E-02	Ash & Lee, 1980	2.15E-02	Ash & Lee, 1980
Chromium	NA	7.50E-03	NRC, 1992	7.75E-01	Beyer & Cromartie, 1987	7.75E-01	Beyer & Cromartie, 1987
Copper	NA	4.00E-01	NRC, 1992	6.82E-01	MA et al. 1983	6.82E-01	MA et al. 1983
Iron	NA	4.00E-03	NRC, 1992	5.00E-02	Ash & Lee, 1980	5.00E-02	Ash & Lee, 1980
Lead	NA	5.80E-03	NRC 1992	2.10E+00	Ma et al. 1983	2.10E+00	Ma et al. 1983
Manganese	NA	5.60E-01	NRC 1992	1.00E+00	default	1.00E+00	default
Mercury	NA	9.00E-01	NRC 1992	2.30E+01	USEPA 1994	2.30E+01	USEPA 1994
Nickel	NA	2.80E-01	NRC 1992	1.00E+02	ATSDR 1992	1.00E+02	ATSDR 1992
Selenium	NA	6.20E+00	USEPA 1992	5.00E+00	Beyer and Cromartie 1987	5.00E+00	Beyer and Cromartie 1987
Silver	NA	3.00E-04	NRC, 1992	5.00E-01	Blanchet and Woodard, 1997	2.60E+00	ATSDR, 1990
Thallium	NA	4.00E-03	NRC 1992	2.33E-01	Blanchet and Woodard 1997	2.33E-01	Blanchet and Woodard 1997
Vanadium	NA	1.00E-02	Baes et al., 1984	1.00E+00	Default	1.00E+00	Default
Zinc	NA	1.40E+00	NRC, 1992	9.90E+00	Beyer & Cromartie, 1987	9.90E+00	Beyer & Cromartie, 1987

1 Logarithmic value of octonol-water partition coefficient. Montgomery, J.H. and L.M. Welkom, *Groundwater Chemicals Desk Reference*, 1989.
2 Soil to plant uptake factor
3 Bioaccumulation factor

TABLE M.47
Wildlife Intake Rates - All Receptors
SEAD-12
Seneca Army Depot, NY

Receptor	Body Weight (kg)	Trophic Level[1]	Foraging Factor[2]	Dietary Breakdown			
				Plant (kg/day)	Animal (kg/day)	Soil (kg/day)	Surface Water (L/day)
Short-tailed shrew[3]	0.015	3	1	0.00155	0.00751	0.000022	--
Meadow vole[4]	0.05	2	1	0.0001031	0.0000115	0.00006	--
Red-tailed Hawk[5]	1.24	4	1	0	0.136	--	--
Great Blue Heron[6]	2.39	3	1	<0.00001	0.42	0.03066 (Sediment)	0.1058
Mourning dove[7]	0.157	2	1	0.00925	0.00150	0.00125	--

1 Trophic level: organisms are assigned to trophic levels of 1 (producer), 2 (herbivore), 3 (1st order carnivore), and 4 (top carnivore) within the food web.

2 Foraging factor: adjustment factor (from 0 to 1) based upon an organism's total time of exposure to unit-based contaminants. For this preliminary risk assessment stage, a foraging factor of 1 was assigned to each receptor, even though the foraging area may be greater than the size of the site.

3 Body weight and dietary intake from USEPA (1997).

4 Body weight and dietary intake from USEPA (1997).

5 Wildlife Exposure Factors Handbook, USEPA 1997 and Sample et al., 1996.

6 Great blue heron body weight and diet from Sample et al (1996).

7 Mourning dove body weight and plant matter and animal matter ingestion rates based on northern bobwhite in USEPA (1993); soil

TABLE M.48
Calculated Surface Soil (0-1' bls) Exposure - Meadow Vole
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)
Volatiles						
Acetone	5.20E-02	9.07E-03	5.33E+01	3.90E-01	5.78E-03	1.01E-03
Methyl butyl ketone	1.00E-03	5.57E-03	6.17E+00	1.00E+00	1.42E-05	7.88E-05
PAHs						
Benzo(a)anthracene	2.70E-02	2.98E-02	1.51E-02	1.25E-01	3.40E-05	3.75E-05
Benzo(b)fluoranthene	3.60E-02	2.97E-02	1.00E-02	3.20E-01	4.66E-05	3.84E-05
Benzo(g,h,i)perylene	2.30E-02	2.97E-02	3.05E-03	2.40E-01	2.90E-05	3.75E-05
Benzo(k)fluoranthene	2.60E-02	3.20E-02	4.25E-03	2.53E-01	3.29E-05	4.06E-05
Chrysene	5.10E-02	2.76E-02	2.00E-02	1.75E-01	6.54E-05	3.53E-05
Dibenz(a,h)anthracene	1.60E-02	3.55E-02	8.16E-03	1.75E-01	2.01E-05	4.47E-05
Fluorene	5.40E-03	3.71E-02	1.49E-01	3.42E-01	8.56E-06	5.88E-05
Indeno(1,2,3-cd)pyrene	1.80E-02	3.15E-02	1.37E-03	4.19E-01	2.34E-05	4.10E-05
Semi-volatiles						
Bis(2-ethylhexyl)phthalate	2.10E-01	4.68E-02	1.00E-02	1.20E+01	8.36E-04	1.86E-04
Butylbenzylphthalate	6.70E-03	3.72E-02	1.00E+00	1.00E+00	2.34E-05	1.30E-04
Carbazole	1.60E-02	3.78E-02	1.00E+00	1.00E+00	5.59E-05	1.32E-04
Di-n-octylphthalate	7.80E-03	3.52E-02	1.60E-04	4.90E+03	8.80E-03	3.97E-02
Dibenzofuran	5.60E-03	3.71E-02	1.51E-01	1.00E+00	9.75E-06	6.46E-05
PCBs						
Arochlor 1254	6.70E-01	9.14E-02	1.00E-02	4.50E+00	1.51E-03	2.06E-04
Pesticides						
4,4'-DDE	1.50E-02	3.04E-03	1.80E-02	2.50E-02	1.86E-05	3.77E-06

TABLE M.48
Calculated Surface Soil (0-1' bls) Exposure - Meadow Vole
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)
4,4'-DDT	4.20E-02	4.64E-03	1.00E-02	1.00E-01	5.22E-05	5.77E-06
Dieldrin	1.40E-02	3.04E-03	1.20E-01	4.70E-02	2.04E-05	4.43E-06
Endrin	4.20E-03	2.17E-03	5.80E-02	1.80E-01	5.72E-06	2.95E-06
Metals						
Aluminum	1.58E+04	1.11E+04	4.00E-03	1.50E-02	1.90E+01	1.34E+01
Cadmium	3.20E+00	3.29E-01	5.50E-01	2.15E-02	4.58E-03	4.71E-04
Chromium	2.33E+01	1.72E+01	7.50E-03	7.75E-01	3.22E-02	2.37E-02
Iron	2.71E+04	2.09E+04	4.00E-03	5.00E-02	3.29E+01	2.54E+01
Manganese	1.42E+03	6.36E+02	5.60E-01	1.00E+00	2.36E+00	1.06E+00
Mercury	1.10E-01	4.13E-02	9.00E-01	2.30E+01	7.55E-04	2.84E-04
Nickel	3.99E+01	2.43E+01	2.80E-01	1.00E+02	9.70E-01	5.91E-01
Selenium	2.30E+00	5.63E-01	6.20E+00	5.00E+00	1.13E-02	2.76E-03
Thallium	1.80E+00	8.84E-01	4.00E-03	2.33E-01	2.26E-03	1.11E-03
Vanadium	2.40E+01	1.86E+01	1.00E-02	1.00E+00	3.44E-02	2.67E-02
Zinc	8.37E+01	5.99E+01	1.40E+00	9.90E+00	3.39E-01	2.43E-01

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW

Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.0001031 kg/day) (from Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.0000115 kg/day) (Table M.46)
Is = incidental soil intake rate (0.00006 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.05 kg) (Table M.46)

TABLE M.49
Calculated Mixed Soil (0-4' bls) Exposure - Meadow Vole
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)
Volatiles						
Acetone	5.20E-02	8.85E-03	5.33E+01	3.90E-01	5.78E-03	9.84E-04
Methyl butyl ketone	1.00E-03	6.00E-03	6.17E+00	1.00E+00	1.42E-05	8.49E-05
Total Xylenes	5.20E-01	2.82E-02	5.62E-01	6.00E+00	1.94E-03	1.06E-04
Trichloroethene	2.60E-02	6.85E-03	1.22E+00	1.00E+00	1.02E-04	2.70E-05
PAHs						
2-Methylnaphthalene	5.60E-02	4.62E-02	1.63E-01	3.42E-01	9.04E-05	7.46E-05
Acenapthylene	3.30E-02	4.59E-02	1.72E-01	1.00E+00	5.89E-05	8.19E-05
Benzo(a)anthracene	1.80E-01	3.82E-02	1.51E-02	1.25E-01	2.27E-04	4.82E-05
Benzo(a)pyrene	2.00E-01	3.94E-02	1.02E+00	4.50E+00	8.68E-04	1.71E-04
Benzo(b)fluoranthene	1.90E-01	3.89E-02	1.00E-02	3.20E-01	2.46E-04	5.04E-05
Benzo(g,h,i)perylene	1.20E-01	4.34E-02	3.05E-03	2.40E-01	1.51E-04	5.47E-05
Benzo(k)fluoranthene	1.60E-01	3.93E-02	4.25E-03	2.53E-01	2.03E-04	4.98E-05
Chrysene	2.40E-01	3.97E-02	2.00E-02	1.75E-01	3.08E-04	5.09E-05
Dibenz(a,h)anthracene	5.70E-02	4.44E-02	8.16E-03	1.75E-01	7.17E-05	5.58E-05
Fluoranthene	4.20E-01	4.24E-02	3.72E-02	7.92E-01	6.13E-04	6.18E-05
Fluorene	5.20E-02	4.53E-02	1.49E-01	3.42E-01	8.24E-05	7.17E-05
Indeno(1,2,3-cd)pyrene	1.20E-01	4.46E-02	1.37E-03	4.19E-01	1.56E-04	5.79E-05
Naphthalene	6.00E-01	7.72E-02	4.43E-01	3.42E-01	1.31E-03	1.69E-04
Phenanthrene	3.40E-01	4.46E-02	1.00E-01	1.22E-01	4.88E-04	6.40E-05
Pyrene	3.80E-01	4.36E-02	4.43E-02	9.20E-02	4.99E-04	5.73E-05
Semi-volatiles						
4-Methylphenol	1.40E-01	5.01E-02	4.20E+00	1.00E+00	1.41E-03	5.05E-04
bis(2-Ethylhexyl)phthalate	9.30E-01	1.27E-01	1.00E-02	1.20E+01	3.70E-03	5.05E-04
Butylbenzylphthalate	6.70E-03	5.13E-02	1.00E+00	1.00E+00	2.34E-05	1.79E-04
Carbazole	1.60E-02	5.17E-02	1.00E+00	1.00E+00	5.59E-05	1.81E-04
Di-n-octylphthalate	7.90E-03	4.70E-02	1.60E-04	4.90E+03	8.91E-03	5.30E-02
Dibenzofuran	5.60E-03	5.13E-02	1.51E-01	1.00E+00	9.75E-06	8.92E-05
Phenol	3.00E-01	5.09E-02	5.40E+00	1.00E+00	3.77E-03	6.40E-04
PCBs						

TABLE M.49
Calculated Mixed Soil (0-4' bls) Exposure - Meadow Vole
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)
Aroclor 1254	3.00E+00	1.99E-01	1.00E-02	4.50E+00	6.77E-03	4.50E-04
Pesticides						
4,4'-DDE	4.20E-02	4.40E-03	1.80E-02	2.50E-02	5.22E-05	5.47E-06
4,4'-DDT	4.20E-02	3.89E-03	1.00E-02	1.00E-01	5.22E-05	4.84E-06
BHC, alpha	2.80E-03	1.19E-03	3.00E-01	1.00E+00	5.74E-06	2.44E-06
Dieldrin	4.00E-02	4.30E-03	1.20E-01	4.70E-02	5.83E-05	6.27E-06
Endrin	1.60E-02	2.69E-03	5.80E-02	1.80E-01	2.18E-05	3.66E-06
Metals						
Aluminum	1.58E+04	1.09E+04	4.00E-03	1.50E-02	1.90E+01	1.31E+01
Cadmium	9.43E+01	4.93E+00	5.50E-01	2.15E-02	1.35E-01	7.06E-03
Chromium	8.33E+01	2.16E+01	7.50E-03	7.75E-01	1.15E-01	2.98E-02
Copper	2.15E+02	2.93E+01	4.00E-01	6.82E-01	3.27E-01	4.46E-02
Iron	2.71E+04	2.10E+04	4.00E-03	5.00E-02	3.29E+01	2.55E+01
Lead	3.66E+02	2.94E+01	5.80E-03	2.10E+00	6.17E-01	4.96E-02
Manganese	1.42E+03	5.83E+02	5.60E-01	1.00E+00	2.36E+00	9.69E-01
Mercury	1.10E-01	3.85E-02	9.00E-01	2.30E+01	7.55E-04	2.64E-04
Nickel	4.25E+01	2.54E+01	2.80E-01	1.00E+02	1.03E+00	6.18E-01
Selenium	2.30E+00	5.66E-01	6.20E+00	5.00E+00	1.13E-02	2.78E-03
Silver	1.19E+01	6.65E-01	3.00E-04	2.60E+00	2.14E-02	1.20E-03
Thallium	1.80E+00	7.60E-01	4.00E-03	2.33E-01	2.26E-03	9.54E-04
Vanadium	2.40E+01	1.82E+01	1.00E-02	1.00E+00	3.44E-02	2.61E-02
Zinc	2.85E+02	7.28E+01	1.40E+00	9.90E+00	1.16E+00	2.95E-01

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW

Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.0000115 kg/day) (Table M.46)
Is = incidental soil intake rate (0.00006 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.05 kg) (Table M.46)

TABLE M.49
Calculated Mixed Soil (0-4' bls) Exposure - Meadow Vole
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)

Ip = plant-matter intake rate (0.0001031 kg/day) (from Table M.46)

TABLE M.50
Calculated Surface Soil (0-1' bls) Hazard Quotients - Meadow Vole
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Vole Max Exposure1 (mg/kg/day)	Vole Mean Exposure1 (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	5.78E-03	1.01E-03	1.00E+02	5.00E+02	5.8E-05	1.0E-05	1.2E-05	2.0E-06
Methyl butyl ketone*	1.42E-05	7.88E-05	No data	No data	--	--	--	--
PAHs								
Benzo(a)anthracene*	3.40E-05	3.75E-05	1.00E+00	1.00E+01	3.4E-05	3.7E-05	3.4E-06	3.7E-06
Benzo(b)fluoranthene	4.66E-05	3.84E-05	1.00E+00	1.00E+01	4.7E-05	3.8E-05	4.7E-06	3.8E-06
Benzo(g,h,i)perylene*	2.90E-05	3.75E-05	1.00E+00	1.00E+01	2.9E-05	3.7E-05	2.9E-06	3.7E-06
Benzo(k)fluoranthene*	3.29E-05	4.06E-05	1.00E+00	1.00E+01	3.3E-05	4.1E-05	3.3E-06	4.1E-06
Chrysene	6.54E-05	3.53E-05	1.00E+00	1.00E+01	6.5E-05	3.5E-05	6.5E-06	3.5E-06
Dibenz(a,h)anthracene*	2.01E-05	4.47E-05	1.00E+00	1.00E+01	2.0E-05	4.5E-05	2.0E-06	4.5E-06
Fluorene*	8.56E-06	5.88E-05	1.25E+01	1.25E+02	6.8E-07	4.7E-06	6.8E-08	4.7E-07
Indeno(1,2,3-cd)pyrene*	2.34E-05	4.10E-05	1.00E+00	1.00E+01	2.3E-05	4.1E-05	2.3E-06	4.1E-06
Semi-volatiles								
Bis(2-ethylhexyl)phthalate	8.36E-04	1.86E-04	1.83E+01	1.83E+02	4.6E-05	1.0E-05	4.6E-06	1.0E-06
Butylbenzylphthalate*	2.34E-05	1.30E-04	1.59E+02	4.70E+02	1.5E-07	8.2E-07	5.0E-08	2.8E-07
Carbazole*	5.59E-05	1.32E-04	5.00E+00	5.00E+00	1.1E-05	2.6E-05	1.1E-05	2.6E-05
Di-n-octylphthalate*	8.80E-03	3.97E-02	6.51E+01	6.51E+01	1.4E-04	6.1E-04	1.4E-04	6.1E-04
Dibenzofuran*	9.75E-06	6.46E-05	No data	No data	--	--	--	--
PCBs								
Aroclor 1254	1.51E-03	2.06E-04	6.80E-02	6.80E-01	2.2E-02	3.0E-03	2.2E-03	3.0E-04
Pesticides								
4,4'-DDE	1.86E-05	3.77E-06	8.00E-01	4.00E+00	2.3E-05	4.7E-06	4.7E-06	9.4E-07
4,4'-DDT	5.22E-05	5.77E-06	8.00E-01	4.00E+00	6.5E-05	7.2E-06	1.3E-05	1.4E-06
Dieldrin	2.04E-05	4.43E-06	2.00E-02	2.00E-01	1.0E-03	2.2E-04	1.0E-04	2.2E-05
Endrin	5.72E-06	2.95E-06	9.20E-02	9.20E-01	6.2E-05	3.2E-05	6.2E-06	3.2E-06
Metals								
Aluminum	1.90E+01	1.34E+01	1.93E+00	1.93E+01	**9.9E+00**	**6.9E+00**	9.9E-01	6.9E-01
Cadmium	4.58E-03	4.71E-04	1.00E+00	1.00E+01	4.6E-03	4.7E-04	4.6E-04	4.7E-05

TABLE M.50
Calculated Surface Soil (0-1' bls) Hazard Quotients - Meadow Vole
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Vole Max Exposure1 (mg/kg/day)	Vole Mean Exposure1 (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Chromium	3.22E-02	2.37E-02	2.74E+03	2.74E+04	1.2E-05	8.6E-06	1.2E-06	8.6E-07
Iron	3.29E+01	2.54E+01	2.55E+01	2.55E+01	**1.3E+00**	1.0E+00	**1.3E+00**	1.0E+00
Manganese	2.36E+00	1.06E+00	8.80E+01	2.84E+02	2.7E-02	1.2E-02	8.3E-03	3.7E-03
Mercury	7.55E-04	2.84E-04	1.32E+01	1.32E+02	5.7E-05	2.1E-05	5.7E-06	2.1E-06
Nickel	9.70E-01	5.91E-01	4.00E+01	8.00E+01	2.4E-02	1.5E-02	1.2E-02	7.4E-03
Selenium	1.13E-02	2.76E-03	2.00E-01	3.30E-01	5.6E-02	1.4E-02	3.4E-02	8.4E-03
Thallium	2.26E-03	1.11E-03	7.40E-02	7.40E-01	3.1E-02	1.5E-02	3.1E-03	1.5E-03
Vanadium	3.44E-02	2.67E-02	2.10E-01	2.10E+00	1.6E-01	1.3E-01	1.6E-02	1.3E-02
Zinc	3.39E-01	2.43E-01	1.60E+02	3.20E+02	2.1E-03	1.5E-03	1.1E-03	7.6E-04

1 Receptor exposure from Table M48
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ > 1.
* Mean is greater than the maximum because of using 1/2 detection limit to calculate.

TABLE M.51
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Meadow Vole
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Vole Max Exposure1 (mg/kg/day)	Vole Mean Exposure1 (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	5.78E-03	9.84E-04	1.00E+02	5.00E+02	5.8E-05	9.8E-06	1.2E-05	2.0E-06
Methyl butyl ketone*	1.42E-05	8.49E-05	No data	No data	--	--	--	--
Total Xylenes	1.94E-03	1.06E-04	2.10E+00	2.06E+03	9.3E-04	5.0E-05	9.4E-07	5.1E-08
Trichloroethene	1.02E-04	2.70E-05	7.00E-01	7.00E+00	1.5E-04	3.9E-05	1.5E-05	3.9E-06
PAHs								
2-Methylnaphthalene	9.04E-05	7.46E-05	7.16E+00	7.16E+01	1.3E-05	1.0E-05	1.3E-06	1.0E-06
Acenapthylene*	5.89E-05	8.19E-05	1.00E+00	1.00E+01	5.9E-05	8.2E-05	5.9E-06	8.2E-06
Benzo(a)anthracene	2.27E-04	4.82E-05	1.00E+00	1.00E+01	2.3E-04	4.8E-05	2.3E-05	4.8E-06
Benzo(a)pyrene	8.68E-04	1.71E-04	1.00E+00	1.00E+01	8.7E-04	1.7E-04	8.7E-05	1.7E-05
Benzo(b)fluoranthene	2.46E-04	5.04E-05	1.00E+00	1.00E+01	2.5E-04	5.0E-05	2.5E-05	5.0E-06
Benzo(g,h,i)perylene	1.51E-04	5.47E-05	1.00E+00	1.00E+01	1.5E-04	5.5E-05	1.5E-05	5.5E-06
Benzo(k)fluoranthene	2.03E-04	4.98E-05	1.00E+00	1.00E+01	2.0E-04	5.0E-05	2.0E-05	5.0E-06
Chrysene	3.08E-04	5.09E-05	1.00E+00	1.00E+01	3.1E-04	5.1E-05	3.1E-05	5.1E-06
Dibenz(a,h)anthracene	7.17E-05	5.58E-05	1.00E+00	1.00E+01	7.2E-05	5.6E-05	7.2E-06	5.6E-06
Fluoranthene	6.13E-04	6.18E-05	1.25E+01	1.25E+02	4.9E-05	4.9E-06	4.9E-06	4.9E-07
Fluorene	8.24E-05	7.17E-05	1.25E+01	1.25E+02	6.6E-06	5.7E-06	6.6E-07	5.7E-07
Indeno(1,2,3-cd)pyrene	1.56E-04	5.79E-05	1.00E+00	1.00E+01	1.6E-04	5.8E-05	1.6E-05	5.8E-06
Naphthalene	1.31E-03	1.69E-04	7.16E+00	7.16E+01	1.8E-04	2.4E-05	1.8E-05	2.4E-06
Phenanthrene	4.88E-04	6.40E-05	1.00E+00	1.00E+01	4.9E-04	6.4E-05	4.9E-05	6.4E-06
Pyrene	4.99E-04	5.73E-05	1.00E+00	1.00E+01	5.0E-04	5.7E-05	5.0E-05	5.7E-06
Semi-volatiles								
4-Methylphenol	1.41E-03	5.05E-04	2.19E+02	2.19E+02	6.4E-06	2.3E-06	6.4E-06	2.3E-06
bis(2-Ethylhexyl)phthalate	3.70E-03	5.05E-04	1.83E+01	1.83E+02	2.0E-04	2.8E-05	2.0E-05	2.8E-06
Butylbenzylphthalate*	2.34E-05	1.79E-04	1.59E+02	4.70E+02	1.5E-07	1.1E-06	5.0E-08	3.8E-07
Carbazole*	5.59E-05	1.81E-04	5.00E+00	5.00E+00	1.1E-05	3.6E-05	1.1E-05	3.6E-05
Di-n-octylphthalate*	8.91E-03	5.30E-02	6.51E+01	6.51E+01	1.4E-04	8.1E-04	1.4E-04	8.1E-04
Dibenzofuran*	9.75E-06	8.92E-05	No data	No data	--	--	--	--
Phenol	3.77E-03	6.40E-04	No data	No data	--	--	--	--

TABLE M.51
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Meadow Vole
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Vole Max Exposure1 (mg/kg/day)	Vole Mean Exposure1 (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
PCBs								
Aroclor 1254	6.77E-03	4.50E-04	6.80E-02	6.80E-01	1.0E-01	6.6E-03	1.0E-02	6.6E-04
Pesticides								
4,4'-DDE	5.22E-05	5.47E-06	8.00E-01	4.00E+00	6.5E-05	6.8E-06	1.3E-05	1.4E-06
4,4'-DDT	5.22E-05	4.84E-06	8.00E-01	4.00E+00	6.5E-05	6.0E-06	1.3E-05	1.2E-06
BHC, alpha	5.74E-06	2.44E-06	1.60E+00	3.20E+00	3.6E-06	1.5E-06	1.8E-06	7.6E-07
Dieldrin	5.83E-05	6.27E-06	2.00E-02	2.00E-01	2.9E-03	3.1E-04	2.9E-04	3.1E-05
Endrin	2.18E-05	3.66E-06	9.20E-02	9.20E-01	2.4E-04	4.0E-05	2.4E-05	4.0E-06
Metals								
Aluminum	1.90E+01	1.31E+01	1.93E+00	1.93E+01	**9.9E+00**	**6.8E+00**	9.9E-01	6.8E-01
Cadmium	1.35E-01	7.06E-03	1.00E+00	1.00E+01	1.4E-01	7.1E-03	1.4E-02	7.1E-04
Chromium	1.15E-01	2.98E-02	2.74E+03	2.74E+04	4.2E-05	1.1E-05	4.2E-06	1.1E-06
Copper	3.27E-01	4.46E-02	1.40E+01	2.80E+01	2.3E-02	3.2E-03	1.2E-02	1.6E-03
Iron	3.29E+01	2.55E+01	2.55E+01	2.55E+01	**1.3E+00**	1.0E+00	**1.3E+00**	1.0E+00
Lead	6.17E-01	4.96E-02	8.00E+00	8.00E+01	7.7E-02	6.2E-03	7.7E-03	6.2E-04
Manganese	2.36E+00	9.69E-01	8.80E+01	2.84E+02	2.7E-02	1.1E-02	8.3E-03	3.4E-03
Mercury	7.55E-04	2.64E-04	1.32E+01	1.32E+02	5.7E-05	2.0E-05	5.7E-06	2.0E-06
Nickel	1.03E+00	6.18E-01	4.00E+01	8.00E+01	2.6E-02	1.5E-02	1.3E-02	7.7E-03
Selenium	1.13E-02	2.78E-03	2.00E-01	3.30E-01	5.6E-02	1.4E-02	3.4E-02	8.4E-03
Silver	2.14E-02	1.20E-03	1.81E+00	1.81E+01	1.2E-02	6.6E-04	1.2E-03	6.6E-05
Thallium	2.26E-03	9.54E-04	7.40E-02	7.40E-01	3.1E-02	1.3E-02	3.1E-03	1.3E-03
Vanadium	3.44E-02	2.61E-02	2.10E-01	2.10E+00	1.6E-01	1.2E-01	1.6E-02	1.2E-02
Zinc	1.16E+00	2.95E-01	1.60E+02	3.20E+02	7.2E-03	1.8E-03	3.6E-03	9.2E-04

1 Receptor exposure from Table M.49
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ > 1.
* Mean is greater than the maximum because of using 1/2 detection limit to calculate.

TABLE M.52
Calculated Surface Soil (0-1' bls) Exposure - Short-tailed Shrew
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	Mean > Max?	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Volatiles							
Acetone	5.20E-02	9.07E-03	No	5.33E+01	3.90E-01	2.97E-01	5.17E-02
Methyl butyl ketone	1.00E-03	5.57E-03	Yes	6.17E+00	1.00E+00	1.14E-03	6.34E-03
PAHs							
Benzo(a)anthracene	2.70E-02	2.98E-02	Yes	1.51E-02	1.25E-01	1.77E-03	1.95E-03
Benzo(b)fluoranthene	3.60E-02	2.97E-02	No	1.00E-02	3.20E-01	5.86E-03	4.83E-03
Benzo(g,h,i)perylene	2.30E-02	2.97E-02	Yes	3.05E-03	2.40E-01	2.80E-03	3.62E-03
Benzo(k)fluoranthene	2.60E-02	3.20E-02	Yes	4.25E-03	2.53E-01	3.34E-03	4.12E-03
Chrysene	5.10E-02	2.76E-02	No	2.00E-02	1.75E-01	4.65E-03	2.51E-03
Dibenz(a,h)anthracene	1.60E-02	3.55E-02	Yes	8.16E-03	1.75E-01	1.44E-03	3.19E-03
Fluorene	5.40E-03	3.71E-02	Yes	1.49E-01	3.42E-01	1.02E-03	6.98E-03
Indeno(1,2,3-cd)pyrene	1.80E-02	3.15E-02	Yes	1.37E-03	4.19E-01	3.80E-03	6.66E-03
Semi-volatiles							
Bis(2-ethylhexyl)phthalate	2.10E-01	4.68E-02	No	1.00E-02	1.20E+01	1.26E+00	2.81E-01
Butylbenzylphthalate	6.70E-03	3.72E-02	Yes	1.00E+00	1.00E+00	4.06E-03	2.25E-02
Carbazole	1.60E-02	3.78E-02	Yes	1.00E+00	1.00E+00	9.69E-03	2.29E-02
Di-n-octylphthalate	7.80E-03	3.52E-02	Yes	1.60E-04	4.90E+03	1.91E+01	8.63E+01
Dibenzofuran	5.60E-03	3.71E-02	Yes	1.51E-01	1.00E+00	2.90E-03	1.92E-02
PCBs							
Arochlor 1254	6.70E-01	9.14E-02	No	1.00E-02	4.50E+00	1.51E+00	2.06E-01
Pesticides							
4,4'-DDE	1.50E-02	3.04E-03	No	1.80E-02	2.50E-02	2.38E-04	4.81E-05

TABLE M.52
Calculated Surface Soil (0-1' bls) Exposure - Short-tailed Shrew
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	Mean > Max?	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
4,4'-DDT	4.20E-02	4.64E-03	No	1.00E-02	1.00E-01	2.21E-03	2.44E-04
Dieldrin	1.40E-02	3.04E-03	No	1.20E-01	4.70E-02	5.24E-04	1.14E-04
Endrin	4.20E-03	2.17E-03	No	5.80E-02	1.80E-01	4.10E-04	2.12E-04
Metals							
Aluminum	1.58E+04	1.11E+04	No	4.00E-03	1.50E-02	1.43E+02	1.01E+02
Cadmium	3.20E+00	3.29E-01	No	5.50E-01	2.15E-02	7.55E-02	7.76E-03
Chromium	2.33E+01	1.72E+01	No	7.50E-03	7.75E-01	9.08E+00	6.68E+00
Iron	2.71E+04	2.09E+04	No	4.00E-03	5.00E-02	7.20E+02	5.56E+02
Manganese	1.42E+03	6.36E+02	No	5.60E-01	1.00E+00	7.29E+02	3.27E+02
Mercury	1.10E-01	4.13E-02	No	9.00E-01	2.30E+01	1.27E+00	4.77E-01
Nickel	3.99E+01	2.43E+01	No	2.80E-01	1.00E+02	2.00E+03	1.22E+03
Selenium	2.30E+00	5.63E-01	No	6.20E+00	5.00E+00	6.06E+00	1.48E+00
Thallium	1.80E+00	8.84E-01	No	4.00E-03	2.33E-01	2.13E-01	1.04E-01
Vanadium	2.40E+01	1.86E+01	No	1.00E-02	1.00E+00	1.21E+01	9.36E+00
Zinc	8.37E+01	5.99E+01	No	1.40E+00	9.90E+00	4.17E+02	2.99E+02

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as
ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW
Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2)
(inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.00155 kg/day) (from Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.00751 kg/day) (Table M.46)
Is = incidental soil intake rate (0.000022 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.015 kg) (Table M.46)

TABLE M.53
Calculated Mixed Soil (0-4' bls) Exposure - Short-tailed Shrew
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	Mean > Max?	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Volatiles							
Acetone	5.20E-02	8.85E-03	No	5.33E+01	3.90E-01	2.97E-01	5.05E-02
Methyl butyl ketone	1.00E-03	6.00E-03	Yes	6.17E+00	1.00E+00	1.14E-03	6.84E-03
Total Xylenes	5.20E-01	2.82E-02	No	5.62E-01	6.00E+00	1.59E+00	8.64E-02
Trichloroethene	2.60E-02	6.85E-03	No	1.22E+00	1.00E+00	1.63E-02	4.30E-03
PAHs							
2-Methylnaphthalene	5.60E-02	4.62E-02	No	1.63E-01	3.42E-01	1.06E-02	8.75E-03
Acenapthylene	3.30E-02	4.59E-02	Yes	1.72E-01	1.00E+00	1.72E-02	2.39E-02
Benzo(a)anthracene	1.80E-01	3.82E-02	No	1.51E-02	1.25E-01	1.18E-02	2.51E-03
Benzo(a)pyrene	2.00E-01	3.94E-02	No	1.02E+00	4.50E+00	4.72E-01	9.31E-02
Benzo(b)fluoranthene	1.90E-01	3.89E-02	No	1.00E-02	3.20E-01	3.09E-02	6.34E-03
Benzo(g,h,i)perylene	1.20E-01	4.34E-02	No	3.05E-03	2.40E-01	1.46E-02	5.29E-03
Benzo(k)fluoranthene	1.60E-01	3.93E-02	No	4.25E-03	2.53E-01	2.06E-02	5.06E-03
Chrysene	2.40E-01	3.97E-02	No	2.00E-02	1.75E-01	2.19E-02	3.62E-03
Dibenz(a,h)anthracene	5.70E-02	4.44E-02	No	8.16E-03	1.75E-01	5.13E-03	4.00E-03
Fluoranthene	4.20E-01	4.24E-02	No	3.72E-02	7.92E-01	1.69E-01	1.70E-02
Fluorene	5.20E-02	4.53E-02	No	1.49E-01	3.42E-01	9.78E-03	8.51E-03
Indeno(1,2,3-cd)pyrene	1.20E-01	4.46E-02	No	1.37E-03	4.19E-01	2.54E-02	9.42E-03
Naphthalene	6.00E-01	7.72E-02	No	4.43E-01	3.42E-01	1.31E-01	1.69E-02
Phenanthrene	3.40E-01	4.46E-02	No	1.00E-01	1.22E-01	2.48E-02	3.25E-03
Pyrene	3.80E-01	4.36E-02	No	4.43E-02	9.20E-02	1.98E-02	2.27E-03
Semi-volatiles							
4-Methylphenol	1.40E-01	5.01E-02	No	4.20E+00	1.00E+00	1.31E-01	4.69E-02
bis(2-Ethylhexyl)phthalate	9.30E-01	1.27E-01	No	1.00E-02	1.20E+01	5.59E+00	7.62E-01
Butylbenzylphthalate	6.70E-03	5.13E-02	Yes	1.00E+00	1.00E+00	4.06E-03	3.11E-02
Carbazole	1.60E-02	5.17E-02	Yes	1.00E+00	1.00E+00	9.69E-03	3.13E-02
Di-n-octylphthalate	7.90E-03	4.70E-02	Yes	1.60E-04	4.90E+03	1.94E+01	1.15E+02
Dibenzofuran	5.60E-03	5.13E-02	Yes	1.51E-01	1.00E+00	2.90E-03	2.65E-02
Phenol	3.00E-01	5.09E-02	No	5.40E+00	1.00E+00	3.18E-01	5.40E-02
PCBs							
Aroclor 1254	3.00E+00	1.99E-01	No	1.00E-02	4.50E+00	6.77E+00	4.50E-01
Pesticides							
4,4'-DDE	4.20E-02	4.40E-03	No	1.80E-02	2.50E-02	6.65E-04	6.97E-05

TABLE M.53
Calculated Mixed Soil (0-4' bls) Exposure - Short-tailed Shrew
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	Mean > Max?	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
4,4'-DDT	4.20E-02	3.89E-03	No	1.00E-02	1.00E-01	2.21E-03	2.05E-04
BHC, alpha	2.80E-03	1.19E-03	No	3.00E-01	1.00E+00	1.49E-03	6.34E-04
Dieldrin	4.00E-02	4.30E-03	No	1.20E-01	4.70E-02	1.50E-03	1.61E-04
Endrin	1.60E-02	2.69E-03	No	5.80E-02	1.80E-01	1.56E-03	2.63E-04
Metals							
Aluminum	1.58E+04	1.09E+04	No	4.00E-03	1.50E-02	1.43E+02	9.86E+01
Cadmium	9.43E+01	4.93E+00	No	5.50E-01	2.15E-02	2.23E+00	1.16E-01
Chromium	8.33E+01	2.16E+01	No	7.50E-03	7.75E-01	3.25E+01	8.42E+00
Copper	2.15E+02	2.93E+01	No	4.00E-01	6.82E-01	7.55E+01	1.03E+01
Iron	2.71E+04	2.10E+04	No	4.00E-03	5.00E-02	7.20E+02	5.59E+02
Lead	3.66E+02	2.94E+01	No	5.80E-03	2.10E+00	3.85E+02	3.10E+01
Manganese	1.42E+03	5.83E+02	No	5.60E-01	1.00E+00	7.29E+02	3.00E+02
Mercury	1.10E-01	3.85E-02	No	9.00E-01	2.30E+01	1.27E+00	4.44E-01
Nickel	4.25E+01	2.54E+01	No	2.80E-01	1.00E+02	2.13E+03	1.27E+03
Selenium	2.30E+00	5.66E-01	No	6.20E+00	5.00E+00	6.06E+00	1.49E+00
Silver	1.19E+01	6.65E-01	No	3.00E-04	2.60E+00	1.55E+01	8.66E-01
Thallium	1.80E+00	7.60E-01	No	4.00E-03	2.33E-01	2.13E-01	8.99E-02
Vanadium	2.40E+01	1.82E+01	No	1.00E-02	1.00E+00	1.21E+01	9.15E+00
Zinc	2.85E+02	7.28E+01	No	1.40E+00	9.90E+00	1.42E+03	3.63E+02

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW

Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.00751 kg/day) (Table M.46)
Is = incidental soil intake rate (0.000022 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.015 kg) (Table M.46)

TABLE M.54
Calculated Surface Soil (0-1' bls) Hazard Quotients - Short-tailed Shrew
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	2.97E-01	5.17E-02	1.00E+02	5.00E+02	3.0E-03	5.2E-04	5.9E-04	1.0E-04
Methyl butyl ketone*	1.14E-03	6.34E-03	No data	No data	--	--	--	--
PAHs								
Benzo(a)anthracene*	1.77E-03	1.95E-03	1.00E+00	1.00E+01	1.8E-03	2.0E-03	1.8E-04	2.0E-04
Benzo(b)fluoranthene	5.86E-03	4.83E-03	1.00E+00	1.00E+01	5.9E-03	4.8E-03	5.9E-04	4.8E-04
Benzo(g,h,i)perylene*	2.80E-03	3.62E-03	1.00E+00	1.00E+01	2.8E-03	3.6E-03	2.8E-04	3.6E-04
Benzo(k)fluoranthene*	3.34E-03	4.12E-03	1.00E+00	1.00E+01	3.3E-03	4.1E-03	3.3E-04	4.1E-04
Chrysene	4.65E-03	2.51E-03	1.00E+00	1.00E+01	4.6E-03	2.5E-03	4.6E-04	2.5E-04
Dibenz(a,h)anthracene*	1.44E-03	3.19E-03	1.00E+00	1.00E+01	1.4E-03	3.2E-03	1.4E-04	3.2E-04
Fluorene*	1.02E-03	6.98E-03	1.25E+01	1.25E+02	8.1E-05	5.6E-04	8.1E-06	5.6E-05
Indeno(1,2,3-cd)pyrene*	3.80E-03	6.66E-03	1.00E+00	1.00E+01	3.8E-03	6.7E-03	3.8E-04	6.7E-04
Semi-volatiles								
Bis(2-ethylhexyl)phthalate	1.26E+00	2.81E-01	1.83E+01	1.83E+02	6.9E-02	1.5E-02	6.9E-03	1.5E-03
Butylbenzylphthalate*	4.06E-03	2.25E-02	1.59E+02	4.70E+02	2.6E-05	1.4E-04	8.6E-06	4.8E-05
Carbazole*	9.69E-03	2.29E-02	5.00E+00	5.00E+00	1.9E-03	4.6E-03	1.9E-03	4.6E-03
Di-n-octylphthalate*	1.91E+01	8.63E+01	6.51E+01	6.51E+01	2.9E-01	1.3E+00	2.9E-01	1.3E+00
Dibenzofuran*	2.90E-03	1.92E-02	No data	No data	--	--	--	--
PCBs								
Aroclor 1254	1.51E+00	2.06E-01	6.80E-02	6.80E-01	**2.2E+01**	**3.0E+00**	**2.2E+00**	3.0E-01
Pesticides								
4,4'-DDE	2.38E-04	4.81E-05	8.00E-01	4.00E+00	3.0E-04	6.0E-05	5.9E-05	1.2E-05
4,4'-DDT	2.21E-03	2.44E-04	8.00E-01	4.00E+00	2.8E-03	3.1E-04	5.5E-04	6.1E-05
Dieldrin	5.24E-04	1.14E-04	2.00E-02	2.00E-01	2.6E-02	5.7E-03	2.6E-03	5.7E-04
Endrin	4.10E-04	2.12E-04	9.20E-02	9.20E-01	4.5E-03	2.3E-03	4.5E-04	2.3E-04
Metals								
Aluminum	1.43E+02	1.01E+02	1.93E+00	1.93E+01	**7.4E+01**	**5.2E+01**	**7.4E+00**	**5.2E+00**
Cadmium	7.55E-02	7.76E-03	1.00E+00	1.00E+01	7.6E-02	7.8E-03	7.6E-03	7.8E-04
Chromium	9.08E+00	6.68E+00	2.74E+03	2.74E+04	3.3E-03	2.4E-03	3.3E-04	2.4E-04
Iron	7.20E+02	5.56E+02	2.55E+01	2.55E+01	**2.8E+01**	**2.2E+01**	**2.8E+01**	**2.2E+01**
Manganese	7.29E+02	3.27E+02	8.80E+01	2.84E+02	**8.3E+00**	**3.7E+00**	**2.6E+00**	**1.2E+00**
Mercury	1.27E+00	4.77E-01	1.32E+01	1.32E+01	9.6E-02	3.6E-02	9.6E-02	3.6E-02

TABLE M.54
Calculated Surface Soil (0-1' bls) Hazard Quotients - Short-tailed Shrew
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Nickel	2.00E+03	1.22E+03	4.00E+01	8.00E+01	**5.0E+01**	**3.0E+01**	**2.5E+01**	**1.5E+01**
Selenium	6.06E+00	1.48E+00	2.00E-01	3.30E-01	**3.0E+01**	**7.4E+00**	**1.8E+01**	**4.5E+00**
Thallium	2.13E-01	1.04E-01	7.40E-02	7.40E-01	**2.9E+00**	**1.4E+00**	**2.9E-01**	**1.4E-01**
Vanadium	1.21E+01	9.36E+00	2.10E-01	2.10E+00	**5.7E+01**	**4.5E+01**	**5.7E+00**	**4.5E+00**
Zinc	4.17E+02	2.99E+02	1.60E+02	3.20E+02	**2.6E+00**	**1.9E+00**	**1.3E+00**	9.3E-01

1 Receptor exposure from Table M.52
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ > 1.
* Mean is greater than the maximum because of using 1/2 detection limit to calculate.

TABLE M.55
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Short-tailed Shrew
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	2.97E-01	5.05E-02	1.00E+02	5.00E+02	3.0E-03	5.0E-04	5.9E-04	1.0E-04
Methyl butyl ketone	1.14E-03	6.84E-03	No data	No data	--	--	--	--
Total Xylenes	1.59E+00	8.64E-02	2.10E+00	2.06E+03	7.6E-01	4.1E-02	7.7E-04	4.2E-05
Trichloroethene	1.63E-02	4.30E-03	7.00E-01	7.00E+00	2.3E-02	6.1E-03	2.3E-03	6.1E-04
PAHs								
2-Methylnaphthalene	1.06E-02	8.75E-03	7.16E+00	7.16E+01	1.5E-03	1.2E-03	1.5E-04	1.2E-04
Acenapthylene*	1.72E-02	2.39E-02	1.00E+00	1.00E+01	1.7E-02	2.4E-02	1.7E-03	2.4E-03
Benzo(a)anthracene	1.18E-02	2.51E-03	1.00E+00	1.00E+01	1.2E-02	2.5E-03	1.2E-03	2.5E-04
Benzo(a)pyrene	4.72E-01	9.31E-02	1.00E+00	1.00E+01	4.7E-01	9.3E-02	4.7E-02	9.3E-03
Benzo(b)fluoranthene	3.09E-02	6.34E-03	1.00E+00	1.00E+01	3.1E-02	6.3E-03	3.1E-03	6.3E-04
Benzo(g,h,i)perylene	1.46E-02	5.29E-03	1.00E+00	1.00E+01	1.5E-02	5.3E-03	1.5E-03	5.3E-04
Benzo(k)fluoranthene	2.06E-02	5.06E-03	1.00E+00	1.00E+01	2.1E-02	5.1E-03	2.1E-03	5.1E-04
Chrysene	2.19E-02	3.62E-03	1.00E+00	1.00E+01	2.2E-02	3.6E-03	2.2E-03	3.6E-04
Dibenz(a,h)anthracene	5.13E-03	4.00E-03	1.00E+00	1.00E+01	5.1E-03	4.0E-03	5.1E-04	4.0E-04
Fluoranthene	1.69E-01	1.70E-02	1.25E+01	1.25E+02	1.4E-02	1.4E-03	1.4E-03	1.4E-04
Fluorene	9.78E-03	8.51E-03	1.25E+01	1.25E+02	7.8E-04	6.8E-04	7.8E-05	6.8E-05
Indeno(1,2,3-cd)pyrene	2.54E-02	9.42E-03	1.00E+00	1.00E+01	2.5E-02	9.4E-03	2.5E-03	9.4E-04
Naphthalene	1.31E-01	1.69E-02	7.16E+00	7.16E+01	1.8E-02	2.4E-03	1.8E-03	2.4E-04
Phenanthrene	2.48E-02	3.25E-03	1.00E+00	1.00E+01	2.5E-02	3.3E-03	2.5E-03	3.3E-04
Pyrene	1.98E-02	2.27E-03	1.00E+00	1.00E+01	2.0E-02	2.3E-03	2.0E-03	2.3E-04
Semi-volatiles								
4-Methylphenol	1.31E-01	4.69E-02	2.19E+02	2.19E+02	6.0E-04	2.1E-04	6.0E-04	2.1E-04
bis(2-Ethylhexyl)phthalate	5.59E+00	7.62E-01	1.83E+01	1.83E+02	3.0E-01	4.2E-02	3.0E-02	4.2E-03
Butylbenzylphthalate*	4.06E-03	3.11E-02	1.59E+02	4.70E+02	2.6E-05	2.0E-04	8.6E-06	6.6E-05
Carbazole*	9.69E-03	3.13E-02	5.00E+00	5.00E+00	1.9E-03	6.3E-03	1.9E-03	6.3E-03
Di-n-octylphthalate*	1.94E+01	1.15E+02	6.51E+01	6.51E+01	3.0E-01	1.8E+00	3.0E-01	1.8E+00
Dibenzofuran*	2.90E-03	2.65E-02	No data	No data	--	--	--	--
Phenol	3.18E-01	5.40E-02	No data	No data	--	--	--	--
PCBs								
Aroclor 1254	6.77E+00	4.50E-01	6.80E-02	6.80E-01	**1.0E+02**	**6.6E+00**	**1.0E+01**	6.6E-01
Pesticides								
4,4'-DDE	6.65E-04	6.97E-05	8.00E-01	4.00E+00	8.3E-04	8.7E-05	1.7E-04	1.7E-05

TABLE M.55
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Short-tailed Shrew
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
4,4'-DDT	2.21E-03	2.05E-04	8.00E-01	4.00E+00	2.8E-03	2.6E-04	5.5E-04	5.1E-05
BHC, alpha	1.49E-03	6.34E-04	1.60E+00	3.20E+00	9.3E-04	4.0E-04	4.7E-04	2.0E-04
Dieldrin	1.50E-03	1.61E-04	2.00E-02	2.00E-01	7.5E-02	8.0E-03	7.5E-03	8.0E-04
Endrin	1.56E-03	2.63E-04	9.20E-02	9.20E-01	1.7E-02	2.9E-03	1.7E-03	2.9E-04
Metals								
Aluminum	1.43E+02	9.86E+01	1.93E+00	1.93E+01	**7.4E+01**	**5.1E+01**	**7.4E+00**	**5.1E+00**
Cadmium	2.23E+00	1.16E-01	1.00E+00	1.00E+01	**2.2E+00**	1.2E-01	2.2E-01	1.2E-02
Chromium	3.25E+01	8.42E+00	2.74E+03	2.74E+04	1.2E-02	3.1E-03	1.2E-03	3.1E-04
Copper	7.55E+01	1.03E+01	1.40E+01	2.80E+01	**5.4E+00**	7.4E-01	**2.7E+00**	3.7E-01
Iron	7.20E+02	5.59E+02	2.55E+01	2.55E+01	**2.8E+01**	**2.2E+01**	**2.8E+01**	**2.2E+01**
Lead	3.85E+02	3.10E+01	8.00E+00	8.00E+01	**4.8E+01**	**3.9E+00**	**4.8E+00**	3.9E-01
Manganese	7.29E+02	3.00E+02	8.80E+01	2.84E+02	**8.3E+00**	**3.4E+00**	**2.6E+00**	**1.1E+00**
Mercury	1.27E+00	4.44E-01	1.32E+01	1.32E+01	9.6E-02	3.4E-02	9.6E-02	3.4E-02
Nickel	2.13E+03	1.27E+03	4.00E+01	8.00E+01	**5.3E+01**	**3.2E+01**	**2.7E+01**	**1.6E+01**
Selenium	6.06E+00	1.49E+00	2.00E-01	3.30E-01	**3.0E+01**	**7.4E+00**	**1.8E+01**	**4.5E+00**
Silver	1.55E+01	8.66E-01	1.81E+00	1.81E+01	**8.6E+00**	4.8E-01	8.6E-01	4.8E-02
Thallium	2.13E-01	8.99E-02	7.40E-02	7.40E-01	**2.9E+00**	**1.2E+00**	2.9E-01	1.2E-01
Vanadium	1.21E+01	9.15E+00	2.10E-01	2.10E+00	**5.7E+01**	**4.4E+01**	**5.7E+00**	**4.4E+00**
Zinc	1.42E+03	3.63E+02	1.60E+02	3.20E+02	**8.9E+00**	**2.3E+00**	**4.4E+00**	**1.1E+00**

1 Receptor exposure from Table M.53
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value

BOLD : represents receptor HQ > 1.

* Mean is greater than the maximum because of using 1/2 detection limit to calculate.

TABLE M.56
Calculated Surface Soil (0-1' bls) Exposure - Red-tailed Hawk
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	Invertebrate BAF[2] (unitless)	Vertebrate BAF[2] (unitless)	Hawk Max Exposure[3] (mg/kg/day)	Hawk Mean Exposure[3] (mg/kg/day)
Volatiles							
Acetone	5.20E-02	9.07E-03	5.33E+01	3.90E-01	3.90E-01	1.91E-05	3.33E-06
Methyl butyl ketone	1.00E-03	5.57E-03	6.17E+00	1.00E+00	1.00E+00	1.90E-07	1.06E-06
PAHs							
Benzo(a)anthracene	2.70E-02	2.98E-02	1.51E-02	1.25E-01	5.90E-01	2.07E-07	2.28E-07
Benzo(b)fluoranthene	3.60E-02	2.97E-02	1.00E-02	3.20E-01	5.90E-01	6.15E-07	5.07E-07
Benzo(g,h,i)perylene	2.30E-02	2.97E-02	3.05E-03	2.40E-01	5.90E-01	3.02E-07	3.90E-07
Benzo(k)fluoranthene	2.60E-02	3.20E-02	4.25E-03	2.53E-01	5.90E-01	3.58E-07	4.41E-07
Chrysene	5.10E-02	2.76E-02	2.00E-02	1.75E-01	5.90E-01	5.17E-07	2.79E-07
Dibenz(a,h)anthracene	1.60E-02	3.55E-02	8.16E-03	1.75E-01	5.90E-01	1.60E-07	3.56E-07
Fluorene	5.40E-03	3.71E-02	1.49E-01	3.42E-01	5.90E-01	1.05E-07	7.25E-07
Indeno(1,2,3-cd)pyrene	1.80E-02	3.15E-02	1.37E-03	4.19E-01	5.90E-01	3.92E-07	6.87E-07
Semi-volatiles							
Bis(2-ethylhexyl)phthalate	2.10E-01	4.68E-02	1.00E-02	1.20E+01	1.50E+00	3.12E-04	6.96E-05
Butylbenzylphthalate	6.70E-03	3.72E-02	1.00E+00	1.00E+00	1.00E+00	6.82E-07	3.79E-06
Carbazole	1.60E-02	3.78E-02	1.00E+00	1.00E+00	1.00E+00	1.63E-06	3.85E-06
Di-n-octylphthalate	7.80E-03	3.52E-02	1.60E-04	4.90E+03	6.42E+02	2.02E+00	9.12E+00
Dibenzofuran	5.60E-03	3.71E-02	1.51E-01	1.00E+00	1.00E+00	4.89E-07	3.24E-06
PCBs							
Arochlor 1254	6.70E-01	9.14E-02	1.00E-02	4.50E+00	4.50E+00	1.13E-03	1.53E-04
Pesticides							
4,4'-DDE	1.50E-02	3.04E-03	1.80E-02	2.50E-02	2.50E-02	1.79E-09	3.63E-10
4,4'-DDT	4.20E-02	4.64E-03	1.00E-02	1.00E-01	1.00E-01	4.54E-08	5.02E-09

TABLE M.56
Calculated Surface Soil (0-1' bls) Exposure - Red-tailed Hawk
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	Invertebrate BAF[2] (unitless)	Vertebrate BAF[2] (unitless)	Hawk Max Exposure[3] (mg/kg/day)	Hawk Mean Exposure[3] (mg/kg/day)
Dieldrin	1.40E-02	3.04E-03	1.20E-01	4.70E-02	4.70E-02	5.48E-09	1.19E-09
Endrin	4.20E-03	2.17E-03	5.80E-02	1.80E-01	2.40E-02	1.84E-09	9.49E-10
Metals							
Aluminum	1.58E+04	1.11E+04	4.00E-03	1.50E-02	1.50E-02	8.68E-04	6.11E-04
Cadmium	3.20E+00	3.29E-01	5.50E-01	2.15E-02	2.15E-02	4.17E-07	4.28E-08
Chromium	2.33E+01	1.72E+01	7.50E-03	7.75E-01	7.75E-01	1.20E-03	8.81E-04
Iron	2.71E+04	2.09E+04	4.00E-03	5.00E-02	5.00E-02	8.87E-03	6.85E-03
Manganese	1.42E+03	6.36E+02	5.60E-01	1.00E+00	1.00E+00	1.23E-01	5.52E-02
Mercury	1.10E-01	4.13E-02	9.00E-01	2.30E+01	2.30E+01	4.81E-03	1.81E-03
Nickel	3.99E+01	2.43E+01	2.80E-01	1.00E+02	1.00E+02	3.29E+01	2.00E+01
Selenium	2.30E+00	5.63E-01	6.20E+00	5.00E+00	5.00E+00	5.01E-03	1.23E-03
Thallium	1.80E+00	8.84E-01	4.00E-03	2.33E-01	2.33E-01	9.07E-06	4.45E-06
Vanadium	2.40E+01	1.86E+01	1.00E-02	1.00E+00	1.00E+00	2.04E-03	1.58E-03
Zinc	8.37E+01	5.99E+01	1.40E+00	9.90E+00	9.90E+00	6.82E-01	4.88E-01

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

$ED = Conc_{shrew} * BAF_{vert} * I_{a\,hawk} * SFF / BW_{hawk}$

$ED = [(Cs * SP_v * CF * Ip_{shrew}) + (Cs * BAF_{inv} * Ia_{shrew}) + (Cs * Is_{shrew})] * BAF_{vert} * Ia_{hawk} * SFF / (BW_{hawk})$

Where, ED = exposure dose

Cs = maximum or mean concentration in soil (mg/kg)

$Conc_{shrew}$ = concentration in shrew (mg/kg)

CF = plant dry-to-wet-weight conversion factor (0.2) for <u>inorganics only</u>

SP_v = soil-to-plant uptake factor for vegetative matter

Ip_{shrew} = plant-matter intake rate for the shrew = 0.000155 kg/day (Table M.46)

BAF_{inv} = invertebrate bioaccumulation factor (unitless) (Table M.45)

Ia_{shrew} = animal-matter intake rate for the shrew = 0.000751 kg/day (Table M.46)

Is_{shrew} = incidental soil intake rate for the shrew = 0.000022 kg/day (Table M.46)

BAF_{vert} = vertebrate bioaccumulation factor (unitless) (Table M.45)

Ia_{hawk} = animal-matter intake rate for the hawk = 0.136 kg/day (Table M.46)

SFF = site foraging factor = 1 (default)

BW = body weight = 1.24 kg (Table M.46)

TABLE M.57
Calculated Mixed Soil (0-4' bls) Exposure - Red-tailed Hawk
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	Invertebrate BAF[2] (unitless)	Vertebrate BAF[2] (unitless)	Hawk Max Exposure[3] (mg/kg/day)	Hawk Mean Exposure[3] (mg/kg/day)
Volatiles							
Acetone	5.20E-02	8.85E-03	5.33E+01	3.90E-01	3.90E-01	1.91E-05	3.25E-06
Methyl butyl ketone	1.00E-03	6.00E-03	6.17E+00	3.90E-01	1.00E+00	1.39E-07	8.37E-07
Total Xylenes	5.20E-01	2.82E-02	5.62E-01	3.90E-01	1.00E+00	2.29E-05	1.24E-06
Trichloroethene	2.60E-02	6.85E-03	1.22E+00	3.90E-01	1.00E+00	1.44E-06	3.78E-07
PAHs							
2-Methylnaphthalene	5.60E-02	4.62E-02	1.63E-01	3.42E-01	5.90E-01	1.10E-06	9.09E-07
Acenapthylene	3.30E-02	4.59E-02	1.72E-01	1.00E+00	5.90E-01	1.71E-06	2.37E-06
Benzo(a)anthracene	1.80E-01	3.82E-02	1.51E-02	1.25E-01	5.90E-01	1.38E-06	2.92E-07
Benzo(a)pyrene	2.00E-01	3.94E-02	1.02E+00	4.50E+00	5.90E-01	4.61E-05	9.09E-06
Benzo(b)fluoranthene	1.90E-01	3.89E-02	1.00E-02	3.20E-01	5.90E-01	3.24E-06	6.65E-07
Benzo(g,h,i)perylene	1.20E-01	4.34E-02	3.05E-03	2.40E-01	5.90E-01	1.57E-06	5.69E-07
Benzo(k)fluoranthene	1.60E-01	3.93E-02	4.25E-03	2.53E-01	5.90E-01	2.20E-06	5.41E-07
Chrysene	2.40E-01	3.97E-02	2.00E-02	1.75E-01	5.90E-01	2.43E-06	4.02E-07
Dibenz(a,h)anthracene	5.70E-02	4.44E-02	8.16E-03	1.75E-01	5.90E-01	5.71E-07	4.45E-07
Fluoranthene	4.20E-01	4.24E-02	3.72E-02	7.92E-01	5.90E-01	1.69E-05	1.71E-06
Fluorene	5.20E-02	4.53E-02	1.49E-01	3.42E-01	5.90E-01	1.02E-06	8.84E-07
Indeno(1,2,3-cd)pyrene	1.20E-01	4.46E-02	1.37E-03	4.19E-01	5.90E-01	2.62E-06	9.71E-07
Naphthalene	6.00E-01	7.72E-02	4.43E-01	3.42E-01	5.90E-01	1.35E-05	1.74E-06
Phenanthrene	3.40E-01	4.46E-02	1.00E-01	1.22E-01	5.90E-01	2.84E-06	3.73E-07
Pyrene	3.80E-01	4.36E-02	4.43E-02	9.20E-02	5.90E-01	2.41E-06	2.77E-07
Semi-volatiles							
4-Methylphenol	1.40E-01	5.01E-02	4.20E+00	3.90E-01	1.00E+00	1.48E-05	5.30E-06
bis(2-Ethylhexyl)phthalate	9.30E-01	1.27E-01	1.00E-02	1.20E+01	1.50E+00	1.38E-03	1.89E-04
Butylbenzylphthalate	6.70E-03	5.13E-02	1.00E+00	1.00E+00	1.00E+00	6.82E-07	5.22E-06
Carbazole	1.60E-02	5.17E-02	1.00E+00	1.00E+00	1.00E+00	1.63E-06	5.26E-06
Di-n-octylphthalate	7.90E-03	4.70E-02	1.60E-04	4.90E+03	6.42E+02	2.05E+00	1.22E+01
Dibenzofuran	5.60E-03	5.13E-02	1.51E-01	1.00E+00	1.00E+00	4.89E-07	4.48E-06
Phenol	3.00E-01	5.09E-02	5.40E+00	3.90E-01	1.00E+00	3.79E-05	6.43E-06
PCBs							
Aroclor 1254	3.00E+00	1.99E-01	1.00E-02	4.50E+00	4.50E+00	5.04E-03	3.35E-04
Pesticides							
4,4'-DDE	4.20E-02	4.40E-03	1.80E-02	2.50E-02	2.50E-02	5.02E-09	5.26E-10
4,4'-DDT	4.20E-02	3.89E-03	1.00E-02	1.00E-01	1.00E-01	4.54E-08	4.21E-09
BHC, alpha	2.80E-03	1.19E-03	3.00E-01	3.90E-01	1.00E+00	1.11E-07	4.71E-08

TABLE M.57
Calculated Mixed Soil (0-4' bls) Exposure - Red-tailed Hawk
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	Invertebrate BAF[2] (unitless)	Vertebrate BAF[2] (unitless)	Hawk Max Exposure[3] (mg/kg/day)	Hawk Mean Exposure[3] (mg/kg/day)
Endrin	1.60E-02	2.69E-03	5.80E-02	3.90E-01	2.40E-02	1.36E-08	2.29E-09
Metals							
Aluminum	1.58E+04	1.09E+04	4.00E-03	1.50E-02	1.50E-02	8.68E-04	5.98E-04
Cadmium	9.43E+01	4.93E+00	5.50E-01	2.15E-02	2.15E-02	1.23E-05	6.42E-07
Chromium	8.33E+01	2.16E+01	7.50E-03	7.75E-01	7.75E-01	4.28E-03	1.11E-03
Copper	2.15E+02	2.93E+01	4.00E-01	6.82E-01	6.82E-01	8.79E-03	1.20E-03
Iron	2.71E+04	2.10E+04	4.00E-03	5.00E-02	5.00E-02	8.87E-03	6.88E-03
Lead	3.66E+02	2.94E+01	5.80E-03	2.10E+00	2.10E+00	1.35E-01	1.08E-02
Manganese	1.42E+03	5.83E+02	5.60E-01	1.00E+00	1.00E+00	1.23E-01	5.06E-02
Mercury	1.10E-01	3.85E-02	9.00E-01	2.30E+01	2.30E+01	4.81E-03	1.68E-03
Nickel	4.25E+01	2.54E+01	2.80E-01	1.00E+02	1.00E+02	3.50E+01	2.09E+01
Selenium	2.30E+00	5.66E-01	6.20E+00	5.00E+00	5.00E+00	5.01E-03	1.23E-03
Silver	1.19E+01	6.65E-01	3.00E-04	3.90E-01	5.00E-01	2.05E-04	1.15E-05
Thallium	1.80E+00	7.60E-01	4.00E-03	2.33E-01	2.33E-01	9.07E-06	3.83E-06
Vanadium	2.40E+01	1.82E+01	1.00E-02	1.00E+00	1.00E+00	2.04E-03	1.54E-03
Zinc	2.85E+02	7.28E+01	1.40E+00	9.90E+00	9.90E+00	2.32E+00	5.93E-01

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

$ED = Conc_{shrew} * BAF_{vert} * I_{a\ hawk} * SFF / BW_{hawk}$

$ED = [(Cs * SP_v * CF * Ip_{shrew}) + (Cs * BAF_{inv} * Ia_{shrew}) + (Cs * Is_{shrew})] * BAF_{vert} * Ia_{hawk} * SFF / (BW_{hawk})$

Where, ED = exposure dose
Cs = maximum or mean concentration in soil (mg/kg)
$Conc_{shrew}$ = concentration in shrew (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) for inorganics only
SP_v = soil-to-plant uptake factor for vegetative matter
Ip_{shrew} = plant-matter intake rate for the shrew = 0.000155 kg/day (Table M.46)
BAF_{inv} = invertebrate bioaccumulation factor (unitless) (Table M.45)
Ia_{shrew} = animal-matter intake rate for the shrew = 0.000751 kg/day (Table M.46)
Is_{shrew} = incidental soil intake rate for the shrew = 0.000022 kg/day (Table M.46)
BAF_{vert} = vertebrate bioaccumulation factor (unitless) (Table M.45)
Ia_{hawk} = animal-matter intake rate for the hawk = 0.136 kg/day (Table M.46)
SFF = site foraging factor = 1 (default)
BW = body weight = 1.24 kg (Table M.46)

TABLE M.58
Calculated Surface Soil (0-1' bls) Hazard Quotients - Red-tailed hawk
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Constituent	Hawk Max Exposure[1] (mg/kg/day)	Hawk Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	1.91E-05	3.33E-06	4.51E+01	4.51E+02	4.2E-07	7.4E-08	4.2E-08	7.4E-09
Methyl butyl ketone	1.90E-07	1.06E-06	No data	No data	--	--	--	--
PAHs								
Benzo(a)anthracene	2.07E-07	2.28E-07	2.85E+01	2.85E+02	7.2E-09	8.0E-09	7.2E-10	8.0E-10
Benzo(b)fluoranthene	6.15E-07	5.07E-07	2.85E+01	2.85E+02	2.2E-08	1.8E-08	2.2E-09	1.8E-09
Benzo(g,h,i)perylene	3.02E-07	3.90E-07	2.85E+01	2.85E+02	1.1E-08	1.4E-08	1.1E-09	1.4E-09
Benzo(k)fluoranthene	3.58E-07	4.41E-07	2.85E+01	2.85E+02	1.3E-08	1.5E-08	1.3E-09	1.5E-09
Chrysene	5.17E-07	2.79E-07	2.85E+01	2.85E+02	1.8E-08	9.8E-09	1.8E-09	9.8E-10
Dibenz(a,h)anthracene	1.60E-07	3.56E-07	2.85E+01	2.85E+02	5.6E-09	1.2E-08	5.6E-10	1.2E-09
Fluorene	1.05E-07	7.25E-07	2.85E+01	2.85E+02	3.7E-09	2.5E-08	3.7E-10	2.5E-09
Indeno(1,2,3-cd)pyrene	3.92E-07	6.87E-07	2.85E+01	2.85E+02	1.4E-08	2.4E-08	1.4E-09	2.4E-09
Semi-volatiles								
Bis(2-ethylhexyl)phthalate	3.12E-04	6.96E-05	1.11E+00	1.11E+01	2.8E-04	6.3E-05	2.8E-05	6.3E-06
Butylbenzylphthalate	6.82E-07	3.79E-06	No data	No data	--	--	--	--
Carbazole	1.63E-06	3.85E-06	No data	No data	--	--	--	--
Di-n-octylphthalate	2.02E+00	9.12E+00	No data	No data	--	--	--	--
Dibenzofuran	4.89E-07	3.24E-06	2.18E-01	2.18E-01	2.2E-06	1.5E-05	2.2E-06	1.5E-05
PCBs								
Aroclor 1254	1.13E-03	1.53E-04	1.00E+00	1.00E+01	1.1E-03	1.5E-04	1.1E-04	1.5E-05
Pesticides								
4,4'-DDE	1.79E-09	3.63E-10	2.20E-02	2.20E-01	8.1E-08	1.6E-08	8.1E-09	1.6E-09
4,4'-DDT	4.54E-08	5.02E-09	2.20E-02	2.20E-01	2.1E-06	2.3E-07	2.1E-07	2.3E-08
Dieldrin	5.48E-09	1.19E-09	7.70E-02	7.70E-01	7.1E-08	1.5E-08	7.1E-09	1.5E-09
Endrin	1.84E-09	9.49E-10	1.04E-03	1.04E-02	1.8E-06	9.2E-07	1.8E-07	9.2E-08
Metals								
Aluminum	8.68E-04	6.11E-04	1.10E+02	1.10E+03	7.9E-06	5.6E-06	7.9E-07	5.6E-07
Cadmium	4.17E-07	4.28E-08	1.45E+00	2.00E+01	2.9E-07	3.0E-08	2.1E-08	2.1E-09
Chromium	1.20E-03	8.81E-04	1.00E+00	5.00E+00	1.2E-03	8.8E-04	2.4E-04	1.8E-04
Iron	8.87E-03	6.85E-03	No data	No data	--	--	--	--
Manganese	1.23E-01	5.52E-02	9.77E+02	9.77E+03	1.3E-04	5.6E-05	1.3E-05	5.6E-06
Mercury	4.81E-03	1.81E-03	2.86E+00	2.86E+00	1.7E-03	6.3E-04	1.7E-03	6.3E-04
Nickel	3.29E+01	2.00E+01	7.74E+01	1.07E+02	4.2E-01	2.6E-01	3.1E-01	1.9E-01

TABLE M.58
Calculated Surface Soil (0-1' bls) Hazard Quotients - Red-tailed hawk
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Constituent	Hawk Max Exposure[1] (mg/kg/day)	Hawk Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Selenium	5.01E-03	1.23E-03	1.71E+00	3.43E+00	2.9E-03	7.2E-04	1.5E-03	3.6E-04
Thallium	9.07E-06	4.45E-06	9.50E-02	9.50E-02	9.5E-05	4.7E-05	9.5E-05	4.7E-05
Vanadium	2.04E-03	1.58E-03	1.14E+01	1.14E+02	1.8E-04	1.4E-04	1.8E-05	1.4E-05
Zinc	6.82E-01	4.88E-01	1.45E+01	1.31E+02	4.7E-02	3.4E-02	5.2E-03	3.7E-03

1 Receptor exposure from Table M.56
2 NOAEL toxicity reference value from Table M.40
3 LOAEL toxicity reference value from Table M.41
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ > 1.

TABLE M.59
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Red-tailed hawk
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Constituent	Hawk Max Exposure[1] (mg/kg/day)	Hawk Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	1.91E-05	3.25E-06	4.51E+01	4.51E+02	4.2E-07	7.2E-08	4.2E-08	7.2E-09
Methyl butyl ketone	1.39E-07	8.37E-07	No data	No data	--	--	--	--
Total Xylenes	2.29E-05	1.24E-06	3.06E+02	3.06E+03	7.5E-08	4.1E-09	7.5E-09	4.1E-10
Trichloroethene	1.44E-06	3.78E-07	No data	No data	--	--	--	--
PAHs								
2-Methylnaphthalene	1.10E-06	9.09E-07	2.85E+01	2.85E+02	3.9E-08	3.2E-08	3.9E-09	3.2E-09
Acenapthylene	1.71E-06	2.37E-06	2.85E+01	2.85E+02	6.0E-08	8.3E-08	6.0E-09	8.3E-09
Benzo(a)anthracene	1.38E-06	2.92E-07	2.85E+01	2.85E+02	4.8E-08	1.0E-08	4.8E-09	1.0E-09
Benzo(a)pyrene	4.61E-05	9.09E-06	2.85E+01	2.85E+02	1.6E-06	3.2E-07	1.6E-07	3.2E-08
Benzo(b)fluoranthene	3.24E-06	6.65E-07	2.85E+01	2.85E+02	1.1E-07	2.3E-08	1.1E-08	2.3E-09
Benzo(g,h,i)perylene	1.57E-06	5.69E-07	2.85E+01	2.85E+02	5.5E-08	2.0E-08	5.5E-09	2.0E-09
Benzo(k)fluoranthene	2.20E-06	5.41E-07	2.85E+01	2.85E+02	7.7E-08	1.9E-08	7.7E-09	1.9E-09
Chrysene	2.43E-06	4.02E-07	2.85E+01	2.85E+02	8.5E-08	1.4E-08	8.5E-09	1.4E-09
Dibenz(a,h)anthracene	5.71E-07	4.45E-07	2.85E+01	2.85E+02	2.0E-08	1.6E-08	2.0E-09	1.6E-09
Fluoranthene	1.69E-05	1.71E-06	2.85E+01	2.85E+02	5.9E-07	6.0E-08	5.9E-08	6.0E-09
Fluorene	1.02E-06	8.84E-07	2.85E+01	2.85E+02	3.6E-08	3.1E-08	3.6E-09	3.1E-09
Indeno(1,2,3-cd)pyrene	2.62E-06	9.71E-07	2.85E+01	2.85E+02	9.2E-08	3.4E-08	9.2E-09	3.4E-09
Naphthalene	1.35E-05	1.74E-06	2.85E+01	2.85E+02	4.7E-07	6.1E-08	4.7E-08	6.1E-09
Phenanthrene	2.84E-06	3.73E-07	2.85E+01	2.85E+02	1.0E-07	1.3E-08	1.0E-08	1.3E-09
Pyrene	2.41E-06	2.77E-07	2.85E+01	2.85E+02	8.5E-08	9.7E-09	8.5E-09	9.7E-10
Semi-volatiles								
4-Methylphenol	1.48E-05	5.30E-06	2.06E-01	2.06E-01	7.2E-05	2.6E-05	7.2E-05	2.6E-05
bis(2-Ethylhexyl)phthalate	1.38E-03	1.89E-04	1.11E+00	1.11E+01	1.2E-03	1.7E-04	1.2E-04	1.7E-05
Butylbenzylphthalate	6.82E-07	5.22E-06	No data	No data	--	--	--	--
Carbazole	1.63E-06	5.26E-06	No data	No data	--	--	--	--
Di-n-octylphthalate	2.05E+00	1.22E+01	No data	No data	--	--	--	--
Dibenzofuran	4.89E-07	4.48E-06	2.18E-01	2.18E-01	2.2E-06	2.1E-05	2.2E-06	2.1E-05
Phenol	3.79E-05	6.43E-06	No data	No data	--	--	--	--
PCBs								
Aroclor 1254	5.04E-03	3.35E-04	1.00E+00	1.00E+01	5.0E-03	3.3E-04	5.0E-04	3.3E-05
Pesticides								
4,4'-DDE	5.02E-09	5.26E-10	2.20E-02	2.20E-01	2.3E-07	2.4E-08	2.3E-08	2.4E-09
4,4'-DDT	4.54E-08	4.21E-09	2.20E-02	2.20E-01	2.1E-06	1.9E-07	2.1E-07	1.9E-08

TABLE M.59
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Red-tailed hawk
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Constituent	Hawk Max Exposure[1] (mg/kg/day)	Hawk Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
BHC, alpha	1.11E-07	4.71E-08	5.60E-01	2.25E+00	2.0E-07	8.4E-08	4.9E-08	2.1E-08
Dieldrin	6.88E-08	7.39E-09	7.70E-02	7.70E-01	8.9E-07	9.6E-08	8.9E-08	9.6E-09
Endrin	1.36E-08	2.29E-09	1.04E-02	1.04E-02	1.3E-06	2.2E-07	1.3E-06	2.2E-07
Metals								
Aluminum	8.68E-04	5.98E-04	1.10E+02	1.10E+03	7.9E-06	5.4E-06	7.9E-07	5.4E-07
Cadmium	1.23E-05	6.42E-07	1.45E+00	2.00E+01	8.5E-06	4.4E-07	6.1E-07	3.2E-08
Chromium	4.28E-03	1.11E-03	1.00E+00	5.00E+00	4.3E-03	1.1E-03	8.6E-04	2.2E-04
Copper	8.79E-03	1.20E-03	4.70E+01	4.70E+02	1.9E-04	2.6E-05	1.9E-05	2.6E-06
Iron	8.87E-03	6.88E-03	No data	No data	--	--	--	--
Lead	1.35E-01	1.08E-02	3.85E+00	3.85E+01	3.5E-02	2.8E-03	3.5E-03	2.8E-04
Manganese	1.23E-01	5.06E-02	9.77E+02	9.77E+03	1.3E-04	5.2E-05	1.3E-05	5.2E-06
Mercury	4.81E-03	1.68E-03	2.86E+00	2.86E+01	1.7E-03	5.9E-04	1.7E-04	5.9E-05
Nickel	3.50E+01	2.09E+01	7.74E+01	1.07E+02	4.5E-01	2.7E-01	3.3E-01	2.0E-01
Selenium	5.01E-03	1.23E-03	1.71E+00	3.43E+00	2.9E-03	7.2E-04	1.5E-03	3.6E-04
Silver	2.05E-04	1.15E-05	No data	No data	--	--	--	--
Thallium	9.07E-06	3.83E-06	9.50E-02	9.50E-02	9.5E-05	4.0E-05	9.5E-05	4.0E-05
Vanadium	2.04E-03	1.54E-03	1.14E+01	1.14E+02	1.8E-04	1.4E-04	1.8E-05	1.4E-05
Zinc	2.32E+00	5.93E-01	1.45E+01	1.31E+02	1.6E-01	4.1E-02	1.8E-02	4.5E-03

1 Receptor exposure from Table M.57

2 NOAEL toxicity reference value from Table M.40

3 LOAEL toxicity reference value from Table M.41

4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value

BOLD : represents receptor HQ > 1.

TABLE M.60
Calculated Surface Soil (0-1 ft) Exposure - Mourning Dove
Group E - Disposal Pit A/B -SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Mourning Dove Max Exposure[3] (mg/kg/day)	Mourning Dove Mean Exposure[3] (mg/kg/day)
Volatiles						
Acetone	5.20E-02	9.07E-03	5.33E+01	1.00E+00	1.64E-01	2.86E-02
Methyl butyl ketone	1.00E-03	5.57E-03	6.17E+00	1.00E+00	3.81E-04	2.12E-03
PAHs						
Benzo(a)anthracene	2.70E-02	2.98E-02	1.51E-02	1.25E-01	2.71E-04	2.99E-04
Benzo(b)fluoranthene	3.60E-02	2.97E-02	1.00E-02	3.19E-01	4.18E-04	3.45E-04
Benzo(g,h,i)perylene	2.30E-02	2.97E-02	3.05E-03	2.44E-01	2.41E-04	3.11E-04
Benzo(k)fluoranthene	2.60E-02	3.20E-02	4.25E-03	2.53E-01	2.76E-04	3.41E-04
Chrysene	5.10E-02	2.76E-02	2.00E-02	1.75E-01	5.51E-04	2.98E-04
Dibenz(a,h)anthracene	1.60E-02	3.55E-02	8.16E-03	1.75E-01	1.62E-04	3.59E-04
Fluorene	5.40E-03	3.71E-02	1.49E-01	3.42E-01	1.08E-04	7.42E-04
Indeno(1,2,3-cd)pyrene	1.80E-02	3.15E-02	1.37E-03	4.19E-01	2.17E-04	3.80E-04
Semi-volatiles						
Bis(2-ethylhexyl)phthalate	2.10E-01	4.68E-02	1.00E-02	1.20E+01	2.59E-02	5.77E-03
Butylbenzylphthalate	6.70E-03	3.72E-02	1.00E+00	1.20E+01	1.22E-03	6.76E-03
Carbazole	1.60E-02	3.78E-02	1.00E+00	1.00E+00	1.22E-03	2.89E-03
Di-n-octylphthalate	7.80E-03	3.52E-02	1.60E-04	1.20E+01	9.56E-04	4.31E-03
Dibenzofuran	5.60E-03	3.71E-02	1.51E-01	1.00E+00	1.48E-04	9.80E-04
PCBs						
Arochlor 1254	6.70E-01	9.14E-02	1.00E-02	4.50E+00	3.45E-02	4.71E-03
Pesticides						
4,4'-DDE	1.50E-02	3.04E-03	1.80E-02	2.50E-01	1.71E-04	3.47E-05
4,4'-DDT	4.20E-02	4.64E-03	1.00E-02	2.50E-01	4.59E-04	5.08E-05
Dieldrin	1.40E-02	3.04E-03	1.20E-01	2.50E-01	2.44E-04	5.29E-05
Endrin	4.20E-03	2.17E-03	5.80E-02	1.80E-01	5.50E-05	2.84E-05
Metals						
Aluminum	1.58E+04	1.11E+04	4.00E-03	1.50E-02	1.29E+02	9.07E+01
Cadmium	3.20E+00	3.29E-01	5.50E-01	2.80E-02	4.71E-02	4.84E-03
Chromium	2.33E+01	1.72E+01	7.50E-03	1.00E+00	4.10E-01	3.02E-01
Iron	2.71E+04	2.09E+04	4.00E-03	5.00E-02	2.30E+02	1.78E+02
Manganese	1.42E+03	6.36E+02	5.60E-01	1.00E+00	3.42E+01	1.53E+01
Mercury	1.10E-01	4.13E-02	9.00E-01	2.30E+01	2.62E-02	9.85E-03
Nickel	3.99E+01	2.43E+01	2.80E-01	1.00E+02	3.86E+01	2.35E+01
Selenium	2.30E+00	5.63E-01	6.20E+00	4.70E-01	1.97E-01	4.82E-02

TABLE M.60
Calculated Surface Soil (0-1 ft) Exposure - Mourning Dove
Group E - Disposal Pit A/B -SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP(1) (unitless)	BAF(2) (unitless)	Mourning Dove Max Exposure(3) (mg/kg/day)	Mourning Dove Mean Exposure(3) (mg/kg/day)
Thallium	1.80E+00	8.84E-01	4.00E-03	2.33E-01	1.84E-02	9.04E-03
Vanadium	2.40E+01	1.86E+01	1.00E-02	1.00E+00	4.23E-01	3.28E-01
Zinc	8.37E+01	5.99E+01	1.40E+00	2.90E-01	2.28E+00	1.63E+00

(1) SP soil-to-plant uptake factor
(2) BAF bioaccumulation factor
(3) Exposure calculated as
ED [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SEF / BW
Where, ED exposure dose
Cs Max or mean conc in soil (mg/kg)
CF plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP soil-to-plant uptake factor (Table M.45)
Ip plant-matter intake rate (0.00925 kg/day) (Table M.46)
BAF bioaccumulation factor (unitless) (Table M.45)
Ia animal-matter intake rate (0.0015 kg/day) (Table M.46)
Is incidental soil intake rate (0.00125 kg/day) (Table M.46)
SEF site foraging factor (1) (default)
BW body weight (0.157 kg) (Table M.46)

TABLE M.61
Calculated Subsurface Soil (0-4 ft) Exposure - Mourning Dove
Group E - Disposal Pit A/B -SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Mourning Dove Max Exposure[3] (mg/kg/day)	Mourning Dove Mean Exposure[3] (mg/kg/day)
Volatiles						
Acetone	5.20E-02	8.85E-03	5.33E+01	1.00E+00	1.64E-01	2.79E-02
Methyl butyl ketone	1.00E-03	6.00E-03	6.17E+00	1.00E+00	3.81E-04	2.29E-03
Total Xylenes	5.20E-01	2.82E-02	5.62E-01	6.00E+00	5.12E-02	2.78E-03
Trichloroethene	2.60E-02	6.85E-03	1.22E+00	1.00E+00	2.32E-03	6.11E-04
PAHs						
2-Methylnaphthalene	5.60E-02	4.62E-02	1.63E-01	3.42E-01	1.17E-03	9.62E-04
Acenapthylene	3.30E-02	4.59E-02	1.72E-01	1.00E+00	9.12E-04	1.27E-03
Benzo(a)anthracene	1.80E-01	3.82E-02	1.51E-02	1.25E-01	1.81E-03	3.84E-04
Benzo(a)pyrene	2.00E-01	3.94E-02	1.02E+00	4.50E+00	2.22E-02	4.38E-03
Benzo(b)fluoranthene	1.90E-01	3.89E-02	1.00E-02	3.19E-01	2.20E-03	4.52E-04
Benzo(g,h,i)perylene	1.20E-01	4.34E-02	3.05E-03	2.44E-01	1.26E-03	4.54E-04
Benzo(k)fluoranthene	1.60E-01	3.93E-02	4.25E-03	2.53E-01	1.70E-03	4.18E-04
Chrysene	2.40E-01	3.97E-02	2.00E-02	1.75E-01	2.59E-03	4.29E-04
Dibenz(a,h)anthracene	5.70E-02	4.44E-02	8.16E-03	1.75E-01	5.77E-04	4.49E-04
Fluoranthene	4.20E-01	4.24E-02	3.72E-02	7.92E-02	4.58E-03	4.62E-04
Fluorene	5.20E-02	4.53E-02	1.49E-01	3.42E-01	1.04E-03	9.04E-04
Indeno(1,2,3-cd)pyrene	1.20E-01	4.46E-02	1.37E-03	4.19E-01	1.45E-03	5.37E-04
Naphthalene	6.00E-01	7.72E-02	4.43E-01	3.42E-01	2.24E-02	2.88E-03
Phenanthrene	3.40E-01	4.46E-02	1.00E-01	1.22E-01	5.11E-03	6.70E-04
Pyrene	3.80E-01	4.36E-02	4.43E-02	9.20E-02	4.35E-03	5.00E-04
Semi-volatiles						
4-Methylphenol	1.40E-01	5.01E-02	4.20E+00	1.00E+00	3.71E-02	1.33E-02
Bis(2-ethylhexyl)phthalate	9.30E-01	1.27E-01	1.00E-02	1.20E+01	1.15E-01	1.56E-02
Butylbenzylphthalate	6.70E-03	5.13E-02	1.00E+00	1.20E+01	1.22E-03	9.31E-03
Carbazole	1.60E-02	5.17E-02	1.00E+00	1.00E+00	1.22E-03	3.95E-03
Di-n-octylphthalate	7.90E-03	4.70E-02	1.60E-04	1.20E+01	9.69E-04	5.76E-03
Dibenzofuran	5.60E-03	5.13E-02	1.51E-01	1.00E+00	1.48E-04	1.35E-03
Phenol	3.00E-01	5.09E-02	5.40E+00	1.00E+00	1.01E-01	1.71E-02
PCBs						
Arochlor 1254	3.00E+00	1.99E-01	1.00E-02	4.50E+00	1.55E-01	1.03E-02
Pesticides						
4,4'-DDE	4.20E-02	4.40E-03	1.80E-02	2.50E-01	4.79E-04	5.02E-05

TABLE M.61
Calculated Subsurface Soil (0-4 ft) Exposure - Mourning Dove
Group E - Disposal Pit A/B -SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Mourning Dove Max Exposure[3] (mg/kg/day)	Mourning Dove Mean Exposure[3] (mg/kg/day)
4,4'-DDT	4.20E-02	3.89E-03	1.00E-02	2.50E-01	4.59E-04	4.26E-05
BHC, alpha	2.80E-03	1.19E-03	3.00E-01	1.00E+00	9.85E-05	4.18E-05
Dieldrin	4.00E-02	4.30E-03	1.20E-01	2.50E-01	6.97E-04	7.49E-05
Endrin	1.60E-02	2.69E-03	5.80E-02	1.80E-01	2.10E-04	3.53E-05
Metals						
Aluminum	1.58E+04	1.09E+04	4.00E-03	1.50E-02	1.29E+02	8.87E+01
Cadmium	9.43E+01	4.93E+00	5.50E-01	2.80E-02	1.39E+00	7.25E-02
Chromium	8.33E+01	2.16E+01	7.50E-03	1.00E+00	1.47E+00	3.80E-01
Copper	2.15E+02	2.93E+01	4.00E-01	6.82E-01	4.13E+00	5.63E-01
Iron	2.71E+04	2.10E+04	4.00E-03	5.00E-02	2.30E+02	1.78E+02
Lead	3.66E+02	2.94E+01	5.80E-03	4.24E-01	4.42E+00	3.55E-01
Manganese	1.42E+03	5.83E+02	5.60E-01	1.00E+00	3.42E+01	1.41E+01
Mercury	1.10E-01	3.85E-02	9.00E-01	2.30E+01	2.62E-02	9.17E-03
Nickel	4.25E+01	2.54E+01	2.80E-01	1.00E+02	4.11E+01	2.46E+01
Selenium	2.30E+00	5.66E-01	6.20E+00	4.70E-01	1.97E-01	4.84E-02
Silver	1.19E+01	6.65E-01	3.00E-04	1.00E+00	2.08E-01	1.16E-02
Thallium	1.80E+00	7.60E-01	4.00E-03	2.33E-01	1.84E-02	7.78E-03
Vanadium	2.40E+01	1.82E+01	1.00E-02	1.00E+00	4.23E-01	3.21E-01
Zinc	2.85E+02	7.28E+01	1.40E+00	2.90E-01	7.76E+00	1.98E+00

(1) SP: soil-to-plant uptake factor
(2) BAF: bioaccumulation factor
(3) Exposure calculated as
ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW
Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.00925 kg/day) (Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.0015 kg/day) (Table M.46)
Is = incidental soil intake rate (0.00125 kg/day) (Table M.46)
SFF = site foraging factor (1) (default)
BW = body weight (0.157 kg) (Table M.46)

TABLE M.62
Calculated Surface Soil (0-1 ft) Hazard Quotients - Mourning Dove
Group E - Disposal Pit A/B -SEAD-12
Seneca Army Depot, NY

Constituent	Mourning Dove Max Exposure[1] (mg/kg/day)	Mourning Dove Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	1.64E-01	2.86E-02	4.51E+01	4.51E+02	3.6E-03	6.4E-04	3.6E-04	6.4E-05
Methyl butyl ketone	3.81E-04	2.12E-03	no data	no data	--	--	--	--
PAHs								
Benzo(a)anthracene	2.71E-04	2.99E-04	2.85E+01	2.85E+02	9.5E-06	1.0E-05	9.5E-07	1.0E-06
Benzo(b)fluoranthene	4.18E-04	3.45E-04	2.85E+01	2.85E+02	1.5E-05	1.2E-05	1.5E-06	1.2E-06
Benzo(g,h,i)perylene	2.41E-04	3.11E-04	2.85E+01	2.85E+02	8.5E-06	1.1E-05	8.5E-07	1.1E-06
Benzo(k)fluoranthene	2.76E-04	3.41E-04	2.85E+01	2.85E+02	9.7E-06	1.2E-05	9.7E-07	1.2E-06
Chrysene	5.51E-04	2.98E-04	2.85E+01	2.85E+02	1.9E-05	1.0E-05	1.9E-06	1.0E-06
Dibenz(a,h)anthracene	1.62E-04	3.59E-04	2.85E+01	2.85E+02	5.7E-06	1.3E-05	5.7E-07	1.3E-06
Fluorene	1.08E-04	7.42E-04	2.85E+01	2.85E+02	3.8E-06	2.6E-05	3.8E-07	2.6E-06
Indeno(1,2,3-cd)pyrene	2.17E-04	3.80E-04	2.85E+01	2.85E+02	7.6E-06	1.3E-05	7.6E-07	1.3E-06
Semi-volatiles								
Bis(2-ethylhexyl)phthalate	2.59E-02	5.77E-03	1.11E+00	1.11E+01	2.3E-02	5.2E-03	2.3E-03	5.2E-04
Butylbenzylphthalate	1.22E-03	6.76E-03	no data	no data	--	--	--	--
Carbazole	1.22E-03	2.89E-03	no data	no data	--	--	--	--
Di-n-octylphthalate	9.56E-04	4.31E-03	1.11E+00	1.11E+00	8.6E-04	3.9E-03	8.6E-04	3.9E-03
Dibenzofuran	1.48E-04	9.80E-04	2.18E-01	2.18E-01	6.8E-04	4.5E-03	6.8E-04	4.5E-03
PCBs								
Arochlor 1254	3.45E-02	4.71E-03	1.80E-01	1.80E+00	1.9E-01	2.6E-02	1.9E-02	2.6E-03
Pesticides								
4,4'-DDE	1.71E-04	3.47E-05	2.80E-03	2.80E-02	6.1E-02	1.2E-02	6.1E-03	1.2E-03
4,4'-DDT	4.59E-04	5.08E-05	2.80E-03	2.80E-02	1.6E-01	1.8E-02	1.6E-02	1.8E-03
Dieldrin	2.44E-04	5.29E-05	7.70E-02	7.70E-01	3.2E-03	6.9E-04	3.2E-04	6.9E-05
Endrin	5.50E-05	2.84E-05	3.00E-01	3.00E+00	1.8E-04	9.5E-05	1.8E-05	9.5E-06
Metals								
Aluminum	1.29E+02	9.07E+01	1.10E+02	1.10E+03	**1.2E+00**	8.3E-01	1.2E-01	8.2E-02
Cadmium	4.71E-02	4.84E-03	1.45E+00	2.00E+01	3.2E-02	3.3E-03	2.4E-03	2.4E-04
Chromium	4.10E-01	3.02E-01	1.00E+00	5.00E+00	4.1E-01	3.0E-01	8.2E-02	6.0E-02
Iron	2.30E+02	1.78E+02	no data	No data	--	--	--	--
Manganese	3.42E+01	1.53E+01	9.77E+02	9.77E+03	3.5E-02	1.6E-02	3.5E-03	1.6E-03

TABLE M.62
Calculated Surface Soil (0-1 ft) Hazard Quotients - Mourning Dove
Group E - Disposal Pit A/B -SEAD-12
Seneca Army Depot, NY

Constituent	Mourning Dove Max Exposure[1] (mg/kg/day)	Mourning Dove Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Mercury	2.62E-02	9.85E-03	3.25E+00	3.25E+01	8.1E-03	3.0E-03	8.1E-04	3.0E-04
Nickel	3.86E+01	2.35E+01	7.74E+01	1.07E+02	5.0E-01	3.0E-01	3.6E-01	2.2E-01
Selenium	1.97E-01	4.82E-02	4.00E-01	8.00E-01	4.9E-01	1.2E-01	2.5E-01	6.0E-02
Thallium	1.84E-02	9.04E-03	9.50E-02	9.50E-02	1.9E-01	9.5E-02	1.9E-01	9.5E-02
Vanadium	4.23E-01	3.28E-01	1.14E+01	1.14E+02	3.7E-02	2.9E-02	3.7E-03	2.9E-03
Zinc	2.28E+00	1.63E+00	1.45E+01	1.31E+02	1.6E-01	1.1E-01	1.7E-02	1.2E-02

(1) Receptor exposure from Table M.60
(2) NOAEL toxicity reference value from Table M.40
(3) LOAEL toxicity reference value from Table M.41
(4) Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ >= 1.

TABLE M.63
Calculated Subsurface Soil (0-4 ft) Hazard Quotients - Mourning Dove
Group E - Disposal Pit A/B -SEAD-12
Seneca Army Depot, NY

Constituent	Mourning Dove Max Exposure[1] (mg/kg/day)	Mourning Dove Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	1.64E-01	2.79E-02	4.51E+01	4.51E+02	3.6E-03	6.2E-04	3.6E-04	6.2E-05
Methyl butyl ketone	3.81E-04	2.29E-03	no data	no data	--	--	--	--
Total Xylenes	5.12E-02	2.78E-03	3.06E+02	3.06E+03	1.7E-04	9.1E-06	1.7E-05	9.1E-07
Trichloroethene	2.32E-03	6.11E-04	no data	no data	--	--	--	--
PAHs								
2-Methylnaphthalene	1.17E-03	9.62E-04	2.85E+01	2.85E+02	4.1E-05	3.4E-05	4.1E-06	3.4E-06
Acenapthylene	9.12E-04	1.27E-03	2.85E+01	2.85E+02	3.2E-05	4.5E-05	3.2E-06	4.5E-06
Benzo(a)anthracene	1.81E-03	3.84E-04	2.85E+01	2.85E+02	6.3E-05	1.3E-05	6.3E-06	1.3E-06
Benzo(a)pyrene	2.22E-02	4.38E-03	2.85E+01	2.85E+02	7.8E-04	1.5E-04	7.8E-05	1.5E-05
Benzo(b)fluoranthene	2.20E-03	4.52E-04	2.85E+01	2.85E+02	7.7E-05	1.6E-05	7.7E-06	1.6E-06
Benzo(g,h,i)perylene	1.26E-03	4.54E-04	2.85E+01	2.85E+02	4.4E-05	1.6E-05	4.4E-06	1.6E-06
Benzo(k)fluoranthene	1.70E-03	4.18E-04	2.85E+01	2.85E+02	6.0E-05	1.5E-05	6.0E-06	1.5E-06
Chrysene	2.59E-03	4.29E-04	2.85E+01	2.85E+02	9.1E-05	1.5E-05	9.1E-06	1.5E-06
Dibenz(a,h)anthracene	5.77E-04	4.49E-04	2.85E+01	2.85E+02	2.0E-05	1.6E-05	2.0E-06	1.6E-06
Fluoranthene	4.58E-03	4.62E-04	2.85E+01	2.85E+02	1.6E-04	1.6E-05	1.6E-05	1.6E-06
Fluorene	1.04E-03	9.04E-04	2.85E+01	2.85E+02	3.6E-05	3.2E-05	3.6E-06	3.2E-06
Indeno(1,2,3-cd)pyrene	1.45E-03	5.37E-04	2.85E+01	2.85E+02	5.1E-05	1.9E-05	5.1E-06	1.9E-06
Naphthalene	2.24E-02	2.88E-03	2.85E+01	2.85E+02	7.9E-04	1.0E-04	7.9E-05	1.0E-05
Phenanthrene	5.11E-03	6.70E-04	2.85E+01	2.85E+02	1.8E-04	2.4E-05	1.8E-05	2.4E-06
Pyrene	4.35E-03	5.00E-04	2.85E+01	2.85E+02	1.5E-04	1.8E-05	1.5E-05	1.8E-06
Semi-volatiles								
4-Methylphenol	3.71E-02	1.33E-02	2.06E-01	2.06E-01	1.8E-01	6.4E-02	1.8E-01	6.4E-02
Bis(2-ethylhexyl)phthalate	1.15E-01	1.56E-02	1.11E+00	1.11E+01	1.0E-01	1.4E-02	1.0E-02	1.4E-03
Butylbenzylphthalate	1.22E-03	9.31E-03	no data	no data	--	--	--	--
Carbazole	1.22E-03	3.95E-03	no data	no data	--	--	--	--
Di-n-octylphthalate	9.69E-04	5.76E-03	1.11E+00	1.11E+00	8.7E-04	5.2E-03	8.7E-04	5.2E-03
Dibenzofuran	1.48E-04	1.35E-03	2.18E-01	2.18E-01	6.8E-04	6.2E-03	6.8E-04	6.2E-03
Phenol	1.01E-01	1.71E-02	no data	no data	--	--	--	--
PCBs								
Arochlor 1254	1.55E-01	1.03E-02	1.80E-01	1.80E+00	8.6E-01	5.7E-02	8.6E-02	5.7E-03

TABLE M.63
Calculated Subsurface Soil (0-4 ft) Hazard Quotients - Mourning Dove
Group E - Disposal Pit A/B -SEAD-12
Seneca Army Depot, NY

Constituent	Mourning Dove Max Exposure[1] (mg/kg/day)	Mourning Dove Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Pesticides								
4,4'-DDE	4.79E-04	5.02E-05	2.80E-03	2.80E-02	1.7E-01	1.8E-02	1.7E-02	1.8E-03
4,4'-DDT	4.59E-04	4.26E-05	2.80E-03	2.80E-02	1.6E-01	1.5E-02	1.6E-02	1.5E-03
BHC, alpha	9.85E-05	4.18E-05	5.60E-01	2.25E+00	1.8E-04	7.5E-05	4.4E-05	1.9E-05
Dieldrin	6.97E-04	7.49E-05	7.70E-02	7.70E-01	9.0E-03	9.7E-04	9.0E-04	9.7E-05
Endrin	2.10E-04	3.53E-05	3.00E-01	3.00E+00	7.0E-04	1.2E-04	7.0E-05	1.2E-05
Metals								
Aluminum	1.29E+02	8.87E+01	1.10E+02	1.10E+03	**1.2E+00**	8.1E-01	1.2E-01	8.1E-02
Cadmium	1.39E+00	7.25E-02	1.45E+00	2.00E+01	9.6E-01	5.0E-02	6.9E-02	3.6E-03
Chromium	1.47E+00	3.80E-01	1.00E+00	5.00E+00	**1.5E+00**	3.8E-01	2.9E-01	7.6E-02
Copper	4.13E+00	5.63E-01	4.70E+01	4.70E+02	8.8E-02	1.2E-02	8.8E-03	1.2E-03
Iron	2.30E+02	1.78E+02	no data	No data	--	--	--	--
Lead	4.42E+00	3.55E-01	1.13E+00	1.13E+01	**3.9E+00**	3.1E-01	3.9E-01	3.1E-02
Manganese	3.42E+01	1.41E+01	9.77E+02	9.77E+03	3.5E-02	1.4E-02	3.5E-03	1.4E-03
Mercury	2.62E-02	9.17E-03	3.25E+00	3.25E+01	8.1E-03	2.8E-03	8.1E-04	2.8E-04
Nickel	4.11E+01	2.46E+01	7.74E+01	1.07E+02	5.3E-01	3.2E-01	3.8E-01	2.3E-01
Selenium	1.97E-01	4.84E-02	4.00E-01	8.00E-01	4.9E-01	1.2E-01	2.5E-01	6.0E-02
Silver	2.08E-01	1.16E-02	no data	No data	--	--	--	--
Thallium	1.84E-02	7.78E-03	9.50E-02	9.50E-02	1.9E-01	8.2E-02	1.9E-01	8.2E-02
Vanadium	4.23E-01	3.21E-01	1.14E+01	1.14E+02	3.7E-02	2.8E-02	3.7E-03	2.8E-03
Zinc	7.76E+00	1.98E+00	1.45E+01	1.31E+02	5.4E-01	1.4E-01	5.9E-02	1.5E-02

(1) Receptor exposure from Table M.62
(2) NOAEL toxicity reference value from Table M.40
(3) LOAEL toxicity reference value from Table M.41
(4) Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ >= 1.

TABLE M.64

Invertebrate Risk Screening for COPCs
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Class	Analyte	Surface Soil (0-1 ft)			Mixed Surface and Subsurface Soil (0-4 ft)			Comparison to Benchmark[1]		
		Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Earth-worms	Micro-organisms	Exceeds Benchmark?
Volatiles	Acetone	9.07E-03	5.20E-02	MW12-8	8.85E-03	5.20E-02	MW12-8	na	na	No Criteria
	Methyl butyl ketone	5.57E-03	1.00E-03	SB12-4	6.00E-03	1.00E-03	SB12-4	na	na	No Criteria
	Total Xylenes	--	--	--	2.82E-02	5.20E-01	TP12-2B	na	na	No Criteria
	Trichloroethene	--	--	--	6.85E-03	2.60E-02	TP12A-1	na	na	No Criteria
PAHs	2-Methylnaphthalene	--	--	--	4.62E-02	5.60E-02	TP12-2B	na	na	No Criteria
	Acenaphthylene	--	--	--	4.59E-02	3.30E-02	TP12A-1	na	na	No Criteria
	Benzo(a)anthracene	2.98E-02	2.70E-02	SS12-183	3.82E-02	1.80E-01	TP12A-1	na	na	No Criteria
	Benzo(a)pyrene	--	--	--	3.94E-02	2.00E-01	TP12A-1	na	na	No Criteria
	Benzo(b)fluoranthene	2.97E-02	3.60E-02	SS12-183	3.89E-02	1.90E-01	TP12A-1	na	na	No Criteria
	Benzo(ghi)perylene	2.97E-02	2.30E-02	SB12-1	4.34E-02	1.20E-01	TP12A-1	na	na	No Criteria
	Benzo(k)fluoranthene	3.20E-02	2.60E-02	SS12-183	3.93E-02	1.60E-01	TP12A-1	na	na	No Criteria
	Chrysene	2.76E-02	5.10E-02	SS12-183	3.97E-02	2.40E-01	TP12A-1	na	na	No Criteria
	Dibenz(a,h)anthracene	3.55E-02	1.60E-02	SB12-1	4.44E-02	5.70E-02	TP12A-1	na	na	No Criteria
	Fluoranthene	--	--	--	4.24E-02	4.20E-01	TP12A-1	na	na	No Criteria
	Fluorene	3.71E-02	5.40E-03	SB12-1	4.53E-02	5.20E-02	TP12A-1	30	30	No
	Indeno(1,2,3-cd)pyrene	3.15E-02	1.80E-02	SB12-1	4.46E-02	1.20E-01	TP12A-1	na	na	No Criteria
	Naphthalene	--	--	--	7.72E-02	6.00E-01	TP12-2B	na	na	No Criteria
	Phenanthrene	--	--	--	4.46E-02	3.40E-01	TP12A-1	na	na	No Criteria
	Pyrene	--	--	--	4.36E-02	3.80E-01	TP12A-1	na	na	No Criteria
Semi-vols	4-Methylphenol	--	--	--	5.01E-02	1.40E-01	TP12A-1	na	na	No Criteria
	Bis(2-Ethylhexyl)phthalate	4.68E-02	2.10E-01	MW12-12	1.27E-01	9.30E-01	TP12-2B	na	na	No Criteria
	Butylbenzylphthalate	3.72E-02	6.70E-03	SB12-1	5.13E-02	6.70E-03	SB12-1	na	na	No Criteria
	Carbazole	3.78E-02	1.60E-02	SB12-1	5.17E-02	1.60E-02	SB12-1	na	na	No Criteria
	Di-n-octylphthalate	3.52E-02	7.80E-03	SB12-1	4.70E-02	7.90E-03	SB12-3	na	na	No Criteria
	Dibenzofuran	3.71E-02	5.60E-03	SB12-1	5.13E-02	5.60E-03	SB12-1	na	na	No Criteria
	Phenol	--	--	--	5.09E-02	3.00E-01	TP12A-1	30	100	No
PCBs	Aroclor-1254	9.14E-02	6.70E-01	SS12-17	1.99E-01	3.00E+00	SB12-3	na	na	No Criteria
Pesticides	4,4'-DDE	3.04E-03	1.50E-02	SS12-17	4.40E-03	4.20E-02	SB12-3	na	na	No Criteria
	4,4'-DDT	4.64E-03	4.20E-02	SS12-17	3.89E-03	4.20E-02	SS12-17	na	na	No Criteria
	Alpha-BHC	--	--	--	1.19E-03	2.80E-03	TP12-2C	na	na	No Criteria
	Dieldrin	3.04E-03	1.40E-02	SS12-17	4.30E-03	4.00E-02	SB12-3	na	na	No Criteria
	Endrin	2.17E-03	4.20E-03	SS12-17	2.69E-03	1.60E-02	TP12A-2	na	na	No Criteria

TABLE M.64

Invertebrate Risk Screening for COPCs
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

		Surface Soil (0-1 ft)			Mixed Surface and Subsurface Soil (0-4 ft)			Comparison to Benchmark[1]		
Class	Analyte	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Earth-worms	Micro-organisms	Exceeds Benchmark?
Metals	Aluminum	1.11E+04	1.58E+04	SB12-2B	1.09E+04	1.58E+04	TP12A-2	na	600	Yes
	Cadmium	3.29E-01	3.20E+00	SB12-2	4.93E+00	9.43E+01	TP12A-1	20	20	Yes
	Chromium	1.72E+01	2.33E+01	SB12-2B	2.16E+01	8.33E+01	TP12A-1	na	10	Yes
	Copper	--	--	--	2.93E+01	2.15E+02	TP12A-1	50	100	Yes
	Iron	2.09E+04	2.71E+04	MW12-12	2.10E+04	2.71E+04	SB12-3	na	200	Yes
	Lead	--	--	--	2.94E+01	3.66E+02	TP12A-1	500	900	No
	Manganese	6.36E+02	1.42E+03	SB12-2B	5.83E+02	1.42E+03	SB12-2B	na	100	Yes
	Mercury	4.13E-02	1.10E-01	MW12-10	3.85E-02	1.10E-01	MW12-10	na	30	No
	Nickel	2.43E+01	3.99E+01	MW12-12	2.54E+01	4.25E+01	TP12A-2	200	90	No
	Selenium	5.63E-01	2.30E+00	SB12-1	5.66E-01	2.30E+00	SB12-1	70	100	No
	Silver	--	--	--	6.65E-01	1.19E+01	TP12A-1	na	50	No
	Thallium	8.84E-01	1.80E+00	MW12-8	7.60E-01	1.80E+00	MW12-8	na	na	No Criteria
	Vanadium	1.86E+01	2.40E+01	SB12-4	1.82E+01	2.40E+01	MW12-12	na	20	Yes
	Zinc	5.99E+01	8.37E+01	SB12-2	7.28E+01	2.85E+02	TP12A-2	200	100	Yes

Notes:

-- analyte is not a COPC in this medium.

1 Will, M.E. and G.W. Suter II, *Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process*, Martin Marietta Environmental Restoration Program, September 1994.

Earthworms-Screening benchmark concentrations for the toxicity of chemicals to earthworms.

Microorganisms-Screening benchmark concentrations for the toxicity of chemicals to soil microorganisms and microbial processes.

na criteria is not available.

TABLE M.65
Calculated Surface Soil (0-1' bls) Exposure - Meadow Vole
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)
Volatiles						
Acetone	6.10E-02	1.06E-02	5.33E+01	3.90E-01	6.78E-03	1.18E-03
PAHs						
2-Methylnaphthalene	7.80E-03	4.66E-02	1.63E-01	3.42E-01	1.26E-05	7.53E-05
Acenaphthene	4.40E-02	3.36E-02	2.10E-01	3.42E-01	7.53E-05	5.75E-05
Benzo(a)anthracene	2.00E-01	3.77E-02	1.51E-02	1.25E-01	2.52E-04	4.75E-05
Benzo(b)fluoranthene	2.00E-01	3.94E-02	1.00E-02	3.20E-01	2.59E-04	5.10E-05
Benzo(g,h,i)perylene	3.50E-02	2.58E-02	3.05E-03	2.40E-01	4.42E-05	3.26E-05
Benzo(k)fluoranthene	1.70E-01	3.57E-02	4.25E-03	2.53E-01	2.15E-04	4.52E-05
Chrysene	3.10E-01	4.57E-02	2.00E-02	1.75E-01	3.97E-04	5.86E-05
Dibenz(a,h)anthracene	4.30E-02	2.86E-02	8.16E-03	1.75E-01	5.41E-05	3.59E-05
Fluoranthene	3.00E-01	6.12E-02	3.72E-02	7.92E-01	4.38E-04	8.93E-05
Fluorene	3.50E-02	3.88E-02	1.49E-01	3.42E-01	5.55E-05	6.15E-05
Indeno(1,2,3-cd)pyrene	6.90E-02	2.83E-02	1.37E-03	4.19E-01	8.96E-05	3.68E-05
Phenanthrene	2.80E-01	4.02E-02	1.00E-01	1.22E-01	4.02E-04	5.77E-05
Pyrene	3.10E-01	6.25E-02	4.43E-02	9.20E-02	4.07E-04	8.20E-05
Semi-volatiles						
Bis(2-ethylhexyl)phthalate	5.80E-03	4.80E-02	1.00E-02	1.20E+01	2.31E-05	1.91E-04
Butylbenzylphthalate	4.10E-03	4.65E-02	1.00E+00	1.00E+00	1.43E-05	1.62E-04
Carbazole	4.00E-02	3.20E-02	1.00E+00	1.00E+00	1.40E-04	1.12E-04
Di-n-octylphthalate	1.50E-02	4.32E-02	1.60E-04	4.90E+03	1.69E-02	4.88E-02
Pesticides						
4,4'-DDD	1.40E-02	3.33E-03	1.34E-02	1.00E-01	1.74E-05	4.17E-06
4,4'-DDE	6.40E-03	2.51E-03	1.80E-02	2.50E-02	7.95E-06	3.12E-06
4,4'-DDT	3.80E-03	2.18E-03	1.00E-02	1.00E-01	4.73E-06	2.71E-06
Metals						
Aluminum	1.41E+04	1.05E+04	4.00E-03	1.50E-02	1.70E+01	1.27E+01
Chromium	2.46E+01	1.66E+01	7.50E-03	7.75E-01	3.40E-02	2.30E-02

TABLE M.65
Calculated Surface Soil (0-1' bls) Exposure - Meadow Vole
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)
Iron	2.61E+04	2.07E+04	4.00E-03	5.00E-02	3.17E+01	2.51E+01
Manganese	7.00E+02	5.14E+02	5.60E-01	1.00E+00	1.16E+00	8.54E-01
Nickel	3.49E+01	2.23E+01	2.80E-01	1.00E+02	8.49E-01	5.43E-01
Selenium	1.20E+00	6.07E-01	6.20E+00	5.00E+00	5.89E-03	2.98E-03
Thallium	1.70E+00	8.80E-01	4.00E-03	2.33E-01	2.13E-03	1.11E-03
Vanadium	2.46E+01	1.84E+01	1.00E-02	1.00E+00	3.53E-02	2.64E-02
Zinc	6.56E+02	1.04E+02	1.40E+00	9.90E+00	2.66E+00	4.20E-01

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW

Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.0001031 kg/day) (from Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.0000115 kg/day) (Table M.46)
Is = incidental soil intake rate (0.00006 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.05 kg) (Table M.46)

TABLE M.66
Calculated Mixed Soil (0-4' bls) Exposure - Meadow Vole
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)
Volatiles						
Acetone	6.10E-02	8.87E-03	5.33E+01	3.90E-01	6.78E-03	9.86E-04
Trichloroethene	2.00E-03	5.97E-03	1.22E+00	1.00E+00	7.88E-06	2.35E-05
PAHs						
2-Methylnaphthalene	7.80E-03	6.96E-02	1.63E-01	3.42E-01	1.26E-05	1.12E-04
Acenaphthene	4.40E-02	6.42E-02	2.10E-01	3.42E-01	7.53E-05	1.10E-04
Benzo(a)anthracene	2.00E-01	5.75E-02	1.51E-02	1.25E-01	2.52E-04	7.24E-05
Benzo(a)pyrene	1.80E-01	5.39E-02	1.02E+00	4.50E+00	7.81E-04	2.34E-04
Benzo(b)fluoranthene	3.20E-01	6.39E-02	1.00E-02	3.20E-01	4.14E-04	8.27E-05
Benzo(g,h,i)perylene	9.80E-02	5.04E-02	3.05E-03	2.40E-01	1.24E-04	6.36E-05
Benzo(k)fluoranthene	1.70E-01	6.30E-02	4.25E-03	2.53E-01	2.15E-04	7.98E-05
Chrysene	3.10E-01	6.42E-02	2.00E-02	1.75E-01	3.97E-04	8.22E-05
Dibenz(a,h)anthracene	9.90E-02	5.63E-02	8.16E-03	1.75E-01	1.24E-04	7.07E-05
Fluoranthene	3.20E-01	8.06E-02	3.72E-02	7.92E-01	4.67E-04	1.18E-04
Fluorene	3.50E-02	6.68E-02	1.49E-01	3.42E-01	5.55E-05	1.06E-04
Indeno(1,2,3-cd)pyrene	1.40E-01	5.42E-02	1.37E-03	4.19E-01	1.82E-04	7.04E-05
Phenanthrene	2.80E-01	5.92E-02	1.00E-01	1.22E-01	4.02E-04	8.49E-05
Pyrene	3.10E-01	7.68E-02	4.43E-02	9.20E-02	4.07E-04	1.01E-04
Semi-volatiles						
bis(2-Ethylhexyl)phthalate	1.60E-02	7.86E-02	1.00E-02	1.20E+01	6.37E-05	3.13E-04
Butylbenzylphthalate	3.00E-02	6.91E-02	1.00E+00	1.00E+00	1.05E-04	2.41E-04
Carbazole	4.00E-02	6.25E-02	1.00E+00	1.00E+00	1.40E-04	2.18E-04
Dibenzofuran	4.10E-03	7.15E-02	1.51E-01	1.00E+00	7.14E-06	1.25E-04
Di-n-octylphthalate	1.50E-02	6.99E-02	1.60E-04	4.90E+03	1.69E-02	7.89E-02
Pesticides						
4,4'-DDD	1.40E-02	2.70E-03	1.34E-02	1.00E-01	1.74E-05	3.38E-06
4,4'-DDE	6.40E-03	2.33E-03	1.80E-02	2.50E-02	7.95E-06	2.90E-06
4,4'-DDT	4.40E-03	2.28E-03	1.00E-02	1.00E-01	5.47E-06	2.83E-06
Metals						
Aluminum	1.86E+04	1.06E+04	4.00E-03	1.50E-02	2.24E+01	1.28E+01
Cadmium	3.60E+00	2.66E-01	5.50E-01	2.15E-02	5.15E-03	3.81E-04
Chromium	2.97E+01	1.69E+01	7.50E-03	7.75E-01	4.10E-02	2.34E-02
Copper	7.45E+01	2.23E+01	4.00E-01	6.82E-01	1.13E-01	3.39E-02

TABLE M.66
Calculated Mixed Soil (0-4' bls) Exposure - Meadow Vole
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)
Iron	5.10E+04	2.17E+04	4.00E-03	5.00E-02	6.19E+01	2.63E+01
Lead	9.09E+01	2.02E+01	5.80E-03	2.10E+00	1.53E-01	3.41E-02
Manganese	8.57E+02	4.90E+02	5.60E-01	1.00E+00	1.42E+00	8.14E-01
Mercury	1.50E-01	4.83E-02	9.00E-01	2.30E+01	1.03E-03	3.31E-04
Nickel	4.55E+01	2.50E+01	2.80E-01	1.00E+02	1.11E+00	6.07E-01
Selenium	1.90E+00	7.11E-01	6.20E+00	5.00E+00	9.32E-03	3.49E-03
Thallium	1.70E+00	7.54E-01	4.00E-03	2.33E-01	2.13E-03	9.47E-04
Vanadium	3.64E+01	1.89E+01	1.00E-02	1.00E+00	5.22E-02	2.70E-02
Zinc	6.08E+03	2.96E+02	1.40E+00	9.90E+00	2.47E+01	1.20E+00

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as
ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW
Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2)
(inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.0000115 kg/day) (Table M.46)
Is = incidental soil intake rate (0.00006 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.05 kg) (Table M.46)

TABLE M.67
Calculated Surface Soil (0-1' bls) Hazard Quotients - Meadow Vole
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Vole Max Exposure[1] (mg/kg/day)	Vole Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	6.78E-03	1.18E-03	1.00E+02	5.00E+02	6.8E-05	1.2E-05	1.4E-05	2.4E-06
PAHs								
2-Methylnaphthalene*	1.26E-05	7.53E-05	7.16E+00	7.16E+01	1.8E-06	1.1E-05	1.8E-07	1.1E-06
Acenaphthene	7.53E-05	5.75E-05	1.75E+01	1.75E+02	4.3E-06	3.3E-06	4.3E-07	3.3E-07
Benzo(a)anthracene	2.52E-04	4.75E-05	1.00E+00	1.00E+01	2.5E-04	4.7E-05	2.5E-05	4.7E-06
Benzo(b)fluoranthene	2.59E-04	5.10E-05	1.00E+00	1.00E+01	2.6E-04	5.1E-05	2.6E-05	5.1E-06
Benzo(g,h,i)perylene	4.42E-05	3.26E-05	1.00E+00	1.00E+01	4.4E-05	3.3E-05	4.4E-06	3.3E-06
Benzo(k)fluoranthene	2.15E-04	4.52E-05	1.00E+00	1.00E+01	2.2E-04	4.5E-05	2.2E-05	4.5E-06
Chrysene	3.97E-04	5.86E-05	1.00E+00	1.00E+01	4.0E-04	5.9E-05	4.0E-05	5.9E-06
Dibenz(a,h)anthracene	5.41E-05	3.59E-05	1.00E+00	1.00E+01	5.4E-05	3.6E-05	5.4E-06	3.6E-06
Fluoranthene	4.38E-04	8.93E-05	1.25E+01	1.25E+02	3.5E-05	7.1E-06	3.5E-06	7.1E-07
Fluorene*	5.55E-05	6.15E-05	1.25E+01	1.25E+02	4.4E-06	4.9E-06	4.4E-07	4.9E-07
Indeno(1,2,3-cd)pyrene	8.96E-05	3.68E-05	1.00E+00	1.00E+01	9.0E-05	3.7E-05	9.0E-06	3.7E-06
Phenanthrene	4.02E-04	5.77E-05	1.00E+00	1.00E+01	4.0E-04	5.8E-05	4.0E-05	5.8E-06
Pyrene	4.07E-04	8.20E-05	1.00E+00	1.00E+01	4.1E-04	8.2E-05	4.1E-05	8.2E-06
Semi-volatiles								
Bis(2-ethylhexyl)phthalate*	2.31E-05	1.91E-04	1.83E+01	1.83E+02	1.3E-06	1.0E-05	1.3E-07	1.0E-06
Butylbenzylphthalate*	1.43E-05	1.62E-04	1.59E+02	4.70E+02	9.0E-08	1.0E-06	3.0E-08	3.5E-07
Carbazole	1.40E-04	1.12E-04	5.00E+00	5.00E+00	2.8E-05	2.2E-05	2.8E-05	2.2E-05
Di-n-octylphthalate*	1.69E-02	4.88E-02	6.51E+01	6.51E+01	2.6E-04	7.5E-04	2.6E-04	7.5E-04
Pesticides								
4,4'-DDD	1.74E-05	4.17E-06	8.00E-01	4.00E+00	2.2E-05	5.2E-06	4.4E-06	1.0E-06
4,4'-DDE	7.95E-06	3.12E-06	8.00E-01	4.00E+00	9.9E-06	3.9E-06	2.0E-06	7.8E-07
4,4'-DDT	4.73E-06	2.71E-06	8.00E-01	4.00E+00	5.9E-06	3.4E-06	1.2E-06	6.8E-07
Metals								
Aluminum	1.70E+01	1.27E+01	1.93E+00	1.93E+01	**8.8E+00**	**6.6E+00**	8.8E-01	6.6E-01
Chromium	3.40E-02	2.30E-02	2.74E+03	2.74E+04	1.2E-05	8.4E-06	1.2E-06	8.4E-07
Iron	3.17E+01	2.51E+01	2.55E+01	2.55E+01	**1.2E+00**	9.9E-01	**1.2E+00**	9.9E-01
Manganese	1.16E+00	8.54E-01	8.80E+01	2.84E+02	1.3E-02	9.7E-03	4.1E-03	3.0E-03
Nickel	8.49E-01	5.43E-01	4.00E+01	8.00E+01	2.1E-02	1.4E-02	1.1E-02	6.8E-03
Selenium	5.89E-03	2.98E-03	2.00E-01	3.30E-01	2.9E-02	1.5E-02	1.8E-02	9.0E-03

TABLE M.67
Calculated Surface Soil (0-1' bls) Hazard Quotients - Meadow Vole
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Vole Max Exposure[1] (mg/kg/day)	Vole Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Thallium	2.13E-03	1.11E-03	7.40E-02	7.40E-01	2.9E-02	1.5E-02	2.9E-03	1.5E-03
Vanadium	3.53E-02	2.64E-02	2.10E-01	2.10E+00	1.7E-01	1.3E-01	1.7E-02	1.3E-02
Zinc	2.66E+00	4.20E-01	1.60E+02	3.20E+02	1.7E-02	2.6E-03	8.3E-03	1.3E-03

1 Receptor exposure from Table M.65
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ > 1.
* Mean is greater than the maximum because of using 1/2 detection limit to calculate.

TABLE M.68
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Meadow Vole
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Vole Max Exposure[1] (mg/kg/day)	Vole Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	6.78E-03	9.86E-04	1.00E+02	5.00E+02	6.8E-05	9.9E-06	1.4E-05	2.0E-06
Trichloroethene*	7.88E-06	2.35E-05	7.00E-01	7.00E+00	1.1E-05	3.4E-05	1.1E-06	3.4E-06
PAHs								
2-Methylnaphthalene*	1.26E-05	1.12E-04	7.16E+00	7.16E+01	1.8E-06	1.6E-05	1.8E-07	1.6E-06
Acenaphthene*	7.53E-05	1.10E-04	1.75E+01	1.75E+02	4.3E-06	6.3E-06	4.3E-07	6.3E-07
Benzo(a)anthracene	2.52E-04	7.24E-05	1.00E+00	1.00E+01	2.5E-04	7.2E-05	2.5E-05	7.2E-06
Benzo(a)pyrene	7.81E-04	2.34E-04	1.00E+00	1.00E+01	7.8E-04	2.3E-04	7.8E-05	2.3E-05
Benzo(b)fluoranthene	4.14E-04	8.27E-05	1.00E+00	1.00E+01	4.1E-04	8.3E-05	4.1E-05	8.3E-06
Benzo(g,h,i)perylene	1.24E-04	6.36E-05	1.00E+00	1.00E+01	1.2E-04	6.4E-05	1.2E-05	6.4E-06
Benzo(k)fluoranthene	2.15E-04	7.98E-05	1.00E+00	1.00E+01	2.2E-04	8.0E-05	2.2E-05	8.0E-06
Chrysene	3.97E-04	8.22E-05	1.00E+00	1.00E+01	4.0E-04	8.2E-05	4.0E-05	8.2E-06
Dibenz(a,h)anthracene	1.24E-04	7.07E-05	1.00E+00	1.00E+01	1.2E-04	7.1E-05	1.2E-05	7.1E-06
Fluoranthene	4.67E-04	1.18E-04	1.25E+01	1.25E+02	3.7E-05	9.4E-06	3.7E-06	9.4E-07
Fluorene*	5.55E-05	1.06E-04	1.25E+01	1.25E+02	4.4E-06	8.5E-06	4.4E-07	8.5E-07
Indeno(1,2,3-cd)pyrene	1.82E-04	7.04E-05	1.00E+00	1.00E+01	1.8E-04	7.0E-05	1.8E-05	7.0E-06
Phenanthrene	4.02E-04	8.49E-05	1.00E+00	1.00E+01	4.0E-04	8.5E-05	4.0E-05	8.5E-06
Pyrene	4.07E-04	1.01E-04	1.00E+00	1.00E+01	4.1E-04	1.0E-04	4.1E-05	1.0E-05
Semi-volatiles								
bis(2-Ethylhexyl)phthalate*	6.37E-05	3.13E-04	1.83E+01	1.83E+02	3.5E-06	1.7E-05	3.5E-07	1.7E-06
Butylbenzylphthalate*	1.05E-04	2.41E-04	1.59E+02	4.70E+02	6.6E-07	1.5E-06	2.2E-07	5.1E-07
Carbazole*	1.40E-04	2.18E-04	5.00E+00	5.00E+00	2.8E-05	4.4E-05	2.8E-05	4.4E-05
Dibenzofuran*	7.14E-06	1.25E-04	No data	No data	--	--	--	--
Di-n-octylphthalate*	1.69E-02	7.89E-02	6.51E+01	6.51E+01	2.6E-04	1.2E-03	2.6E-04	1.2E-03
Pesticides								
4,4'-DDD	1.74E-05	3.38E-06	8.00E-01	4.00E+00	2.2E-05	4.2E-06	4.4E-06	8.4E-07
4,4'-DDE	7.95E-06	2.90E-06	8.00E-01	4.00E+00	9.9E-06	3.6E-06	2.0E-06	7.2E-07
4,4'-DDT	5.47E-06	2.83E-06	8.00E-01	4.00E+00	6.8E-06	3.5E-06	1.4E-06	7.1E-07
Metals								
Aluminum	2.24E+01	1.28E+01	1.93E+00	1.93E+01	**1.2E+01**	**6.6E+00**	**1.2E+00**	6.6E-01
Cadmium	5.15E-03	3.81E-04	1.00E+00	1.00E+01	5.2E-03	3.8E-04	5.2E-04	3.8E-05
Chromium	4.10E-02	2.34E-02	2.74E+03	2.74E+04	1.5E-05	8.5E-06	1.5E-06	8.5E-07
Copper	1.13E-01	3.39E-02	1.40E+01	2.80E+01	8.1E-03	2.4E-03	4.0E-03	1.2E-03

TABLE M.68
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Meadow Vole
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Vole Max Exposure[1] (mg/kg/day)	Vole Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Iron	6.19E+01	2.63E+01	2.55E+01	2.55E+01	**2.4E+00**	1.0E+00	**2.4E+00**	1.0E+00
Lead	1.53E-01	3.41E-02	8.00E+00	8.00E+01	1.9E-02	4.3E-03	1.9E-03	4.3E-04
Manganese	1.42E+00	8.14E-01	8.80E+01	2.84E+02	1.6E-02	9.3E-03	5.0E-03	2.9E-03
Mercury	1.03E-03	3.31E-04	1.32E+01	1.32E+02	7.8E-05	2.5E-05	7.8E-06	2.5E-06
Nickel	1.11E+00	6.07E-01	4.00E+01	8.00E+01	2.8E-02	1.5E-02	1.4E-02	7.6E-03
Selenium	9.32E-03	3.49E-03	2.00E-01	3.30E-01	4.7E-02	1.7E-02	2.8E-02	1.1E-02
Thallium	2.13E-03	9.47E-04	7.40E-02	7.40E-01	2.9E-02	1.3E-02	2.9E-03	1.3E-03
Vanadium	5.22E-02	2.70E-02	2.10E-01	2.10E+00	2.5E-01	1.3E-01	2.5E-02	1.3E-02
Zinc	2.47E+01	1.20E+00	1.60E+02	3.20E+02	1.5E-01	7.5E-03	7.7E-02	3.8E-03

1 Receptor exposure from Table M.66
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value

BOLD : represents receptor HQ > 1

TABLE M.69
Calculated Surface Soil (0-1' bls) Exposure - Short-tailed Shrew
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Volatiles						
Acetone	6.10E-02	1.06E-02	5.33E+01	3.90E-01	3.48E-01	6.05E-02
PAHs						
2-Methylnaphthalene	7.80E-03	4.66E-02	1.63E-01	3.42E-01	1.48E-03	8.83E-03
Acenaphthene	4.40E-02	3.36E-02	2.10E-01	3.42E-01	8.55E-03	6.53E-03
Benzo(a)anthracene	2.00E-01	3.77E-02	1.51E-02	1.25E-01	1.31E-02	2.47E-03
Benzo(b)fluoranthene	2.00E-01	3.94E-02	1.00E-02	3.20E-01	3.25E-02	6.41E-03
Benzo(g,h,i)perylene	3.50E-02	2.58E-02	3.05E-03	2.40E-01	4.27E-03	3.15E-03
Benzo(k)fluoranthene	1.70E-01	3.57E-02	4.25E-03	2.53E-01	2.19E-02	4.59E-03
Chrysene	3.10E-01	4.57E-02	2.00E-02	1.75E-01	2.83E-02	4.17E-03
Dibenz(a,h)anthracene	4.30E-02	2.86E-02	8.16E-03	1.75E-01	3.87E-03	2.57E-03
Fluoranthene	3.00E-01	6.12E-02	3.72E-02	7.92E-01	1.21E-01	2.46E-02
Fluorene	3.50E-02	3.88E-02	1.49E-01	3.42E-01	6.58E-03	7.30E-03
Indeno(1,2,3-cd)pyrene	6.90E-02	2.83E-02	1.37E-03	4.19E-01	1.46E-02	5.99E-03
Phenanthrene	2.80E-01	4.02E-02	1.00E-01	1.22E-01	2.04E-02	2.93E-03
Pyrene	3.10E-01	6.25E-02	4.43E-02	9.20E-02	1.62E-02	3.26E-03
Semi-volatiles						
Bis(2-ethylhexyl)phthalate	5.80E-03	4.80E-02	1.00E-02	1.20E+01	3.49E-02	2.89E-01
Butylbenzylphthalate	4.10E-03	4.65E-02	1.00E+00	1.00E+00	2.48E-03	2.81E-02
Carbazole	4.00E-02	3.20E-02	1.00E+00	1.00E+00	2.42E-02	1.94E-02
Di-n-octylphthalate	1.50E-02	4.32E-02	1.60E-04	4.90E+03	3.68E+01	1.06E+02
Pesticides						
4,4'-DDD	1.40E-02	3.33E-03	1.34E-02	1.00E-01	7.38E-04	1.76E-04
4,4'-DDE	6.40E-03	2.51E-03	1.80E-02	2.50E-02	1.01E-04	3.98E-05
4,4'-DDT	3.80E-03	2.18E-03	1.00E-02	1.00E-01	2.00E-04	1.15E-04
Metals						
Aluminum	1.41E+04	1.05E+04	4.00E-03	1.50E-02	1.28E+02	9.53E+01
Chromium	2.46E+01	1.66E+01	7.50E-03	7.75E-01	9.59E+00	6.48E+00

TABLE M.69
Calculated Surface Soil (0-1' bls) Exposure - Short-tailed Shrew
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Iron	2.61E+04	2.07E+04	4.00E-03	5.00E-02	6.94E+02	5.51E+02
Manganese	7.00E+02	5.14E+02	5.60E-01	1.00E+00	3.60E+02	2.64E+02
Nickel	3.49E+01	2.23E+01	2.80E-01	1.00E+02	1.75E+03	1.12E+03
Selenium	1.20E+00	6.07E-01	6.20E+00	5.00E+00	3.16E+00	1.60E+00
Thallium	1.70E+00	8.80E-01	4.00E-03	2.33E-01	2.01E-01	1.04E-01
Vanadium	2.46E+01	1.84E+01	1.00E-02	1.00E+00	1.24E+01	9.26E+00
Zinc	6.56E+02	1.04E+02	1.40E+00	9.90E+00	3.27E+03	5.17E+02

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW

Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.00155 kg/day) (from Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.00751 kg/day) (Table M.46)
Is = incidental soil intake rate (0.000022 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.015 kg) (Table M.46)

TABLE M.70
Calculated Mixed Soil (0-4' bls) Exposure - Short-tailed Shrew
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Volatiles						
Acetone	6.10E-02	8.87E-03	5.33E+01	3.90E-01	3.48E-01	5.06E-02
Trichloroethene	2.00E-03	5.97E-03	1.22E+00	1.00E+00	1.26E-03	3.75E-03
PAHs						
2-Methylnaphthalene	7.80E-03	6.96E-02	1.63E-01	3.42E-01	1.48E-03	1.32E-02
Acenaphthene	4.40E-02	6.42E-02	2.10E-01	3.42E-01	8.55E-03	1.25E-02
Benzo(a)anthracene	2.00E-01	5.75E-02	1.51E-02	1.25E-01	1.31E-02	3.77E-03
Benzo(a)pyrene	1.80E-01	5.39E-02	1.02E+00	4.50E+00	4.25E-01	1.27E-01
Benzo(b)fluoranthene	3.20E-01	6.39E-02	1.00E-02	3.20E-01	5.21E-02	1.04E-02
Benzo(g,h,i)perylene	9.80E-02	5.04E-02	3.05E-03	2.40E-01	1.20E-02	6.15E-03
Benzo(k)fluoranthene	1.70E-01	6.30E-02	4.25E-03	2.53E-01	2.19E-02	8.09E-03
Chrysene	3.10E-01	6.42E-02	2.00E-02	1.75E-01	2.83E-02	5.85E-03
Dibenz(a,h)anthracene	9.90E-02	5.63E-02	8.16E-03	1.75E-01	8.90E-03	5.06E-03
Fluoranthene	3.20E-01	8.06E-02	3.72E-02	7.92E-01	1.29E-01	3.24E-02
Fluorene	3.50E-02	6.68E-02	1.49E-01	3.42E-01	6.58E-03	1.26E-02
Indeno(1,2,3-cd)pyrene	1.40E-01	5.42E-02	1.37E-03	4.19E-01	2.96E-02	1.15E-02
Phenanthrene	2.80E-01	5.92E-02	1.00E-01	1.22E-01	2.04E-02	4.31E-03
Pyrene	3.10E-01	7.68E-02	4.43E-02	9.20E-02	1.62E-02	4.00E-03
Semi-volatiles						
bis(2-Ethylhexyl)phthalate	1.60E-02	7.86E-02	1.00E-02	1.20E+01	9.62E-02	4.72E-01
Butylbenzylphthalate	3.00E-02	6.91E-02	1.00E+00	1.00E+00	1.82E-02	4.18E-02
Carbazole	4.00E-02	6.25E-02	1.00E+00	1.00E+00	2.42E-02	3.79E-02
Dibenzofuran	4.10E-03	7.15E-02	1.51E-01	1.00E+00	2.12E-03	3.70E-02
Di-n-octylphthalate	1.50E-02	6.99E-02	1.60E-04	4.90E+03	3.68E+01	1.72E+02
Pesticides						
4,4'-DDD	1.40E-02	2.70E-03	1.34E-02	1.00E-01	7.38E-04	1.43E-04
4,4'-DDE	6.40E-03	2.33E-03	1.80E-02	2.50E-02	1.01E-04	3.69E-05
4,4'-DDT	4.40E-03	2.28E-03	1.00E-02	1.00E-01	2.31E-04	1.20E-04
Metals						
Aluminum	1.86E+04	1.06E+04	4.00E-03	1.50E-02	1.69E+02	9.61E+01
Cadmium	3.60E+00	2.66E-01	5.50E-01	2.15E-02	8.50E-02	6.28E-03
Chromium	2.97E+01	1.69E+01	7.50E-03	7.75E-01	1.16E+01	6.60E+00
Copper	7.45E+01	2.23E+01	4.00E-01	6.82E-01	2.62E+01	7.83E+00

TABLE M.70
Calculated Mixed Soil (0-4' bls) Exposure - Short-tailed Shrew
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Iron	5.10E+04	2.17E+04	4.00E-03	5.00E-02	1.36E+03	5.77E+02
Lead	9.09E+01	2.02E+01	5.80E-03	2.10E+00	9.57E+01	2.13E+01
Manganese	8.57E+02	4.90E+02	5.60E-01	1.00E+00	4.40E+02	2.52E+02
Mercury	1.50E-01	4.83E-02	9.00E-01	2.30E+01	1.73E+00	5.57E-01
Nickel	4.55E+01	2.50E+01	2.80E-01	1.00E+02	2.28E+03	1.25E+03
Selenium	1.90E+00	7.11E-01	6.20E+00	5.00E+00	5.00E+00	1.87E+00
Thallium	1.70E+00	7.54E-01	4.00E-03	2.33E-01	2.01E-01	8.91E-02
Vanadium	3.64E+01	1.89E+01	1.00E-02	1.00E+00	1.83E+01	9.47E+00
Zinc	6.08E+03	2.96E+02	1.40E+00	9.90E+00	3.03E+04	1.48E+03

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as
ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW
Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.00751 kg/day) (Table M.46)
Is = incidental soil intake rate (0.000022 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.015 kg) (Table M.46)

TABLE M.71
Calculated Surface Soil (0-1' bls) Hazard Quotients - Short-tailed Shrew
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	3.48E-01	6.05E-02	1.00E+02	5.00E+02	3.5E-03	6.1E-04	7.0E-04	1.2E-04
PAHs								
2-Methylnaphthalene*	1.48E-03	8.83E-03	7.16E+00	7.16E+01	2.1E-04	1.2E-03	2.1E-05	1.2E-04
Acenaphthene	8.55E-03	6.53E-03	1.75E+01	1.75E+02	4.9E-04	3.7E-04	4.9E-05	3.7E-05
Benzo(a)anthracene	1.31E-02	2.47E-03	1.00E+00	1.00E+01	1.3E-02	2.5E-03	1.3E-03	2.5E-04
Benzo(b)fluoranthene	3.25E-02	6.41E-03	1.00E+00	1.00E+01	3.3E-02	6.4E-03	3.3E-03	6.4E-04
Benzo(g,h,i)perylene	4.27E-03	3.15E-03	1.00E+00	1.00E+01	4.3E-03	3.1E-03	4.3E-04	3.1E-04
Benzo(k)fluoranthene	2.19E-02	4.59E-03	1.00E+00	1.00E+01	2.2E-02	4.6E-03	2.2E-03	4.6E-04
Chrysene	2.83E-02	4.17E-03	1.00E+00	1.00E+01	2.8E-02	4.2E-03	2.8E-03	4.2E-04
Dibenz(a,h)anthracene	3.87E-03	2.57E-03	1.00E+00	1.00E+01	3.9E-03	2.6E-03	3.9E-04	2.6E-04
Fluoranthene	1.21E-01	2.46E-02	1.25E+01	1.25E+02	9.6E-03	2.0E-03	9.6E-04	2.0E-04
Fluorene*	6.58E-03	7.30E-03	1.25E+01	1.25E+02	5.3E-04	5.8E-04	5.3E-05	5.8E-05
Indeno(1,2,3-cd)pyrene	1.46E-02	5.99E-03	1.00E+00	1.00E+01	1.5E-02	6.0E-03	1.5E-03	6.0E-04
Phenanthrene	2.04E-02	2.93E-03	1.00E+00	1.00E+01	2.0E-02	2.9E-03	2.0E-03	2.9E-04
Pyrene	1.62E-02	3.26E-03	1.00E+00	1.00E+01	1.6E-02	3.3E-03	1.6E-03	3.3E-04
Semi-volatiles								
Bis(2-ethylhexyl)phthalate*	3.49E-02	2.89E-01	1.83E+01	1.83E+02	1.9E-03	1.6E-02	1.9E-04	1.6E-03
Butylbenzylphthalate*	2.48E-03	2.81E-02	1.59E+02	4.70E+02	1.6E-05	1.8E-04	5.3E-06	6.0E-05
Carbazole	2.42E-02	1.94E-02	5.00E+00	5.00E+00	4.8E-03	3.9E-03	4.8E-03	3.9E-03
Di-n-octylphthalate*	3.68E+01	1.06E+02	6.51E+01	6.51E+01	5.7E-01	1.6E+00	5.7E-01	1.6E+00
Pesticides								
4,4'-DDD	7.38E-04	1.76E-04	8.00E-01	4.00E+00	9.2E-04	2.2E-04	1.8E-04	4.4E-05
4,4'-DDE	1.01E-04	3.98E-05	8.00E-01	4.00E+00	1.3E-04	5.0E-05	2.5E-05	1.0E-05
4,4'-DDT	2.00E-04	1.15E-04	8.00E-01	4.00E+00	2.5E-04	1.4E-04	5.0E-05	2.9E-05
Metals								
Aluminum	1.28E+02	9.53E+01	1.93E+00	1.93E+01	**6.6E+01**	**4.9E+01**	**6.6E+00**	**4.9E+00**
Chromium	9.59E+00	6.48E+00	2.74E+03	2.74E+04	3.5E-03	2.4E-03	3.5E-04	2.4E-04
Iron	6.94E+02	5.51E+02	2.55E+01	2.55E+01	**2.7E+01**	**2.2E+01**	**2.7E+01**	**2.2E+01**
Manganese	3.60E+02	2.64E+02	8.80E+01	2.84E+02	**4.1E+00**	**3.0E+00**	**1.3E+00**	9.3E-01
Nickel	1.75E+03	1.12E+03	4.00E+01	8.00E+01	**4.4E+01**	**2.8E+01**	**2.2E+01**	**1.4E+01**
Selenium	3.16E+00	1.60E+00	2.00E-01	3.30E-01	**1.6E+01**	**8.0E+00**	**9.6E+00**	**4.8E+00**

TABLE M.71
Calculated Surface Soil (0-1' bls) Hazard Quotients - Short-tailed Shrew
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Thallium	2.01E-01	1.04E-01	7.40E-02	7.40E-01	**2.7E+00**	**1.4E+00**	2.7E-01	1.4E-01
Vanadium	1.24E+01	9.26E+00	2.10E-01	2.10E+00	**5.9E+01**	**4.4E+01**	**5.9E+00**	**4.4E+00**
Zinc	3.27E+03	5.17E+02	1.60E+02	3.20E+02	**2.0E+01**	**3.2E+00**	**1.0E+01**	**1.6E+00**

1 Receptor exposure from Table M.69
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ > 1.
* Mean is greater than the maximum because of using 1/2 detection limit to calculate.

TABLE M.72
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Short-tailed Shrew
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	3.48E-01	5.06E-02	1.00E+02	5.00E+02	3.5E-03	5.1E-04	7.0E-04	1.0E-04
Trichloroethene	1.26E-03	3.75E-03	7.00E-01	7.00E+00	1.8E-03	5.4E-03	1.8E-04	5.4E-04
PAHs								
2-Methylnaphthalene	1.48E-03	1.32E-02	7.16E+00	7.16E+01	2.1E-04	1.8E-03	2.1E-05	1.8E-04
Acenaphthene	8.55E-03	1.25E-02	1.75E+01	1.75E+02	4.9E-04	7.1E-04	4.9E-05	7.1E-05
Benzo(a)anthracene	1.31E-02	3.77E-03	1.00E+00	1.00E+01	1.3E-02	3.8E-03	1.3E-03	3.8E-04
Benzo(a)pyrene	4.25E-01	1.27E-01	1.00E+00	1.00E+01	4.2E-01	1.3E-01	4.2E-02	1.3E-02
Benzo(b)fluoranthene	5.21E-02	1.04E-02	1.00E+00	1.00E+01	5.2E-02	1.0E-02	5.2E-03	1.0E-03
Benzo(g,h,i)perylene	1.20E-02	6.15E-03	1.00E+00	1.00E+01	1.2E-02	6.1E-03	1.2E-03	6.1E-04
Benzo(k)fluoranthene	2.19E-02	8.09E-03	1.00E+00	1.00E+01	2.2E-02	8.1E-03	2.2E-03	8.1E-04
Chrysene	2.83E-02	5.85E-03	1.00E+00	1.00E+01	2.8E-02	5.8E-03	2.8E-03	5.8E-04
Dibenz(a,h)anthracene	8.90E-03	5.06E-03	1.00E+00	1.00E+01	8.9E-03	5.1E-03	8.9E-04	5.1E-04
Fluoranthene	1.29E-01	3.24E-02	1.25E+01	1.25E+02	1.0E-02	2.6E-03	1.0E-03	2.6E-04
Fluorene	6.58E-03	1.26E-02	1.25E+01	1.25E+02	5.3E-04	1.0E-03	5.3E-05	1.0E-04
Indeno(1,2,3-cd)pyrene	2.96E-02	1.15E-02	1.00E+00	1.00E+01	3.0E-02	1.1E-02	3.0E-03	1.1E-03
Phenanthrene	2.04E-02	4.31E-03	1.00E+00	1.00E+01	2.0E-02	4.3E-03	2.0E-03	4.3E-04
Pyrene	1.62E-02	4.00E-03	1.00E+00	1.00E+01	1.6E-02	4.0E-03	1.6E-03	4.0E-04
Semi-volatiles								
bis(2-Ethylhexyl)phthalate	9.62E-02	4.72E-01	1.83E+01	1.83E+02	5.2E-03	2.6E-02	5.2E-04	2.6E-03
Butylbenzylphthalate	1.82E-02	4.18E-02	1.59E+02	4.70E+02	1.1E-04	2.6E-04	3.9E-05	8.9E-05
Carbazole	2.42E-02	3.79E-02	5.00E+00	5.00E+00	4.8E-03	7.6E-03	4.8E-03	7.6E-03
Dibenzofuran	2.12E-03	3.70E-02	No data	No data	--	--	--	--
Di-n-octylphthalate	3.68E+01	1.72E+02	6.51E+01	6.51E+01	5.7E-01	2.6E+00	5.7E-01	2.6E+00
Pesticides								
4,4'-DDD	7.38E-04	1.43E-04	8.00E-01	4.00E+00	9.2E-04	1.8E-04	1.8E-04	3.6E-05
4,4'-DDE	1.01E-04	3.69E-05	8.00E-01	4.00E+00	1.3E-04	4.6E-05	2.5E-05	9.2E-06
4,4'-DDT	2.31E-04	1.20E-04	8.00E-01	4.00E+00	2.9E-04	1.5E-04	5.8E-05	3.0E-05
Metals								
Aluminum	1.69E+02	9.61E+01	1.93E+00	1.93E+01	**8.7E+01**	**5.0E+01**	**8.7E+00**	**5.0E+00**
Cadmium	8.50E-02	6.28E-03	1.00E+00	1.00E+01	8.5E-02	6.3E-03	8.5E-03	6.3E-04
Chromium	1.16E+01	6.60E+00	2.74E+03	2.74E+04	4.2E-03	2.4E-03	4.2E-04	2.4E-04
Copper	2.62E+01	7.83E+00	1.40E+01	2.80E+01	**1.9E+00**	5.6E-01	9.3E-01	2.8E-01

TABLE M.72
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Short-tailed Shrew
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Iron	1.36E+03	5.77E+02	2.55E+01	2.55E+01	**5.3E+01**	**2.3E+01**	**5.3E+01**	**2.3E+01**
Lead	9.57E+01	2.13E+01	8.00E+00	8.00E+01	**1.2E+01**	**2.7E+00**	**1.2E+00**	2.7E-01
Manganese	4.40E+02	2.52E+02	8.80E+01	2.84E+02	**5.0E+00**	**2.9E+00**	**1.6E+00**	8.9E-01
Mercury	1.73E+00	5.57E-01	1.32E+01	1.32E+01	1.3E-01	4.2E-02	1.3E-01	4.2E-02
Nickel	2.28E+03	1.25E+03	4.00E+01	8.00E+01	**5.7E+01**	**3.1E+01**	**2.8E+01**	**1.6E+01**
Selenium	5.00E+00	1.87E+00	2.00E-01	3.30E-01	**2.5E+01**	**9.4E+00**	**1.5E+01**	**5.7E+00**
Thallium	2.01E-01	8.91E-02	7.40E-02	7.40E-01	**2.7E+00**	**1.2E+00**	2.7E-01	1.2E-01
Vanadium	1.83E+01	9.47E+00	2.10E-01	2.10E+00	**8.7E+01**	**4.5E+01**	**8.7E+00**	**4.5E+00**
Zinc	3.03E+04	1.48E+03	1.60E+02	3.20E+02	**1.9E+02**	**9.2E+00**	**9.5E+01**	**4.6E+00**

1 Receptor exposure from Table M.70
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value

BOLD : represents receptor HQ > 1

TABLE M.73
Calculated Surface Soil (0-1' bls) Exposure - Red-tailed Hawk
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	Invertebrate BAF[2] (unitless)	Vertebrate BAF[2] (unitless)	Hawk Max Exposure[3] (mg/kg/day)	Hawk Mean Exposure[3] (mg/kg/day)
Volatiles							
Acetone	6.10E-02	1.06E-02	5.33E+01	3.90E-01	3.90E-01	2.24E-05	3.89E-06
PAHs							
2-Methylnaphthalene	7.80E-03	4.66E-02	1.63E-01	3.42E-01	5.90E-01	1.54E-07	9.17E-07
Acenaphthene	4.40E-02	3.36E-02	2.10E-01	3.42E-01	5.90E-01	8.87E-07	6.77E-07
Benzo(a)anthracene	2.00E-01	3.77E-02	1.51E-02	1.25E-01	5.90E-01	1.53E-06	2.88E-07
Benzo(b)fluoranthene	2.00E-01	3.94E-02	1.00E-02	3.20E-01	5.90E-01	3.41E-06	6.73E-07
Benzo(g,h,i)perylene	3.50E-02	2.58E-02	3.05E-03	2.40E-01	5.90E-01	4.59E-07	3.39E-07
Benzo(k)fluoranthene	1.70E-01	3.57E-02	4.25E-03	2.53E-01	5.90E-01	2.34E-06	4.91E-07
Chrysene	3.10E-01	4.57E-02	2.00E-02	1.75E-01	5.90E-01	3.14E-06	4.63E-07
Dibenz(a,h)anthracene	4.30E-02	2.86E-02	8.16E-03	1.75E-01	5.90E-01	4.30E-07	2.86E-07
Fluoranthene	3.00E-01	6.12E-02	3.72E-02	7.92E-01	5.90E-01	1.21E-05	2.47E-06
Fluorene	3.50E-02	3.88E-02	1.49E-01	3.42E-01	5.90E-01	6.84E-07	7.58E-07
Indeno(1,2,3-cd)pyrene	6.90E-02	2.83E-02	1.37E-03	4.19E-01	5.90E-01	1.50E-06	6.17E-07
Phenanthrene	2.80E-01	4.02E-02	1.00E-01	1.22E-01	5.90E-01	2.34E-06	3.36E-07
Pyrene	3.10E-01	6.25E-02	4.43E-02	9.20E-02	5.90E-01	1.96E-06	3.96E-07
Semi-volatiles							
Bis(2-ethylhexyl)phthalate	5.80E-03	4.80E-02	1.00E-02	1.20E+01	1.50E+00	8.62E-06	7.14E-05
Butylbenzylphthalate	4.10E-03	4.65E-02	1.00E+00	1.00E+00	1.00E+00	4.17E-07	4.73E-06
Carbazole	4.00E-02	3.20E-02	1.00E+00	1.00E+00	1.00E+00	4.07E-06	3.25E-06
Di-n-octylphthalate	1.50E-02	4.32E-02	1.60E-04	4.90E+03	6.42E+02	3.89E+00	1.12E+01
Pesticides							
4,4'-DDD	1.40E-02	3.33E-03	1.34E-02	1.00E-01	1.00E-01	1.52E-08	3.63E-09
4,4'-DDE	6.40E-03	2.51E-03	1.80E-02	2.50E-02	2.50E-02	7.64E-10	3.00E-10
4,4'-DDT	3.80E-03	2.18E-03	1.00E-02	1.00E-01	1.00E-01	4.11E-09	2.36E-09
Metals							
Aluminum	1.41E+04	1.05E+04	4.00E-03	1.50E-02	1.50E-02	7.75E-04	5.78E-04
Chromium	2.46E+01	1.66E+01	7.50E-03	7.75E-01	7.75E-01	1.26E-03	8.54E-04
Iron	2.61E+04	2.07E+04	4.00E-03	5.00E-02	5.00E-02	8.54E-03	6.78E-03

TABLE M.73
Calculated Surface Soil (0-1' bls) Exposure - Red-tailed Hawk
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	Invertebrate BAF[2] (unitless)	Vertebrate BAF[2] (unitless)	Hawk Max Exposure[3] (mg/kg/day)	Hawk Mean Exposure[3] (mg/kg/day)
Manganese	7.00E+02	5.14E+02	5.60E-01	1.00E+00	1.00E+00	6.07E-02	4.46E-02
Nickel	3.49E+01	2.23E+01	2.80E-01	1.00E+02	1.00E+02	2.88E+01	1.84E+01
Selenium	1.20E+00	6.07E-01	6.20E+00	5.00E+00	5.00E+00	2.61E-03	1.32E-03
Thallium	1.70E+00	8.80E-01	4.00E-03	2.33E-01	2.33E-01	8.56E-06	4.43E-06
Vanadium	2.46E+01	1.84E+01	1.00E-02	1.00E+00	1.00E+00	2.09E-03	1.56E-03
Zinc	6.56E+02	1.04E+02	1.40E+00	9.90E+00	9.90E+00	5.34E+00	8.44E-01

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

$ED = Conc_{shrew} * BAF_{vert} * I_{a\,hawk} * SFF / BW_{hawk}$

$ED = [(Cs * SP_v * CF * Ip_{shrew}) + (Cs * BAF_{inv} * Ia_{shrew}) + (Cs * Is_{shrew})] * BAF_{vert} * Ia_{hawk} * SFF / (BW_{hawk})$

Where, ED = exposure dose

Cs = maximum or mean concentration in soil (mg/kg)

$Conc_{shrew}$ = concentration in shrew (mg/kg)

CF = plant dry-to-wet-weight conversion factor (0.2) for inorganics only

SP_v = soil-to-plant uptake factor for vegetative matter

Ip_{shrew} = plant-matter intake rate for the shrew = 0.000155 kg/day (Table M.46)

BAF_{inv} = invertebrate bioaccumulation factor (unitless) (Table M.45)

Ia_{shrew} = animal-matter intake rate for the shrew = 0.000751 kg/day (Table M.46)

Is_{shrew} = incidental soil intake rate for the shrew = 0.000022 kg/day (Table M.46)

BAF_{vert} = vertebrate bioaccumulation factor (unitless) (Table M.45)

Ia_{hawk} = animal-matter intake rate for the hawk = 0.136 kg/day (Table M.46)

TABLE M.74
Calculated Mixed Soil (0-4' bls) Exposure - Red-tailed Hawk
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	Invertebrate BAF[2] (unitless)	Vertebrate BAF[2] (unitless)	Hawk Max Exposure[3] (mg/kg/day)	Hawk Mean Exposure[3] (mg/kg/day)
Volatiles							
Acetone	6.10E-02	8.87E-03	5.33E+01	3.90E-01	3.90E-01	2.24E-05	3.25E-06
Trichloroethene	2.00E-03	5.97E-03	1.22E+00	1.00E+00	1.00E+00	2.11E-07	6.29E-07
PAHs							
2-Methylnaphthalene	7.80E-03	6.96E-02	1.63E-01	3.42E-01	5.90E-01	1.54E-07	1.37E-06
Acenaphthene	4.40E-02	6.42E-02	2.10E-01	3.42E-01	5.90E-01	8.87E-07	1.29E-06
Benzo(a)anthracene	2.00E-01	5.75E-02	1.51E-02	1.25E-01	5.90E-01	1.53E-06	4.40E-07
Benzo(a)pyrene	1.80E-01	5.39E-02	1.02E+00	4.50E+00	5.90E-01	4.15E-05	1.24E-05
Benzo(b)fluoranthene	3.20E-01	6.39E-02	1.00E-02	3.20E-01	5.90E-01	5.46E-06	1.09E-06
Benzo(g,h,i)perylene	9.80E-02	5.04E-02	3.05E-03	2.40E-01	5.90E-01	1.29E-06	6.61E-07
Benzo(k)fluoranthene	1.70E-01	6.30E-02	4.25E-03	2.53E-01	5.90E-01	2.34E-06	8.66E-07
Chrysene	3.10E-01	6.42E-02	2.00E-02	1.75E-01	5.90E-01	3.14E-06	6.50E-07
Dibenz(a,h)anthracene	9.90E-02	5.63E-02	8.16E-03	1.75E-01	5.90E-01	9.91E-07	5.63E-07
Fluoranthene	3.20E-01	8.06E-02	3.72E-02	7.92E-01	5.90E-01	1.29E-05	3.25E-06
Fluorene	3.50E-02	6.68E-02	1.49E-01	3.42E-01	5.90E-01	6.84E-07	1.31E-06
Indeno(1,2,3-cd)pyrene	1.40E-01	5.42E-02	1.37E-03	4.19E-01	5.90E-01	3.05E-06	1.18E-06
Phenanthrene	2.80E-01	5.92E-02	1.00E-01	1.22E-01	5.90E-01	2.34E-06	4.94E-07
Pyrene	3.10E-01	7.68E-02	4.43E-02	9.20E-02	5.90E-01	1.96E-06	4.87E-07
Semi-volatiles							
bis(2-Ethylhexyl)phthalate	1.60E-02	7.86E-02	1.00E-02	1.20E+01	1.50E+00	2.38E-05	1.17E-04
Butylbenzylphthalate	3.00E-02	6.91E-02	1.00E+00	1.00E+00	1.00E+00	3.05E-06	7.03E-06
Carbazole	4.00E-02	6.25E-02	1.00E+00	1.00E+00	1.00E+00	4.07E-06	6.36E-06
Dibenzofuran	4.10E-03	7.15E-02	1.51E-01	1.00E+00	1.00E+00	3.58E-07	6.25E-06
Di-n-octylphthalate	1.50E-02	6.99E-02	1.60E-04	4.90E+03	6.42E+02	3.89E+00	1.81E+01
Pesticides							
4,4'-DDD	1.40E-02	2.70E-03	1.34E-02	1.00E-01	1.00E-01	1.52E-08	2.94E-09
4,4'-DDE	6.40E-03	2.33E-03	1.80E-02	2.50E-02	2.50E-02	7.64E-10	2.78E-10
4,4'-DDT	4.40E-03	2.28E-03	1.00E-02	1.00E-01	1.00E-01	4.76E-09	2.46E-09
Metals							
Aluminum	1.86E+04	1.06E+04	4.00E-03	1.50E-02	1.50E-02	1.02E-03	5.83E-04
Cadmium	3.60E+00	2.66E-01	5.50E-01	2.15E-02	2.15E-02	4.69E-07	3.46E-08
Chromium	2.97E+01	1.69E+01	7.50E-03	7.75E-01	7.75E-01	1.53E-03	8.70E-04
Copper	7.45E+01	2.23E+01	4.00E-01	6.82E-01	6.82E-01	3.05E-03	9.12E-04
Iron	5.10E+04	2.17E+04	4.00E-03	5.00E-02	5.00E-02	1.67E-02	7.10E-03
Lead	9.09E+01	2.02E+01	5.80E-03	2.10E+00	2.10E+00	3.35E-02	7.46E-03

TABLE M.74
Calculated Mixed Soil (0-4' bls) Exposure - Red-tailed Hawk
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	Invertebrate BAF[2] (unitless)	Vertebrate BAF[2] (unitless)	Hawk Max Exposure[3] (mg/kg/day)	Hawk Mean Exposure[3] (mg/kg/day)
Manganese	8.57E+02	4.90E+02	5.60E-01	1.00E+00	1.00E+00	7.43E-02	4.25E-02
Mercury	1.50E-01	4.83E-02	9.00E-01	2.30E+01	2.30E+01	6.55E-03	2.11E-03
Nickel	4.55E+01	2.50E+01	2.80E-01	1.00E+02	1.00E+02	3.75E+01	2.06E+01
Selenium	1.90E+00	7.11E-01	6.20E+00	5.00E+00	5.00E+00	4.14E-03	1.55E-03
Thallium	1.70E+00	7.54E-01	4.00E-03	2.33E-01	2.33E-01	8.56E-06	3.80E-06
Vanadium	3.64E+01	1.89E+01	1.00E-02	1.00E+00	1.00E+00	3.09E-03	1.60E-03
Zinc	6.08E+03	2.96E+02	1.40E+00	9.90E+00	9.90E+00	4.95E+01	2.41E+00

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

$ED = Conc_{shrew} * BAF_{vert} * Ia_{hawk} * SFF / BW_{hawk}$

$ED = [(Cs * SP_v * CF * Ip_{shrew}) + (Cs * BAF_{inv} * Ia_{shrew}) + (Cs * Is_{shrew})] * BAF_{vert} * Ia_{hawk} * SFF / (BW_{hawk})$

Where, ED = exposure dose

Cs = maximum or mean co 2.85E+02 7.28E+01

$Conc_{shrew}$ = concentration in shrew (mg/kg)

CF = plant dry-to-wet-weight conversion factor (0.2) for inorganics only

SP_v = soil-to-plant uptake factor for vegetative matter

Ip_{shrew} = plant-matter intake rate for the shrew = 0.000155 kg/day (Table M.46)

BAF_{inv} = invertebrate bioaccumulation factor (unitless) (Table M.45)

Ia_{shrew} = animal-matter intake rate for the shrew = 0.000751 kg/day (Table M.46)

Is_{shrew} = incidental soil intake rate for the shrew = 0.000022 kg/day (Table M.46)

BAF_{vert} = vertebrate bioaccumulation factor (unitless) (Table M.45)

Ia_{hawk} = animal-matter intake rate for the hawk = 0.136 kg/day (Table M.46)

SFF = site foraging factor = 1 (default)

TABLE M.75
Calculated Surface Soil (0-1' bls) Hazard Quotients - Red-tailed hawk
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Constituent	Hawk Max Exposure[1] (mg/kg/day)	Hawk Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	2.24E-05	3.89E-06	4.51E+01	4.51E+02	5.0E-07	8.6E-08	5.0E-08	8.6E-09
PAHs								
2-Methylnaphthalene	1.54E-07	9.17E-07	2.85E+01	2.85E+02	5.4E-09	3.2E-08	5.4E-10	3.2E-09
Acenaphthene	8.87E-07	6.77E-07	2.85E+01	2.85E+02	3.1E-08	2.4E-08	3.1E-09	2.4E-09
Benzo(a)anthracene	1.53E-06	2.88E-07	2.85E+01	2.85E+02	5.4E-08	1.0E-08	5.4E-09	1.0E-09
Benzo(b)fluoranthene	3.41E-06	6.73E-07	2.85E+01	2.85E+02	1.2E-07	2.4E-08	1.2E-08	2.4E-09
Benzo(g,h,i)perylene	4.59E-07	3.39E-07	2.85E+01	2.85E+02	1.6E-08	1.2E-08	1.6E-09	1.2E-09
Benzo(k)fluoranthene	2.34E-06	4.91E-07	2.85E+01	2.85E+02	8.2E-08	1.7E-08	8.2E-09	1.7E-09
Chrysene	3.14E-06	4.63E-07	2.85E+01	2.85E+02	1.1E-07	1.6E-08	1.1E-08	1.6E-09
Dibenz(a,h)anthracene	4.30E-07	2.86E-07	2.85E+01	2.85E+02	1.5E-08	1.0E-08	1.5E-09	1.0E-09
Fluoranthene	1.21E-05	2.47E-06	2.85E+01	2.85E+02	4.2E-07	8.7E-08	4.2E-08	8.7E-09
Fluorene	6.84E-07	7.58E-07	2.85E+01	2.85E+02	2.4E-08	2.7E-08	2.4E-09	2.7E-09
Indeno(1,2,3-cd)pyrene	1.50E-06	6.17E-07	2.85E+01	2.85E+02	5.3E-08	2.2E-08	5.3E-09	2.2E-09
Phenanthrene	2.34E-06	3.36E-07	2.85E+01	2.85E+02	8.2E-08	1.2E-08	8.2E-09	1.2E-09
Pyrene	1.96E-06	3.96E-07	2.85E+01	2.85E+02	6.9E-08	1.4E-08	6.9E-09	1.4E-09
Semi-volatiles								
Bis(2-ethylhexyl)phthalate	8.62E-06	7.14E-05	1.11E+00	1.11E+01	7.8E-06	6.4E-05	7.8E-07	6.4E-06
Butylbenzylphthalate	4.17E-07	4.73E-06	No data	No data	--	--	--	--
Carbazole	4.07E-06	3.25E-06	No data	No data	--	--	--	--
Di-n-octylphthalate	3.89E+00	1.12E+01	No data	No data	--	--	--	--
Pesticides								
4,4'-DDD	1.52E-08	3.63E-09	2.20E-02	2.20E-01	6.9E-07	1.6E-07	6.9E-08	1.6E-08
4,4'-DDE	7.64E-10	3.00E-10	2.20E-02	2.20E-01	3.5E-08	1.4E-08	3.5E-09	1.4E-09
4,4'-DDT	4.11E-09	2.36E-09	2.20E-02	2.20E-01	1.9E-07	1.1E-07	1.9E-08	1.1E-08
Metals								
Aluminum	7.75E-04	5.78E-04	1.10E+02	1.10E+03	7.1E-06	5.3E-06	7.0E-07	5.3E-07
Chromium	1.26E-03	8.54E-04	1.00E+00	5.00E+00	1.3E-03	8.5E-04	2.5E-04	1.7E-04
Iron	8.54E-03	6.78E-03	No data	No data	--	--	--	--
Manganese	6.07E-02	4.46E-02	9.77E+02	9.77E+03	6.2E-05	4.6E-05	6.2E-06	4.6E-06
Nickel	2.88E+01	1.84E+01	7.74E+01	1.07E+02	3.7E-01	2.4E-01	2.7E-01	1.7E-01
Selenium	2.61E-03	1.32E-03	1.71E+00	3.43E+00	1.5E-03	7.7E-04	7.6E-04	3.9E-04
Thallium	8.56E-06	4.43E-06	9.50E-02	9.50E-02	9.0E-05	4.7E-05	9.0E-05	4.7E-05
Vanadium	2.09E-03	1.56E-03	1.14E+01	1.14E+01	1.8E-04	1.4E-04	1.8E-04	1.4E-04
Zinc	5.34E+00	8.44E-01	1.45E+01	1.31E+02	3.7E-01	5.8E-02	4.1E-02	6.4E-03

1 Receptor exposure from Table M 73
2 NOAEL toxicity reference value from Table M 40
3 LOAEL toxicity reference value from Table M 41
4 Hazard quotient calculated as HQ exposure rate / toxicity reference value
BOLD represents receptor HQ 1

TABLE M.76
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Red-tailed hawk
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Constituent	Hawk Max Exposure[1] (mg/kg/day)	Hawk Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	2.24E-05	3.25E-06	4.51E+01	4.51E+02	5.0E-07	7.2E-08	5.0E-08	7.2E-09
Trichloroethene	2.11E-07	6.29E-07	No data	No data	--	--	--	--
PAHs								
2-Methylnaphthalene	1.54E-07	1.37E-06	2.85E+01	2.85E+02	5.4E-09	4.8E-08	5.4E-10	4.8E-09
Acenaphthene	8.87E-07	1.29E-06	2.85E+01	2.85E+02	3.1E-08	4.5E-08	3.1E-09	4.5E-09
Benzo(a)anthracene	1.53E-06	4.40E-07	2.85E+01	2.85E+02	5.4E-08	1.5E-08	5.4E-09	1.5E-09
Benzo(a)pyrene	4.15E-05	1.24E-05	2.85E+01	2.85E+02	1.5E-06	4.4E-07	1.5E-07	4.4E-08
Benzo(b)fluoranthene	5.46E-06	1.09E-06	2.85E+01	2.85E+02	1.9E-07	3.8E-08	1.9E-08	3.8E-09
Benzo(g,h,i)perylene	1.29E-06	6.61E-07	2.85E+01	2.85E+02	4.5E-08	2.3E-08	4.5E-09	2.3E-09
Benzo(k)fluoranthene	2.34E-06	8.66E-07	2.85E+01	2.85E+02	8.2E-08	3.0E-08	8.2E-09	3.0E-09
Chrysene	3.14E-06	6.50E-07	2.85E+01	2.85E+02	1.1E-07	2.3E-08	1.1E-08	2.3E-09
Dibenz(a,h)anthracene	9.91E-07	5.63E-07	2.85E+01	2.85E+02	3.5E-08	2.0E-08	3.5E-09	2.0E-09
Fluoranthene	1.29E-05	3.25E-06	2.85E+01	2.85E+02	4.5E-07	1.1E-07	4.5E-08	1.1E-08
Fluorene	6.84E-07	1.31E-06	2.85E+01	2.85E+02	2.4E-08	4.6E-08	2.4E-09	4.6E-09
Indeno(1,2,3-cd)pyrene	3.05E-06	1.18E-06	2.85E+01	2.85E+02	1.1E-07	4.1E-08	1.1E-08	4.1E-09
Phenanthrene	2.34E-06	4.94E-07	2.85E+01	2.85E+02	8.2E-08	1.7E-08	8.2E-09	1.7E-09
Pyrene	1.96E-06	4.87E-07	2.85E+01	2.85E+02	6.9E-08	1.7E-08	6.9E-09	1.7E-09
Semi-volatiles								
bis(2-Ethylhexyl)phthalate	2.38E-05	1.17E-04	1.11E+00	1.11E+01	2.1E-05	1.1E-04	2.1E-06	1.1E-05
Butylbenzylphthalate	3.05E-06	7.03E-06	No data	No data	--	--	--	--
Carbazole	4.07E-06	6.36E-06	No data	No data	--	--	--	--
Dibenzofuran	3.58E-07	6.25E-06	2.18E-01	2.18E-01	1.6E-06	2.9E-05	1.6E-06	2.9E-05
Di-n-octylphthalate	3.89E+00	1.81E+01	No data	No data	--	--	--	--
Pesticides								
4,4'-DDD	1.52E-08	2.94E-09	2.20E-02	2.20E-01	6.9E-07	1.3E-07	6.9E-08	1.3E-08
4,4'-DDE	7.64E-10	2.78E-10	2.20E-02	2.20E-01	3.5E-08	1.3E-08	3.5E-09	1.3E-09
4,4'-DDT	4.76E-09	2.46E-09	2.20E-02	2.20E-01	2.2E-07	1.1E-07	2.2E-08	1.1E-08
Metals								
Aluminum	1.02E-03	5.83E-04	1.10E+02	1.10E+03	9.3E-06	5.3E-06	9.3E-07	5.3E-07
Cadmium	4.69E-07	3.46E-08	1.45E+00	2.00E+01	3.2E-07	2.4E-08	2.3E-08	1.7E-09
Chromium	1.53E-03	8.70E-04	1.00E+00	5.00E+00	1.5E-03	8.7E-04	3.1E-04	1.7E-04
Copper	3.05E-03	9.12E-04	4.70E+01	4.70E+02	6.5E-05	1.9E-05	6.5E-06	1.9E-06
Iron	1.67E-02	7.10E-03	No data	No data	--	--	--	--

TABLE M.76
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Red-tailed hawk
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Constituent	Hawk Max Exposure[1] (mg/kg/day)	Hawk Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Lead	3.35E-02	7.46E-03	3.85E+00	3.85E+01	8.7E-03	1.9E-03	8.7E-04	1.9E-04
Manganese	7.43E-02	4.25E-02	9.77E+02	9.77E+03	7.6E-05	4.3E-05	7.6E-06	4.3E-06
Mercury	6.55E-03	2.11E-03	2.86E+00	2.86E+01	2.3E-03	7.4E-04	2.3E-04	7.4E-05
Nickel	3.75E+01	2.06E+01	7.74E+01	1.07E+02	4.8E-01	2.7E-01	3.5E-01	1.9E-01
Selenium	4.14E-03	1.55E-03	1.71E+00	3.43E+00	2.4E-03	9.0E-04	1.2E-03	4.5E-04
Thallium	8.56E-06	3.80E-06	9.50E-02	9.50E-02	9.0E-05	4.0E-05	9.0E-05	4.0E-05
Vanadium	3.09E-03	1.60E-03	1.14E+01	1.14E+02	2.7E-04	1.4E-04	2.7E-05	1.4E-05
Zinc	4.95E+01	2.41E+00	1.45E+01	1.31E+02	**3.4E+00**	1.7E-01	3.8E-01	1.8E-02

1 Receptor exposure from Table M.74

2 NOAEL toxicity reference value from Table M.40

3 LOAEL toxicity reference value from Table M.41

4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value

BOLD : represents receptor HQ > 1.

TABLE M.77
Calculated Surface Soil (0-1 ft) Receptor Exposure
Group F - Disposal Pit C -SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Mourning Dove Max Exposure[3] (mg/kg/day)	Mourning Dove Mean Exposure[3] (mg/kg/day)
Volatiles						
Acetone	6.10E-02	1.06E-02	5.33E+01	1.00E+00	1.93E-01	3.35E-02
PAHs						
2-Methylnaphthalene	7.80E-03	4.66E-02	1.63E-01	3.42E-01	1.63E-04	9.71E-04
Acenaphthene	4.40E-02	3.36E-02	2.10E-01	3.42E-01	1.04E-03	7.93E-04
Benzo(a)anthracene	2.00E-01	3.77E-02	1.51E-02	1.25E-01	2.01E-03	3.78E-04
Benzo(b)fluoranthene	2.00E-01	3.94E-02	1.00E-02	3.19E-01	2.32E-03	4.57E-04
Benzo(g,h,i)perylene	3.50E-02	2.58E-02	3.05E-03	2.44E-01	3.67E-04	2.71E-04
Benzo(k)fluoranthene	1.70E-01	3.57E-02	4.25E-03	2.53E-01	1.81E-03	3.80E-04
Chrysene	3.10E-01	4.57E-02	2.00E-02	1.75E-01	3.35E-03	4.94E-04
Dibenz(a,h)anthracene	4.30E-02	2.86E-02	8.16E-03	1.75E-01	4.35E-04	2.89E-04
Fluoranthene	3.00E-01	6.12E-02	3.72E-02	7.92E-02	3.27E-03	6.68E-04
Fluorene	3.50E-02	3.88E-02	1.49E-01	3.42E-01	6.99E-04	7.75E-04
Indeno(1,2,3-cd)pyrene	6.90E-02	2.83E-02	1.37E-03	4.19E-01	8.31E-04	3.41E-04
Phenanthrene	2.80E-01	4.02E-02	1.00E-01	1.22E-01	4.20E-03	6.04E-04
Pyrene	3.10E-01	6.25E-02	4.43E-02	9.20E-02	3.55E-03	7.16E-04
Semi-volatiles						
Bis(2-ethylhexyl)phthalate	5.80E-03	4.80E-02	1.00E-02	1.20E+01	7.15E-04	5.92E-03
Butylbenzylphthalate	4.10E-03	4.65E-02	1.00E+00	1.20E+01	7.44E-04	8.44E-03
Carbazole	4.00E-02	3.20E-02	1.00E+00	1.00E+00	3.06E-03	2.44E-03
Di-n-octylphthalate	1.50E-02	4.32E-02	1.60E-04	1.20E+01	1.84E-03	5.30E-03
Pesticides						
4,4'-DDD	1.40E-02	3.33E-03	1.34E-02	1.00E-01	1.35E-04	3.24E-05
4,4'-DDE	6.40E-03	2.51E-03	1.80E-02	2.50E-01	7.30E-05	2.87E-05
4,4'-DDT	3.80E-03	2.18E-03	1.00E-02	2.50E-01	4.16E-05	2.39E-05
Metals						
Aluminum	1.41E+04	1.05E+04	4.00E-03	1.50E-02	1.15E+02	8.57E+01
Chromium	2.46E+01	1.66E+01	7.50E-03	1.00E+00	4.33E-01	2.93E-01
Iron	2.61E+04	2.07E+04	4.00E-03	5.00E-02	2.22E+02	1.76E+02
Manganese	7.00E+02	5.14E+02	5.60E-01	1.00E+00	1.69E+01	1.24E+01
Nickel	3.49E+01	2.23E+01	2.80E-01	1.00E+02	3.37E+01	2.16E+01
Selenium	1.20E+00	6.07E-01	6.20E+00	4.70E-01	1.03E-01	5.19E-02
Thallium	1.70E+00	8.80E-01	4.00E-03	2.33E-01	1.74E-02	9.01E-03
Vanadium	2.46E+01	1.84E+01	1.00E-02	1.00E+00	4.34E-01	3.25E-01

TABLE M.77
Calculated Surface Soil (0-1 ft) Receptor Exposure
Group F - Disposal Pit C -SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP(1) (unitless)	BAF(2) (unitless)	Mourning Dove Max Exposure(3) (mg/kg/day)	Mourning Dove Mean Exposure(3) (mg/kg/day)
Zinc	6.56E+02	1.04E+02	1.40E+00	2.90E-01	1.79E+01	2.82E+00

(1) SP: soil-to-plant uptake factor.
(2) BAF: bioaccumulation factor.
(3) Exposure calculated as
ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW
Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.00925 kg/day) (Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.0015 kg/day) (Table M.46)
Is = incidental soil intake rate (0.00125 kg/day) (Table M.46)
SFF = site foraging factor (1) (default)
BW = body weight (0.157 kg) (Table M.46)

TABLE M.78
Calculated Subsurface Soil (0-4 ft) Receptor Exposure
Group F - Disposal Pit C -SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Mourning Dove Max Exposure[3] (mg/kg/day)	Mourning Dove Mean Exposure[3] (mg/kg/day)
Volatiles						
Acetone	6.10E-02	8.77E-03	5.33E+01	1.00E+00	1.93E-01	2.77E-02
Trichloroethene	2.00E-03	5.97E-03	1.22E+00	1.00E+00	1.78E-04	5.33E-04
PAHs						
2-Methylnaphthalene	7.80E-03	6.96E-02	1.63E-01	3.42E-01	1.63E-04	1.45E-03
Acenaphthene	4.40E-02	6.42E-02	2.10E-01	3.42E-01	1.04E-03	1.52E-03
Benzo(a)anthracene	2.00E-01	5.75E-02	1.51E-02	1.25E-01	2.01E-03	5.77E-04
Benzo(a)pyrene	1.80E-01	5.39E-02	1.02E+00	4.50E+00	2.00E-02	5.99E-03
Benzo(b)fluoranthene	3.20E-01	6.39E-02	1.00E-02	3.19E-01	3.71E-03	7.41E-04
Benzo(g,h,i)perylene	9.80E-02	5.04E-02	3.05E-03	2.44E-01	1.03E-03	5.28E-04
Benzo(k)fluoranthene	1.70E-01	6.30E-02	4.25E-03	2.53E-01	1.81E-03	6.70E-04
Chrysene	3.10E-01	6.42E-02	2.00E-02	1.75E-01	3.35E-03	6.94E-04
Dibenz(a,h)anthracene	9.90E-02	5.63E-02	8.16E-03	1.75E-01	1.00E-03	5.69E-04
Fluoranthene	3.20E-01	8.06E-02	3.72E-02	7.92E-02	3.49E-03	8.79E-04
Fluorene	3.50E-02	6.68E-02	1.49E-01	3.42E-01	6.99E-04	1.33E-03
Indeno(1,2,3-cd)pyrene	1.40E-01	5.42E-02	1.37E-03	4.19E-01	1.69E-03	6.53E-04
Phenanthrene	2.80E-01	5.92E-02	1.00E-01	1.22E-01	4.20E-03	8.89E-04
Pyrene	3.10E-01	7.68E-02	4.43E-02	9.20E-02	3.55E-03	8.79E-04
Semi-volatiles						
Bis(2-ethylhexyl)phthalate	1.60E-02	7.86E-02	1.00E-02	1.20E+01	1.97E-03	9.68E-03
Butylbenzylphthalate	3.00E-02	6.91E-02	1.00E+00	1.20E+01	5.45E-03	1.25E-02
Carbazole	4.00E-02	6.25E-02	1.00E+00	1.00E+00	3.06E-03	4.78E-03
Dibenzofuran	4.10E-03	7.15E-02	1.51E-01	1.00E+00	1.08E-04	1.89E-03
Di-n-octylphthalate	1.50E-02	6.99E-02	1.60E-04	1.20E+01	1.84E-03	8.57E-03
Pesticides						
4,4'-DDD	1.40E-02	2.70E-03	1.34E-02	1.00E-01	1.35E-04	2.62E-05
4,4'-DDE	6.40E-03	2.33E-03	1.80E-02	2.50E-01	7.30E-05	2.66E-05
4,4'-DDT	4.40E-03	2.28E-03	1.00E-02	2.50E-01	4.81E-05	2.49E-05
Metals						
Aluminum	1.86E+04	1.06E+04	4.00E-03	1.50E-02	1.52E+02	8.64E+01
Cadmium	3.60E+00	2.66E-01	5.50E-01	2.80E-02	5.30E-02	3.91E-03
Chromium	2.97E+01	1.69E+01	7.50E-03	1.00E+00	5.23E-01	2.98E-01
Copper	7.45E+01	2.23E+01	4.00E-01	6.82E-01	1.43E+00	4.28E-01
Iron	5.10E+04	2.17E+04	4.00E-03	5.00E-02	4.33E+02	1.84E+02

TABLE M.78
Calculated Subsurface Soil (0-4 ft) Receptor Exposure
Group F - Disposal Pit C -SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP(1) (unitless)	BAF(2) (unitless)	Mourning Dove Max Exposure(3) (mg/kg/day)	Mourning Dove Mean Exposure(3) (mg/kg/day)
Lead	9.09E+01	2.02E+01	5.80E-03	4.24E-01	1.10E+00	2.44E-01
Manganese	8.57E+02	4.90E+02	5.60E-01	1.00E+00	2.07E+01	1.18E+01
Mercury	1.50E-01	4.83E-02	9.00E-01	2.30E+01	3.57E-02	1.15E-02
Nickel	4.55E+01	2.50E+01	2.80E-01	1.00E+02	4.40E+01	2.42E+01
Selenium	1.90E+00	7.11E-01	6.20E+00	4.70E-01	1.62E-01	6.08E-02
Thallium	1.70E+00	7.54E-01	4.00E-03	2.33E-01	1.74E-02	7.72E-03
Vanadium	3.64E+01	1.89E+01	1.00E-02	1.00E+00	6.42E-01	3.33E-01
Zinc	6.08E+03	2.96E+02	1.40E+00	2.90E-01	1.66E+02	8.06E+00

(1) SP: soil-to-plant uptake factor.
(2) BAF: bioaccumulation factor.
(3) Exposure calculated as
ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW
Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.00925 kg/day) (Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
SFF = site foraging factor (1) (default)
BW = body weight (0.157 kg) (Table M.46)

TABLE M.79
Calculated Surface Soil (0-1 ft) Hazard Quotients - Mourning Dove
Group F - Disposal Pit C -SEAD-12
Seneca Army Depot, NY

Constituent	Mourning Dove Max Exposure[1] (mg/kg/day)	Mourning Dove Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	1.93E-01	3.35E-02	4.51E+01	4.51E+02	4.3E-03	7.4E-04	4.3E-04	7.4E-05
PAHs								
2-Methylnaphthalene	1.63E-04	9.71E-04	2.85E+01	2.85E+02	5.7E-06	3.4E-05	5.7E-07	3.4E-06
Acenaphthene	1.04E-03	7.93E-04	2.85E+01	2.85E+02	3.6E-05	2.8E-05	3.6E-06	2.8E-06
Benzo(a)anthracene	2.01E-03	3.78E-04	2.85E+01	2.85E+02	7.0E-05	1.3E-05	7.0E-06	1.3E-06
Benzo(b)fluoranthene	2.32E-03	4.57E-04	2.85E+01	2.85E+02	8.1E-05	1.6E-05	8.1E-06	1.6E-06
Benzo(g,h,i)perylene	3.67E-04	2.71E-04	2.85E+01	2.85E+02	1.3E-05	9.5E-06	1.3E-06	9.5E-07
Benzo(k)fluoranthene	1.81E-03	3.80E-04	2.85E+01	2.85E+02	6.3E-05	1.3E-05	6.3E-06	1.3E-06
Chrysene	3.35E-03	4.94E-04	2.85E+01	2.85E+02	1.2E-04	1.7E-05	1.2E-05	1.7E-06
Dibenz(a,h)anthracene	4.35E-04	2.89E-04	2.85E+01	2.85E+02	1.5E-05	1.0E-05	1.5E-06	1.0E-06
Fluoranthene	3.27E-03	6.68E-04	2.85E+01	2.85E+02	1.1E-04	2.3E-05	1.1E-05	2.3E-06
Fluorene	6.99E-04	7.75E-04	2.85E+01	2.85E+02	2.5E-05	2.7E-05	2.5E-06	2.7E-06
Indeno(1,2,3-cd)pyrene	8.31E-04	3.41E-04	2.85E+01	2.85E+02	2.9E-05	1.2E-05	2.9E-06	1.2E-06
Phenanthrene	4.20E-03	6.04E-04	2.85E+01	2.85E+02	1.5E-04	2.1E-05	1.5E-05	2.1E-06
Pyrene	3.55E-03	7.16E-04	2.85E+01	2.85E+02	1.2E-04	2.5E-05	1.2E-05	2.5E-06
Semi-volatiles								
Bis(2-ethylhexyl)phthalate	7.15E-04	5.92E-03	1.11E+00	1.11E+01	6.4E-04	5.3E-03	6.4E-05	5.3E-04
Butylbenzylphthalate	7.44E-04	8.44E-03	no data	no data	--	--	--	--
Carbazole	3.06E-03	2.44E-03	no data	no data	--	--	--	--
Di-n-octylphthalate	1.84E-03	5.30E-03	1.11E+00	1.11E+00	1.7E-03	4.8E-03	1.7E-03	4.8E-03
Pesticides								
4,4'-DDD	1.35E-04	3.24E-05	5.60E-02	5.63E-01	2.4E-03	5.8E-04	2.4E-04	5.7E-05
4,4'-DDE	7.30E-05	2.87E-05	2.80E-03	2.80E-02	2.6E-02	1.0E-02	2.6E-03	1.0E-03
4,4'-DDT	4.16E-05	2.39E-05	2.80E-03	2.80E-02	1.5E-02	8.5E-03	1.5E-03	8.5E-04
Metals								
Aluminum	1.15E+02	8.57E+01	1.10E+02	1.10E+03	1.0E+00	7.8E-01	1.0E-01	7.8E-02
Chromium	4.33E-01	2.93E-01	1.00E+00	5.00E+00	4.3E-01	2.9E-01	8.7E-02	5.9E-02
Iron	2.22E+02	1.76E+02	no data	No data	--	--	--	--

TABLE M.79
Calculated Surface Soil (0-1 ft) Hazard Quotients - Mourning Dove
Group F - Disposal Pit C -SEAD-12
Seneca Army Depot, NY

Constituent	Mourning Dove Max Exposure[1] (mg/kg/day)	Mourning Dove Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Manganese	1.69E+01	1.24E+01	9.77E+02	9.77E+03	1.7E-02	1.3E-02	1.7E-03	1.3E-03
Nickel	3.37E+01	2.16E+01	7.74E+01	1.07E+02	4.4E-01	2.8E-01	3.2E-01	2.0E-01
Selenium	1.03E-01	5.19E-02	4.00E-01	8.00E-01	2.6E-01	1.3E-01	1.3E-01	6.5E-02
Thallium	1.74E-02	9.01E-03	9.50E-02	9.50E-02	1.8E-01	9.5E-02	1.8E-01	9.5E-02
Vanadium	4.34E-01	3.25E-01	1.14E+01	1.14E+02	3.8E-02	2.9E-02	3.8E-03	2.9E-03
Zinc	1.79E+01	2.82E+00	1.45E+01	1.31E+02	**1.2E+00**	1.9E-01	1.4E-01	2.2E-02

(1) Receptor exposure from Table M.77
(2) NOAEL toxicity reference value from Table M.40
(3) LOAEL toxicity reference value from Table M.41
(4) Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ >= 1.

TABLE M.80
Calculated Subsurface Soil (0-4 ft) Hazard Quotients - Mourning Dove
Group F - Disposal Pit C -SEAD-12
Seneca Army Depot, NY

Constituent	Mourning Dove Max Exposure[1] (mg/kg/day)	Mourning Dove Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	1.93E-01	2.77E-02	4.51E+01	4.51E+02	4.3E-03	6.1E-04	4.3E-04	6.1E-05
Trichloroethene	1.78E-04	5.33E-04	no data	no data	--	--	--	--
PAHs								
2-Methylnaphthalene	1.63E-04	1.45E-03	2.85E+01	2.85E+02	5.7E-06	5.1E-05	5.7E-07	5.1E-06
Acenaphthene	1.04E-03	1.52E-03	2.85E+01	2.85E+02	3.6E-05	5.3E-05	3.6E-06	5.3E-06
Benzo(a)anthracene	2.01E-03	5.77E-04	2.85E+01	2.85E+02	7.0E-05	2.0E-05	7.0E-06	2.0E-06
Benzo(a)pyrene	2.00E-02	5.99E-03	2.85E+01	2.85E+02	7.0E-04	2.1E-04	7.0E-05	2.1E-05
Benzo(b)fluoranthene	3.71E-03	7.41E-04	2.85E+01	2.85E+02	1.3E-04	2.6E-05	1.3E-05	2.6E-06
Benzo(g,h,i)perylene	1.03E-03	5.28E-04	2.85E+01	2.85E+02	3.6E-05	1.9E-05	3.6E-06	1.9E-06
Benzo(k)fluoranthene	1.81E-03	6.70E-04	2.85E+01	2.85E+02	6.3E-05	2.4E-05	6.3E-06	2.4E-06
Chrysene	3.35E-03	6.94E-04	2.85E+01	2.85E+02	1.2E-04	2.4E-05	1.2E-05	2.4E-06
Dibenz(a,h)anthracene	1.00E-03	5.69E-04	2.85E+01	2.85E+02	3.5E-05	2.0E-05	3.5E-06	2.0E-06
Fluoranthene	3.49E-03	8.79E-04	2.85E+01	2.85E+02	1.2E-04	3.1E-05	1.2E-05	3.1E-06
Fluorene	6.99E-04	1.33E-03	2.85E+01	2.85E+02	2.5E-05	4.7E-05	2.5E-06	4.7E-06
Indeno(1,2,3-cd)pyrene	1.69E-03	6.53E-04	2.85E+01	2.85E+02	5.9E-05	2.3E-05	5.9E-06	2.3E-06
Phenanthrene	4.20E-03	8.89E-04	2.85E+01	2.85E+02	1.5E-04	3.1E-05	1.5E-05	3.1E-06
Pyrene	3.55E-03	8.79E-04	2.85E+01	2.85E+02	1.2E-04	3.1E-05	1.2E-05	3.1E-06
Semi-volatiles								
Bis(2-ethylhexyl)phthalate	1.97E-03	9.68E-03	1.11E+00	1.11E+01	1.8E-03	8.7E-03	1.8E-04	8.7E-04
Butylbenzylphthalate	5.45E-03	1.25E-02	no data	no data	--	--	--	--
Carbazole	3.06E-03	4.78E-03	no data	no data	--	--	--	--
Dibenzofuran	1.08E-04	1.89E-03	2.18E-01	2.18E-01	5.0E-04	8.7E-03	5.0E-04	8.7E-03
Di-n-octylphthalate	1.84E-03	8.57E-03	1.11E+00	1.11E+00	1.7E-03	7.7E-03	1.7E-03	7.7E-03
Pesticides								
4,4'-DDD	1.35E-04	2.62E-05	5.60E-02	5.63E-01	2.4E-03	4.7E-04	2.4E-04	4.7E-05
4,4'-DDE	7.30E-05	2.66E-05	2.80E-03	2.80E-02	2.6E-02	9.5E-03	2.6E-03	9.5E-04
4,4'-DDT	4.81E-05	2.49E-05	2.80E-03	2.80E-02	1.7E-02	8.9E-03	1.7E-03	8.9E-04
Metals								
Aluminum	1.52E+02	8.64E+01	1.10E+02	1.10E+03	**1.4E+00**	7.9E-01	1.4E-01	7.9E-02
Cadmium	5.30E-02	3.91E-03	1.45E+00	2.00E+01	3.7E-02	2.7E-03	2.6E-03	2.0E-04

TABLE M.80
Calculated Subsurface Soil (0-4 ft) Hazard Quotients - Mourning Dove
Group F - Disposal Pit C -SEAD-12
Seneca Army Depot, NY

Constituent	Mourning Dove Max Exposure[1] (mg/kg/day)	Mourning Dove Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Chromium	5.23E-01	2.98E-01	1.00E+00	5.00E+00	5.2E-01	3.0E-01	1.0E-01	6.0E-02
Copper	1.43E+00	4.28E-01	4.70E+01	4.70E+02	3.0E-02	9.1E-03	3.0E-03	9.1E-04
Iron	4.33E+02	1.84E+02	no data	No data	--	--	--	--
Lead	1.10E+00	2.44E-01	1.13E+00	1.13E+01	9.7E-01	2.2E-01	9.7E-02	2.2E-02
Manganese	2.07E+01	1.18E+01	9.77E+02	9.77E+03	2.1E-02	1.2E-02	2.1E-03	1.2E-03
Mercury	3.57E-02	1.15E-02	3.25E+00	3.25E+01	1.1E-02	3.5E-03	1.1E-03	3.5E-04
Nickel	4.40E+01	2.42E+01	7.74E+01	1.07E+02	5.7E-01	3.1E-01	4.1E-01	2.3E-01
Selenium	1.62E-01	6.08E-02	4.00E-01	8.00E-01	4.1E-01	1.5E-01	2.0E-01	7.6E-02
Thallium	1.74E-02	7.72E-03	9.50E-02	9.50E-02	1.8E-01	8.1E-02	1.8E-01	8.1E-02
Vanadium	6.42E-01	3.33E-01	1.14E+01	1.14E+02	5.6E-02	2.9E-02	5.6E-03	2.9E-03
Zinc	1.66E+02	8.06E+00	1.45E+01	1.31E+02	**1.1E+01**	5.6E-01	**1.3E+00**	6.2E-02

(1) Receptor exposure from Table M.78
(2) NOAEL toxicity reference value from Table M.40
(3) LOAEL toxicity reference value from Table M.41
(4) Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ >= 1.

TABLE M.81

Invertebrate Risk Screening for COPCs
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Class	Analyte	Surface Soil (0-1 ft)			Mixed Surface and Subsurface Soil (0-4 ft)			Comparison to Benchmark[1]		
		Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Earth-worms	Micro-organisms	Exceeds Benchmark?
Volatiles	Acetone	1.06E-02	6.10E-02	TP12-3A	8.77E-03	6.10E-02	TP12-3A	na	na	No Criteria
	Trichloroethene	--	--	--	6.00E-03	2.00E-03	TP12A-4	na	na	No Criteria
PAHs	2-Methylnaphthalene	4.66E-02	7.80E-03	TP12-7AA	7.29E-02	7.80E-03	TP12-3B	na	na	No Criteria
	Acenaphthene	3.36E-02	4.40E-02	TP12A-6	6.60E-02	4.40E-02	TP12A-6	na	na	No Criteria
	Benzo(a)anthracene	3.77E-02	2.00E-01	TP12-8A	6.07E-02	2.00E-01	TP12-8A	na	na	No Criteria
	Benzo(a)pyrene	--	--	--	5.74E-02	1.80E-01	TP12A-7	na	na	No Criteria
	Benzo(b)fluoranthene	3.94E-02	2.00E-01	TP12-8A	6.74E-02	3.20E-01	TP12A-7	na	na	No Criteria
	Benzo(ghi)perylene	2.58E-02	3.50E-02	TP12-8A	5.26E-02	9.80E-02	TP12A-7	na	na	No Criteria
	Benzo(k)fluoranthene	3.57E-02	1.70E-01	TP12-8A	6.56E-02	1.70E-01	TP12-8A	na	na	No Criteria
	Chrysene	4.57E-02	3.10E-01	TP12-8A	6.76E-02	3.10E-01	TP12-8A	na	na	No Criteria
	Dibenz(a,h)anthracene	2.86E-02	4.30E-02	TP12A-6	5.75E-02	9.90E-02	TP12A-7	na	na	No Criteria
	Fluoranthene	6.12E-02	3.00E-01	TP12A-6	8.33E-02	3.20E-01	TP12A-7	na	na	No Criteria
	Fluorene	3.88E-02	3.50E-02	TP12A-6	6.88E-02	3.50E-02	TP12A-6	30	30	No
	Indeno(1,2,3-cd)pyrene	2.83E-02	6.90E-02	TP12A-6	5.63E-02	1.40E-01	TP12A-7	na	na	No Criteria
	Phenanthrene	4.02E-02	2.80E-01	TP12A-6	6.09E-02	2.80E-01	TP12A-6	na	na	No Criteria
	Pyrene	6.25E-02	3.10E-01	TP12-8A	8.05E-02	3.10E-01	TP12-8A	na	na	No Criteria
Semi-vols	Bis(2-Ethylhexyl)phthalate	4.80E-02	5.80E-03	MW12-15	7.19E-02	1.60E-02	TP12-6C	na	na	No Criteria
	Butylbenzylphthalate	4.65E-02	4.10E-03	TP12-3A	7.12E-02	3.00E-02	TP12-6C	na	na	No Criteria
	Carbazole	3.20E-02	4.00E-02	TP12A-6	6.52E-02	4.00E-02	TP12A-6	na	na	No Criteria
	Di-n-octylphthalate	4.32E-02	1.50E-02	MW12-33	7.21E-02	1.50E-02	MW12-34	na	na	No Criteria
Pesticides	4,4'-DDD	3.33E-03	1.40E-02	TP12-5A	2.78E-03	1.40E-02	TP12-5A	na	na	No Criteria
	4,4'-DDE	2.51E-03	6.40E-03	TP12A-6	2.37E-03	6.40E-03	TP12A-6	na	na	No Criteria
	4,4'-DDT	2.18E-03	3.80E-03	TP12A-6	2.32E-03	4.40E-03	TP12-4B	na	na	No Criteria
Metals	Aluminum	1.05E+04	1.41E+04	MW12-33	1.05E+04	1.86E+04	TP12A-7	na	600	Yes
	Cadmium	--	--	--	2.91E-01	3.60E+00	TP12-3B	20	20	No
	Chromium	1.66E+01	2.46E+01	TP12-7AA	1.65E+01	2.50E+01	TP12-3B	na	10	Yes
	Iron	2.07E+04	2.61E+04	TP12A-6	2.08E+04	3.45E+04	TP12A-7	na	200	Yes
	Manganese	5.14E+02	7.00E+02	MW12-33	4.91E+02	8.57E+02	TP12A-7	na	100	Yes
	Mercury	--	--	--	4.62E-02	1.10E-01	TP12A-7	na	30	No
	Nickel	2.23E+01	3.49E+01	TP12-7BA	2.47E+01	4.55E+01	TP12-8B	200	90	No
	Selenium	6.07E-01	1.20E+00	TP12A-6	7.37E-01	1.90E+00	TP12A-3	70	100	No
	Thallium	8.80E-01	1.70E+00	MW12-14,TP12-7AA	7.56E-01	1.70E+00	MW12-14,TP12-7AA	na	na	No Criteria
	Vanadium	1.84E+01	2.46E+01	MW12-33	1.89E+01	3.64E+01	TP12A-7	na	20	Yes
	Zinc	1.04E+02	6.56E+02	TP12-7BA	1.13E+02	6.56E+02	TP12-7BA	200	100	Yes

Notes:

-- analyte is not a COPC in this medium.

TABLE M.81

Invertebrate Risk Screening for COPCs
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

		Surface Soil (0-1 ft)			Mixed Surface and Subsurface Soil (0-4 ft)			Comparison to Benchmark[1]		
Class	Analyte	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Earth-worms	Micro-organisms	Exceeds Benchmark?

1 Will, M.E. and G.W. Suter II, *Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process*, Martin Marietta Environmental Restoration Program, September 1994.

Earthworms-Screening benchmark concentrations for the toxicity of chemicals to earthworms.

Microorganisms-Screening benchmark concentrations for the toxicity of chemicals to soil microorganisms and microbial processes.

na criteria is not available.

TABLE M.82
Calculated Surface Soil (0-1' bls) Exposure - Meadow Vole
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)
Volatiles						
1,2,4-Trichlorobenzene	1.10E-02	4.71E-02	1.63E-01	1.00E+00	1.94E-05	8.32E-05
Acetone	2.60E-02	7.13E-03	5.33E+01	3.90E-01	2.89E-03	7.93E-04
PAHs						
2-Methylnaphthalene	5.50E-03	4.66E-02	1.63E-01	3.42E-01	8.88E-06	7.53E-05
Benzo(a)anthracene	2.60E-02	2.72E-02	1.51E-02	1.25E-01	3.28E-05	3.43E-05
Benzo(b)fluoranthene	3.40E-02	2.41E-02	1.00E-02	3.20E-01	4.40E-05	3.12E-05
Benzo(g,h,i)perylene	1.10E-02	4.25E-02	3.05E-03	2.40E-01	1.39E-05	5.36E-05
Benzo(k)fluoranthene	2.00E-02	2.67E-02	4.25E-03	2.53E-01	2.53E-05	3.39E-05
Chrysene	3.20E-02	2.19E-02	2.00E-02	1.75E-01	4.10E-05	2.81E-05
Dibenz(a,h)anthracene	4.80E-03	4.62E-02	8.16E-03	1.75E-01	6.03E-06	5.81E-05
Indeno(1,2,3-cd)pyrene	7.30E-03	3.96E-02	1.37E-03	4.19E-01	9.48E-06	5.15E-05
Semi-volatiles						
Bis(2-ethylhexyl)phthalate	3.60E-02	4.21E-02	1.00E-02	1.20E+01	1.43E-04	1.67E-04
Butylbenzylphthalate	5.90E-03	4.64E-02	1.00E+00	1.00E+00	2.06E-05	1.62E-04
Di-n-octylphthalate	1.50E-02	4.13E-02	1.60E-04	4.90E+03	1.69E-02	4.65E-02
PCBs						
Arochlor 1254	2.30E-02	1.95E-02	1.00E-02	4.50E+00	5.19E-05	4.39E-05
Arochlor 1260	2.50E-02	1.96E-02	3.93E-03	5.50E+00	6.18E-05	4.85E-05
Pesticides						
4,4'-DDT	4.20E-03	2.07E-03	1.00E-02	1.00E-01	5.22E-06	2.58E-06

TABLE M.82
Calculated Surface Soil (0-1' bls) Exposure - Meadow Vole
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)
Metals						
Aluminum	1.36E+04	9.38E+03	4.00E-03	1.50E-02	1.64E+01	1.13E+01
Chromium	1.89E+01	1.46E+01	7.50E-03	7.75E-01	2.61E-02	2.01E-02
Copper	4.11E+01	2.20E+01	4.00E-01	6.82E-01	6.25E-02	3.34E-02
Iron	4.11E+04	2.04E+04	4.00E-03	5.00E-02	4.99E+01	2.47E+01
Manganese	6.29E+02	4.41E+02	5.60E-01	1.00E+00	1.04E+00	7.32E-01
Mercury	2.90E-01	4.57E-02	9.00E-01	2.30E+01	1.99E-03	3.13E-04
Nickel	3.03E+01	2.18E+01	2.80E-01	1.00E+02	7.37E-01	5.30E-01
Selenium	1.30E+00	5.06E-01	6.20E+00	5.00E+00	6.38E-03	2.48E-03
Thallium	2.20E+00	8.05E-01	4.00E-03	2.33E-01	2.76E-03	1.01E-03
Vanadium	2.28E+01	1.69E+01	1.00E-02	1.00E+00	3.27E-02	2.42E-02
Zinc	8.00E+01	5.35E+01	1.40E+00	9.90E+00	3.24E-01	2.17E-01

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW

Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.0001031 kg/day) (from Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.0000115 kg/day) (Table M.46)
Is = incidental soil intake rate (0.00006 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.05 kg) (Table M.46)

TABLE M.83
Calculated Mixed Soil (0-4' bls) Exposure - Meadow Vole
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)
Volatiles						
1,2,4-Trichlorobenzene	1.10E-02	6.61E-02	1.63E-01	1.00E+00	1.94E-05	1.17E-04
Acetone	2.60E-02	7.00E-03	5.33E+01	3.90E-01	2.89E-03	7.78E-04
PAHs						
2-Methylnaphthalene	5.50E-03	6.58E-02	1.63E-01	3.42E-01	8.88E-06	1.06E-04
Benzo(a)anthracene	2.60E-02	5.37E-02	1.51E-02	1.25E-01	3.28E-05	6.77E-05
Benzo(b)fluoranthene	3.40E-02	5.13E-02	1.00E-02	3.20E-01	4.40E-05	6.64E-05
Benzo(g,h,i)perylene	1.10E-02	6.29E-02	3.05E-03	2.40E-01	1.39E-05	7.94E-05
Benzo(k)fluoranthene	2.00E-02	5.19E-02	4.25E-03	2.53E-01	2.53E-05	6.57E-05
Chrysene	3.20E-02	4.82E-02	2.00E-02	1.75E-01	4.10E-05	6.17E-05
Dibenz(a,h)anthracene	4.80E-03	6.55E-02	8.16E-03	1.75E-01	6.03E-06	8.23E-05
Indeno(1,2,3-cd)pyrene	7.30E-03	6.09E-02	1.37E-03	4.19E-01	9.48E-06	7.91E-05
Semi-volatiles						
bis(2-Ethylhexyl)phthalate	3.60E-02	6.24E-02	1.00E-02	1.20E+01	1.43E-04	2.48E-04
Butylbenzylphthalate	5.90E-03	6.56E-02	1.00E+00	1.00E+00	2.06E-05	2.29E-04
Di-n-octylphthalate	1.50E-02	6.20E-02	1.60E-04	4.90E+03	1.69E-02	7.00E-02
PCBs						
Aroclor 1254	2.30E-02	1.91E-02	1.00E-02	4.50E+00	5.19E-05	4.31E-05
Arochlor 1260	2.50E-02	1.92E-02	3.93E-03	5.50E+00	6.18E-05	4.75E-05
Pesticides						
4,4'-DDT	4.20E-03	2.00E-03	1.00E-02	1.00E-01	5.22E-06	2.48E-06

TABLE M.83
Calculated Mixed Soil (0-4' bls) Exposure - Meadow Vole
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Vole Max Exposure[3] (mg/kg/day)	Vole Mean Exposure[3] (mg/kg/day)
Metals						
Aluminum	1.45E+04	9.01E+03	4.00E-03	1.50E-02	1.75E+01	1.09E+01
Chromium	2.08E+01	1.40E+01	7.50E-03	7.75E-01	2.87E-02	1.94E-02
Copper	4.11E+01	2.23E+01	4.00E-01	6.82E-01	6.25E-02	3.39E-02
Iron	4.11E+04	1.91E+04	4.00E-03	5.00E-02	4.99E+01	2.32E+01
Manganese	5.96E+02	4.14E+02	5.60E-01	1.00E+00	9.90E-01	6.87E-01
Mercury	2.90E-01	4.25E-02	9.00E-01	2.30E+01	1.99E-03	2.92E-04
Nickel	3.19E+01	2.20E+01	2.80E-01	1.00E+02	7.76E-01	5.35E-01
Selenium	1.30E+00	4.61E-01	6.20E+00	5.00E+00	6.38E-03	2.26E-03
Thallium	2.20E+00	7.30E-01	4.00E-03	2.33E-01	2.76E-03	9.17E-04
Vanadium	2.38E+01	1.64E+01	1.00E-02	1.00E+00	3.41E-02	2.35E-02
Zinc	8.00E+01	5.05E+01	1.40E+00	9.90E+00	3.24E-01	2.05E-01

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW

Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.0000115 kg/day) (Table M.46)
Is = incidental soil intake rate (0.00006 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.05 kg) (Table M.46)

TABLE M.84
Calculated Surface Soil (0-1' bls) Hazard Quotients - Meadow Vole
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Vole Max Exposure[1] (mg/kg/day)	Vole Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
1,2,4-Trichlorobenzene*	1.94E-05	8.32E-05	No data	No data	--	--	--	--
Acetone	2.89E-03	7.93E-04	1.00E+02	5.00E+02	2.9E-05	7.9E-06	5.8E-06	1.6E-06
PAHs								
2-Methylnaphthalene*	8.88E-06	7.53E-05	7.16E+00	7.16E+01	1.2E-06	1.1E-05	1.2E-07	1.1E-06
Benzo(a)anthracene*	3.28E-05	3.43E-05	1.00E+00	1.00E+01	3.3E-05	3.4E-05	3.3E-06	3.4E-06
Benzo(b)fluoranthene	4.40E-05	3.12E-05	1.00E+00	1.00E+01	4.4E-05	3.1E-05	4.4E-06	3.1E-06
Benzo(g,h,i)perylene*	1.39E-05	5.36E-05	1.00E+00	1.00E+01	1.4E-05	5.4E-05	1.4E-06	5.4E-06
Benzo(k)fluoranthene*	2.53E-05	3.39E-05	1.00E+00	1.00E+01	2.5E-05	3.4E-05	2.5E-06	3.4E-06
Chrysene	4.10E-05	2.81E-05	1.00E+00	1.00E+01	4.1E-05	2.8E-05	4.1E-06	2.8E-06
Dibenz(a,h)anthracene*	6.03E-06	5.81E-05	1.00E+00	1.00E+01	6.0E-06	5.8E-05	6.0E-07	5.8E-06
Indeno(1,2,3-cd)pyrene*	9.48E-06	5.15E-05	1.00E+00	1.00E+01	9.5E-06	5.1E-05	9.5E-07	5.1E-06
Semi-volatiles								
Bis(2-ethylhexyl)phthalate*	1.43E-04	1.67E-04	1.83E+01	1.83E+02	7.8E-06	9.1E-06	7.8E-07	9.1E-07
Butylbenzylphthalate*	2.06E-05	1.62E-04	1.59E+02	4.70E+02	1.3E-07	1.0E-06	4.4E-08	3.4E-07
Di-n-octylphthalate*	1.69E-02	4.65E-02	6.51E+01	6.51E+01	2.6E-04	7.1E-04	2.6E-04	7.1E-04
PCBs								
Aroclor 1254	5.19E-05	4.39E-05	6.80E-02	6.80E-01	7.6E-04	6.5E-04	7.6E-05	6.5E-05
Arochlor 1260	6.18E-05	4.85E-05	6.80E-02	6.80E-01	9.1E-04	7.1E-04	9.1E-05	7.1E-05
Pesticides								
4,4'-DDT	5.22E-06	2.58E-06	8.00E-01	4.00E+00	6.5E-06	3.2E-06	1.3E-06	6.4E-07
Metals								
Aluminum	1.64E+01	1.13E+01	1.93E+00	1.93E+01	**8.5E+00**	**5.9E+00**	8.5E-01	5.9E-01
Chromium	2.61E-02	2.01E-02	2.74E+03	2.74E+04	9.5E-06	7.3E-06	9.5E-07	7.3E-07
Copper	6.25E-02	3.34E-02	1.40E+01	2.80E+01	4.5E-03	2.4E-03	2.2E-03	1.2E-03
Iron	4.99E+01	2.47E+01	2.55E+01	2.55E+01	**2.0E+00**	9.7E-01	**2.0E+00**	9.7E-01
Manganese	1.04E+00	7.32E-01	8.80E+01	2.84E+02	1.2E-02	8.3E-03	3.7E-03	2.6E-03
Mercury	1.99E-03	3.13E-04	1.32E+01	1.32E+02	1.5E-04	2.4E-05	1.5E-05	2.4E-06
Nickel	7.37E-01	5.30E-01	4.00E+01	8.00E+01	1.8E-02	1.3E-02	9.2E-03	6.6E-03
Selenium	6.38E-03	2.48E-03	2.00E-01	3.30E-01	3.2E-02	1.2E-02	1.9E-02	7.5E-03
Thallium	2.76E-03	1.01E-03	7.40E-02	7.40E-01	3.7E-02	1.4E-02	3.7E-03	1.4E-03
Vanadium	3.27E-02	2.42E-02	2.10E-01	2.10E+00	1.6E-01	1.2E-01	1.6E-02	1.2E-02

TABLE M.84
Calculated Surface Soil (0-1' bls) Hazard Quotients - Meadow Vole
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Vole Max Exposure[1] (mg/kg/day)	Vole Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Zinc	3.24E-01	2.17E-01	1.60E+02	3.20E+02	2.0E-03	1.4E-03	1.0E-03	6.8E-04

1 Receptor exposure from Table M.82
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ > 1.
* Mean is greater than the maximum because of using 1/2 detection limit to calculate.

TABLE M.85
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Meadow Vole
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Vole Max Exposure[1] (mg/kg/day)	Vole Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
1,2,4-Trichlorobenzene*	1.94E-05	1.17E-04	No data	No data	--	--	--	--
Acetone	2.89E-03	7.78E-04	1.00E+02	5.00E+02	2.9E-05	7.8E-06	5.8E-06	1.6E-06
PAHs								
2-Methylnaphthalene*	8.88E-06	1.06E-04	7.16E+00	7.16E+01	1.2E-06	1.5E-05	1.2E-07	1.5E-06
Benzo(a)anthracene*	3.28E-05	6.77E-05	1.00E+00	1.00E+01	3.3E-05	6.8E-05	3.3E-06	6.8E-06
Benzo(b)fluoranthene*	4.40E-05	6.64E-05	1.00E+00	1.00E+01	4.4E-05	6.6E-05	4.4E-06	6.6E-06
Benzo(g,h,i)perylene*	1.39E-05	7.94E-05	1.00E+00	1.00E+01	1.4E-05	7.9E-05	1.4E-06	7.9E-06
Benzo(k)fluoranthene*	2.53E-05	6.57E-05	1.00E+00	1.00E+01	2.5E-05	6.6E-05	2.5E-06	6.6E-06
Chrysene*	4.10E-05	6.17E-05	1.00E+00	1.00E+01	4.1E-05	6.2E-05	4.1E-06	6.2E-06
Dibenz(a,h)anthracene*	6.03E-06	8.23E-05	1.00E+00	1.00E+01	6.0E-06	8.2E-05	6.0E-07	8.2E-06
Indeno(1,2,3-cd)pyrene*	9.48E-06	7.91E-05	1.00E+00	1.00E+01	9.5E-06	7.9E-05	9.5E-07	7.9E-06
Semi-volatiles								
bis(2-Ethylhexyl)phthalate*	1.43E-04	2.48E-04	1.83E+01	1.83E+02	7.8E-06	1.4E-05	7.8E-07	1.4E-06
Butylbenzylphthalate*	2.06E-05	2.29E-04	1.59E+02	4.70E+02	1.3E-07	1.4E-06	4.4E-08	4.9E-07
Di-n-octylphthalate*	1.69E-02	7.00E-02	6.51E+01	6.51E+01	2.6E-04	1.1E-03	2.6E-04	1.1E-03
PCBs								
Aroclor 1254	5.19E-05	4.31E-05	6.80E-02	6.80E-01	7.6E-04	6.3E-04	7.6E-05	6.3E-05
Arochlor 1260	6.18E-05	4.75E-05	6.80E-02	6.80E-01	9.1E-04	7.0E-04	9.1E-05	7.0E-05
Pesticides								
4,4'-DDT	5.22E-06	2.48E-06	8.00E-01	4.00E+00	6.5E-06	3.1E-06	1.3E-06	6.2E-07

TABLE M.85
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Meadow Vole
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Vole Max Exposure[1] (mg/kg/day)	Vole Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Metals								
Aluminum	1.75E+01	1.09E+01	1.93E+00	1.93E+01	**9.1E+00**	**5.6E+00**	9.1E-01	5.6E-01
Chromium	2.87E-02	1.94E-02	2.74E+03	2.74E+04	1.0E-05	7.1E-06	1.0E-06	7.1E-07
Copper	6.25E-02	3.39E-02	1.40E+01	2.80E+01	4.5E-03	2.4E-03	2.2E-03	1.2E-03
Iron	4.99E+01	2.32E+01	2.55E+01	2.55E+01	**2.0E+00**	9.1E-01	**2.0E+00**	9.1E-01
Manganese	9.90E-01	6.87E-01	8.80E+01	2.84E+02	1.1E-02	7.8E-03	3.5E-03	2.4E-03
Mercury	1.99E-03	2.92E-04	1.32E+01	1.32E+02	1.5E-04	2.2E-05	1.5E-05	2.2E-06
Nickel	7.76E-01	5.35E-01	4.00E+01	8.00E+01	1.9E-02	1.3E-02	9.7E-03	6.7E-03
Selenium	6.38E-03	2.26E-03	2.00E-01	3.30E-01	3.2E-02	1.1E-02	1.9E-02	6.9E-03
Thallium	2.76E-03	9.17E-04	7.40E-02	7.40E-01	3.7E-02	1.2E-02	3.7E-03	1.2E-03
Vanadium	3.41E-02	2.35E-02	2.10E-01	2.10E+00	1.6E-01	1.1E-01	1.6E-02	1.1E-02
Zinc	3.24E-01	2.05E-01	1.60E+02	3.20E+02	2.0E-03	1.3E-03	1.0E-03	6.4E-04

1 Receptor exposure from Table M.83
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value

BOLD : represents receptor HQ > 1.

* Mean is greater than the maximum because of using 1/2 detection limit to calculate.

TABLE M.86
Calculated Surface Soil (0-1' bls) Exposure - Short-tailed Shrew
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Volatiles						
1,2,4-Trichlorobenzene	1.10E-02	4.71E-02	1.63E-01	1.00E+00	5.71E-03	2.44E-02
Acetone	2.60E-02	7.13E-03	5.33E+01	3.90E-01	1.48E-01	4.07E-02
PAHs						
2-Methylnaphthalene	5.50E-03	4.66E-02	1.63E-01	3.42E-01	1.04E-03	8.83E-03
Benzo(a)anthracene	2.60E-02	2.72E-02	1.51E-02	1.25E-01	1.71E-03	1.78E-03
Benzo(b)fluoranthene	3.40E-02	2.41E-02	1.00E-02	3.20E-01	5.53E-03	3.92E-03
Benzo(g,h,i)perylene	1.10E-02	4.25E-02	3.05E-03	2.40E-01	1.34E-03	5.18E-03
Benzo(k)fluoranthene	2.00E-02	2.67E-02	4.25E-03	2.53E-01	2.57E-03	3.44E-03
Chrysene	3.20E-02	2.19E-02	2.00E-02	1.75E-01	2.92E-03	2.00E-03
Dibenz(a,h)anthracene	4.80E-03	4.62E-02	8.16E-03	1.75E-01	4.32E-04	4.15E-03
Indeno(1,2,3-cd)pyrene	7.30E-03	3.96E-02	1.37E-03	4.19E-01	1.54E-03	8.38E-03
Semi-volatiles						
Bis(2-ethylhexyl)phthalate	3.60E-02	4.21E-02	1.00E-02	1.20E+01	2.16E-01	2.53E-01
Butylbenzylphthalate	5.90E-03	4.64E-02	1.00E+00	1.00E+00	3.57E-03	2.81E-02
Di-n-octylphthalate	1.50E-02	4.13E-02	1.60E-04	4.90E+03	3.68E+01	1.01E+02
PCBs						
Arochlor 1254	2.30E-02	1.95E-02	1.00E-02	4.50E+00	5.19E-02	4.39E-02
Arochlor 1260	2.50E-02	1.96E-02	3.93E-03	5.50E+00	6.89E-02	5.40E-02
Pesticides						
4,4'-DDT	4.20E-03	2.07E-03	1.00E-02	1.00E-01	2.21E-04	1.09E-04

TABLE M.86
Calculated Surface Soil (0-1' bls) Exposure - Short-tailed Shrew
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Metals						
Aluminum	1.36E+04	9.38E+03	4.00E-03	1.50E-02	1.23E+02	8.50E+01
Chromium	1.89E+01	1.46E+01	7.50E-03	7.75E-01	7.36E+00	5.67E+00
Copper	4.11E+01	2.20E+01	4.00E-01	6.82E-01	1.44E+01	7.72E+00
Iron	4.11E+04	2.04E+04	4.00E-03	5.00E-02	1.09E+03	5.42E+02
Manganese	6.29E+02	4.41E+02	5.60E-01	1.00E+00	3.23E+02	2.26E+02
Mercury	2.90E-01	4.57E-02	9.00E-01	2.30E+01	3.35E+00	5.27E-01
Nickel	3.03E+01	2.18E+01	2.80E-01	1.00E+02	1.52E+03	1.09E+03
Selenium	1.30E+00	5.06E-01	6.20E+00	5.00E+00	3.42E+00	1.33E+00
Thallium	2.20E+00	8.05E-01	4.00E-03	2.33E-01	2.60E-01	9.52E-02
Vanadium	2.28E+01	1.69E+01	1.00E-02	1.00E+00	1.15E+01	8.47E+00
Zinc	8.00E+01	5.35E+01	1.40E+00	9.90E+00	3.99E+02	2.67E+02

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW

Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.00155 kg/day) (from Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.00751 kg/day) (Table M.46)
Is = incidental soil intake rate (0.000022 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.015 kg) (Table M.46)

TABLE M.87
Calculated Mixed Soil (0-4' bls) Exposure - Short-tailed Shrew
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Volatiles						
1,2,4-Trichlorobenzene	1.10E-02	6.61E-02	1.63E-01	1.00E+00	5.71E-03	3.43E-02
Acetone	2.60E-02	7.00E-03	5.33E+01	3.90E-01	1.48E-01	3.99E-02
PAHs						
2-Methylnaphthalene	5.50E-03	6.58E-02	1.63E-01	3.42E-01	1.04E-03	1.25E-02
Benzo(a)anthracene	2.60E-02	5.37E-02	1.51E-02	1.25E-01	1.71E-03	3.53E-03
Benzo(b)fluoranthene	3.40E-02	5.13E-02	1.00E-02	3.20E-01	5.53E-03	8.34E-03
Benzo(g,h,i)perylene	1.10E-02	6.29E-02	3.05E-03	2.40E-01	1.34E-03	7.67E-03
Benzo(k)fluoranthene	2.00E-02	5.19E-02	4.25E-03	2.53E-01	2.57E-03	6.67E-03
Chrysene	3.20E-02	4.82E-02	2.00E-02	1.75E-01	2.92E-03	4.39E-03
Dibenz(a,h)anthracene	4.80E-03	6.55E-02	8.16E-03	1.75E-01	4.32E-04	5.89E-03
Indeno(1,2,3-cd)pyrene	7.30E-03	6.09E-02	1.37E-03	4.19E-01	1.54E-03	1.29E-02
Semi-volatiles						
bis(2-Ethylhexyl)phthalate	3.60E-02	6.24E-02	1.00E-02	1.20E+01	2.16E-01	3.75E-01
Butylbenzylphthalate	5.90E-03	6.56E-02	1.00E+00	1.00E+00	3.57E-03	3.97E-02
Di-n-octylphthalate	1.50E-02	6.20E-02	1.60E-04	4.90E+03	3.68E+01	1.52E+02
PCBs						
Aroclor 1254	2.30E-02	1.91E-02	1.00E-02	4.50E+00	5.19E-02	4.31E-02
Arochlor 1260	2.50E-02	1.92E-02	3.93E-03	5.50E+00	6.89E-02	5.29E-02
Pesticides						
4,4'-DDT	4.20E-03	2.00E-03	1.00E-02	1.00E-01	2.21E-04	1.05E-04

TABLE M.87
Calculated Mixed Soil (0-4' bls) Exposure - Short-tailed Shrew
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Metals						
Aluminum	1.45E+04	9.01E+03	4.00E-03	1.50E-02	1.31E+02	8.16E+01
Chromium	2.08E+01	1.40E+01	7.50E-03	7.75E-01	8.10E+00	5.47E+00
Copper	4.11E+01	2.23E+01	4.00E-01	6.82E-01	1.44E+01	7.81E+00
Iron	4.11E+04	1.91E+04	4.00E-03	5.00E-02	1.09E+03	5.08E+02
Manganese	5.96E+02	4.14E+02	5.60E-01	1.00E+00	3.06E+02	2.13E+02
Mercury	2.90E-01	4.25E-02	9.00E-01	2.30E+01	3.35E+00	4.90E-01
Nickel	3.19E+01	2.20E+01	2.80E-01	1.00E+02	1.60E+03	1.10E+03
Selenium	1.30E+00	4.61E-01	6.20E+00	5.00E+00	3.42E+00	1.22E+00
Thallium	2.20E+00	7.30E-01	4.00E-03	2.33E-01	2.60E-01	8.63E-02
Vanadium	2.38E+01	1.64E+01	1.00E-02	1.00E+00	1.20E+01	8.23E+00
Zinc	8.00E+01	5.05E+01	1.40E+00	9.90E+00	3.99E+02	2.52E+02

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as
ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW
Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2)
(inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.00155 kg/day) (from Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.00751 kg/day) (Table M.46)
Is = incidental soil intake rate (0.000022 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.015 kg) (Table M.46)

TABLE M.88
Calculated Surface Soil (0-1' bls) Hazard Quotients - Short-tailed Shrew
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
1,2,4-Trichlorobenzene*	5.71E-03	2.44E-02	No data	No data	--	--	--	--
Acetone	1.48E-01	4.07E-02	1.00E+02	5.00E+02	1.5E-03	4.1E-04	3.0E-04	8.1E-05
PAHs								
2-Methylnaphthalene*	1.04E-03	8.83E-03	7.16E+00	7.16E+01	1.5E-04	1.2E-03	1.5E-05	1.2E-04
Benzo(a)anthracene*	1.71E-03	1.78E-03	1.00E+00	1.00E+01	1.7E-03	1.8E-03	1.7E-04	1.8E-04
Benzo(b)fluoranthene	5.53E-03	3.92E-03	1.00E+00	1.00E+01	5.5E-03	3.9E-03	5.5E-04	3.9E-04
Benzo(g,h,i)perylene*	1.34E-03	5.18E-03	1.00E+00	1.00E+01	1.3E-03	5.2E-03	1.3E-04	5.2E-04
Benzo(k)fluoranthene*	2.57E-03	3.44E-03	1.00E+00	1.00E+01	2.6E-03	3.4E-03	2.6E-04	3.4E-04
Chrysene	2.92E-03	2.00E-03	1.00E+00	1.00E+01	2.9E-03	2.0E-03	2.9E-04	2.0E-04
Dibenz(a,h)anthracene*	4.32E-04	4.15E-03	1.00E+00	1.00E+01	4.3E-04	4.2E-03	4.3E-05	4.2E-04
Indeno(1,2,3-cd)pyrene*	1.54E-03	8.38E-03	1.00E+00	1.00E+01	1.5E-03	8.4E-03	1.5E-04	8.4E-04
Semi-volatiles								
Bis(2-ethylhexyl)phthalate*	2.16E-01	2.53E-01	1.83E+01	1.83E+02	1.2E-02	1.4E-02	1.2E-03	1.4E-03
Butylbenzylphthalate*	3.57E-03	2.81E-02	1.59E+02	4.70E+02	2.2E-05	1.8E-04	7.6E-06	6.0E-05
Di-n-octylphthalate*	3.68E+01	1.01E+02	6.51E+01	6.51E+01	5.7E-01	1.6E+00	5.7E-01	1.6E+00
PCBs								
Aroclor 1254	5.19E-02	4.39E-02	6.80E-02	6.80E-01	7.6E-01	6.5E-01	7.6E-02	6.5E-02
Arochlor 1260	6.89E-02	5.40E-02	6.80E-02	6.80E-01	1.0E+00	7.9E-01	1.0E-01	7.9E-02
Pesticides								
4,4'-DDT	2.21E-04	1.09E-04	8.00E-01	4.00E+00	2.8E-04	1.4E-04	5.5E-05	2.7E-05
Metals								
Aluminum	1.23E+02	8.50E+01	1.93E+00	1.93E+01	**6.4E+01**	**4.4E+01**	**6.4E+00**	**4.4E+00**
Chromium	7.36E+00	5.67E+00	2.74E+03	2.74E+04	2.7E-03	2.1E-03	2.7E-04	2.1E-04
Copper	1.44E+01	7.72E+00	1.40E+01	2.80E+01	1.0E+00	5.5E-01	5.2E-01	2.8E-01
Iron	1.09E+03	5.42E+02	2.55E+01	2.55E+02	**4.3E+01**	**2.1E+01**	**4.3E+00**	**2.1E+00**
Manganese	3.23E+02	2.26E+02	8.80E+01	2.84E+02	**3.7E+00**	**2.6E+00**	**1.1E+00**	8.0E-01
Mercury	3.35E+00	5.27E-01	1.32E+01	1.32E+02	2.5E-01	4.0E-02	2.5E-02	4.0E-03
Nickel	1.52E+03	1.09E+03	4.00E+01	8.00E+01	**3.8E+01**	**2.7E+01**	**1.9E+01**	**1.4E+01**
Selenium	3.42E+00	1.33E+00	2.00E-01	3.30E-01	**1.7E+01**	**6.7E+00**	**1.0E+01**	**4.0E+00**
Thallium	2.60E-01	9.52E-02	7.40E-02	7.40E-01	**3.5E+00**	**1.3E+00**	3.5E-01	1.3E-01
Vanadium	1.15E+01	8.47E+00	2.10E-01	2.10E+00	**5.5E+01**	**4.0E+01**	**5.5E+00**	**4.0E+00**

TABLE M.88
Calculated Surface Soil (0-1' bls) Hazard Quotients - Short-tailed Shrew
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Zinc	3.99E+02	2.67E+02	1.60E+02	3.20E+02	**2.5E+00**	**1.7E+00**	**1.2E+00**	8.3E-01

1 Receptor exposure from Table M.86
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ > 1.
* Mean is greater than the maximum because of using 1/2 detection limit to calculate.

TABLE M.89
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Short-tailed Shrew
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
1,2,4-Trichlorobenzene*	5.71E-03	3.43E-02	No data	No data	--	--	--	--
Acetone	1.48E-01	3.99E-02	1.00E+02	5.00E+02	1.5E-03	4.0E-04	3.0E-04	8.0E-05
PAHs								
2-Methylnaphthalene*	1.04E-03	1.25E-02	7.16E+00	7.16E+01	1.5E-04	1.7E-03	1.5E-05	1.7E-04
Benzo(a)anthracene*	1.71E-03	3.53E-03	1.00E+00	1.00E+01	1.7E-03	3.5E-03	1.7E-04	3.5E-04
Benzo(b)fluoranthene*	5.53E-03	8.34E-03	1.00E+00	1.00E+01	5.5E-03	8.3E-03	5.5E-04	8.3E-04
Benzo(g,h,i)perylene*	1.34E-03	7.67E-03	1.00E+00	1.00E+01	1.3E-03	7.7E-03	1.3E-04	7.7E-04
Benzo(k)fluoranthene*	2.57E-03	6.67E-03	1.00E+00	1.00E+01	2.6E-03	6.7E-03	2.6E-04	6.7E-04
Chrysene*	2.92E-03	4.39E-03	1.00E+00	1.00E+01	2.9E-03	4.4E-03	2.9E-04	4.4E-04
Dibenz(a,h)anthracene*	4.32E-04	5.89E-03	1.00E+00	1.00E+01	4.3E-04	5.9E-03	4.3E-05	5.9E-04
Indeno(1,2,3-cd)pyrene*	1.54E-03	1.29E-02	1.00E+00	1.00E+01	1.5E-03	1.3E-02	1.5E-04	1.3E-03
Semi-volatiles								
bis(2-Ethylhexyl)phthalate*	2.16E-01	3.75E-01	1.83E+01	1.83E+02	1.2E-02	2.0E-02	1.2E-03	2.0E-03
Butylbenzylphthalate*	3.57E-03	3.97E-02	1.59E+02	4.70E+02	2.2E-05	2.5E-04	7.6E-06	8.5E-05
Di-n-octylphthalate*	3.68E+01	1.52E+02	6.51E+01	6.51E+01	5.7E-01	2.3E+00	5.7E-01	2.3E+00
PCBs								
Aroclor 1254	5.19E-02	4.31E-02	6.80E-02	6.80E-01	7.6E-01	6.3E-01	7.6E-02	6.3E-02
Arochlor 1260	6.89E-02	5.29E-02	6.80E-02	6.80E-01	1.0E+00	7.8E-01	1.0E-01	7.8E-02
Pesticides								
4,4'-DDT	2.21E-04	1.05E-04	8.00E-01	4.00E+00	2.8E-04	1.3E-04	5.5E-05	2.6E-05

TABLE M.89
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Short-tailed Shrew
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Metals								
Aluminum	1.31E+02	8.16E+01	1.93E+00	1.93E+01	**6.8E+01**	**4.2E+01**	**6.8E+00**	**4.2E+00**
Chromium	8.10E+00	5.47E+00	2.74E+03	2.74E+04	3.0E-03	2.0E-03	3.0E-04	2.0E-04
Copper	1.44E+01	7.81E+00	1.40E+01	2.80E+01	1.0E+00	5.6E-01	5.2E-01	2.8E-01
Iron	1.09E+03	5.08E+02	2.55E+01	2.55E+02	**4.3E+01**	**2.0E+01**	**4.3E+00**	**2.0E+00**
Manganese	3.06E+02	2.13E+02	8.80E+01	2.84E+02	**3.5E+00**	**2.4E+00**	**1.1E+00**	7.5E-01
Mercury	3.35E+00	4.90E-01	1.32E+01	1.32E+02	2.5E-01	3.7E-02	2.5E-02	3.7E-03
Nickel	1.60E+03	1.10E+03	4.00E+01	8.00E+01	**4.0E+01**	**2.8E+01**	**2.0E+01**	**1.4E+01**
Selenium	3.42E+00	1.22E+00	2.00E-01	3.30E-01	**1.7E+01**	**6.1E+00**	**1.0E+01**	**3.7E+00**
Thallium	2.60E-01	8.63E-02	7.40E-02	7.40E-01	**3.5E+00**	**1.2E+00**	3.5E-01	1.2E-01
Vanadium	1.20E+01	8.23E+00	2.10E-01	2.10E+00	**5.7E+01**	**3.9E+01**	**5.7E+00**	**3.9E+00**
Zinc	3.99E+02	2.52E+02	1.60E+02	3.20E+02	**2.5E+00**	**1.6E+00**	**1.2E+00**	7.9E-01

1 Receptor exposure from Table M.87
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value

BOLD : represents receptor HQ > 1.

* Mean is greater than the maximum because of using 1/2 detection limit to calculate.

TABLE M.90
Calculated Surface Soil (0-1' bls) Exposure - Red-tailed Hawk
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	Invertebrate BAF[2] (unitless)	Vertebrate BAF[2] (unitless)	Hawk Max Exposure[3] (mg/kg/day)	Hawk Mean Exposure[3] (mg/kg/day)
Volatiles							
1,2,4-Trichlorobenzene	1.10E-02	4.71E-02	1.63E-01	1.00E+00	1.00E+00	9.63E-07	4.12E-06
Acetone	2.60E-02	7.13E-03	5.33E+01	3.90E-01	3.90E-01	9.54E-06	2.62E-06
PAHs							
2-Methylnaphthalene	5.50E-03	4.66E-02	1.63E-01	3.42E-01	5.90E-01	1.08E-07	9.17E-07
Benzo(a)anthracene	2.60E-02	2.72E-02	1.51E-02	1.25E-01	5.90E-01	1.99E-07	2.08E-07
Benzo(b)fluoranthene	3.40E-02	2.41E-02	1.00E-02	3.20E-01	5.90E-01	5.81E-07	4.11E-07
Benzo(g,h,i)perylene	1.10E-02	4.25E-02	3.05E-03	2.40E-01	5.90E-01	1.44E-07	5.58E-07
Benzo(k)fluoranthene	2.00E-02	2.67E-02	4.25E-03	2.53E-01	5.90E-01	2.75E-07	3.68E-07
Chrysene	3.20E-02	2.19E-02	2.00E-02	1.75E-01	5.90E-01	3.24E-07	2.22E-07
Dibenz(a,h)anthracene	4.80E-03	4.62E-02	8.16E-03	1.75E-01	5.90E-01	4.80E-08	4.62E-07
Indeno(1,2,3-cd)pyrene	7.30E-03	3.96E-02	1.37E-03	4.19E-01	5.90E-01	1.59E-07	8.64E-07
Semi-volatiles							
Bis(2-ethylhexyl)phthalate	3.60E-02	4.21E-02	1.00E-02	1.20E+01	1.50E+00	5.35E-05	6.25E-05
Butylbenzylphthalate	5.90E-03	4.64E-02	1.00E+00	1.00E+00	1.00E+00	6.01E-07	4.72E-06
Di-n-octylphthalate	1.50E-02	4.13E-02	1.60E-04	4.90E+03	6.42E+02	3.89E+00	1.07E+01
PCBs							
Arochlor 1254	2.30E-02	1.95E-02	1.00E-02	4.50E+00	4.50E+00	3.86E-05	3.27E-05
Arochlor 1260	2.50E-02	1.96E-02	3.93E-03	5.50E+00	7.00E+00	7.97E-05	6.25E-05
Pesticides							
4,4'-DDT	4.20E-03	2.07E-03	1.00E-02	1.00E-01	1.00E-01	4.54E-09	2.24E-09
Metals							
Aluminum	1.36E+04	9.38E+03	4.00E-03	1.50E-02	1.50E-02	7.47E-04	5.16E-04
Chromium	1.89E+01	1.46E+01	7.50E-03	7.75E-01	7.75E-01	9.71E-04	7.47E-04
Copper	4.11E+01	2.20E+01	4.00E-01	6.82E-01	6.82E-01	1.68E-03	8.99E-04
Iron	4.11E+04	2.04E+04	4.00E-03	5.00E-02	5.00E-02	1.34E-02	6.67E-03
Manganese	6.29E+02	4.41E+02	5.60E-01	1.00E+00	1.00E+00	5.45E-02	3.82E-02
Mercury	2.90E-01	4.57E-02	9.00E-01	2.30E+01	2.30E+01	1.27E-02	2.00E-03
Nickel	3.03E+01	2.18E+01	2.80E-01	1.00E+02	1.00E+02	2.50E+01	1.79E+01
Selenium	1.30E+00	5.06E-01	6.20E+00	5.00E+00	5.00E+00	2.83E-03	1.10E-03
Thallium	2.20E+00	8.05E-01	4.00E-03	2.33E-01	2.33E-01	1.11E-05	4.06E-06

TABLE M.90
Calculated Surface Soil (0-1' bls) Exposure - Red-tailed Hawk
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	Invertebrate BAF[2] (unitless)	Vertebrate BAF[2] (unitless)	Hawk Max Exposure[3] (mg/kg/day)	Hawk Mean Exposure[3] (mg/kg/day)
Vanadium	2.28E+01	1.69E+01	1.00E-02	1.00E+00	1.00E+00	1.93E-03	1.43E-03
Zinc	8.00E+01	5.35E+01	1.40E+00	9.90E+00	9.90E+00	6.52E-01	4.35E-01

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

$ED = Conc_{shrew} * BAF_{vert} * I_{a\ hawk} * SFF / BW_{hawk}$

$ED = [(Cs * SP_v * CF * Ip_{shrew}) + (Cs * BAF_{inv} * Ia_{shrew}) + (Cs * Is_{shrew})] * BAF_{vert} * Ia_{hawk} * SFF / (BW_{hawk})$

Where, ED = exposure dose

Cs = maximum or mean concentration in soil (mg/kg)

$Conc_{shrew}$ = concentration in shrew (mg/kg)

CF = plant dry-to-wet-weight conversion factor (0.2) for inorganics only

SP_v = soil-to-plant uptake factor for vegetative matter

Ip_{shrew} = plant-matter intake rate for the shrew = 0.000155 kg/day (Table M.46)

BAF_{inv} = invertebrate bioaccumulation factor (unitless) (Table M.45)

Ia_{shrew} = animal-matter intake rate for the shrew = 0.000751 kg/day (Table M.46)

Is_{shrew} = incidental soil intake rate for the shrew = 0.000022 kg/day (Table M.46)

BAF_{vert} = vertebrate bioaccumulation factor (unitless) (Table M.45)

Ia_{hawk} = animal-matter intake rate for the hawk = 0.136 kg/day (Table M.46)

SFF = site foraging factor = 1 (default)

BW = body weight = 1.24 kg (Table M.46)

TABLE M.91
Calculated Mixed Soil (0-4' bls) Exposure - Red-tailed Hawk
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	Invertebrate BAF[2] (unitless)	Vertebrate BAF[2] (unitless)	Hawk Max Exposure[3] (mg/kg/day)	Hawk Mean Exposure[3] (mg/kg/day)
Volatiles							
1,2,4-Trichlorobenzene	1.10E-02	6.61E-02	1.63E-01	3.90E-01	1.00E+00	4.10E-07	2.47E-06
Acetone	2.60E-02	7.00E-03	5.33E+01	3.90E-01	3.90E-01	9.54E-06	2.57E-06
PAHs							
2-Methylnaphthalene	5.50E-03	6.58E-02	1.63E-01	3.42E-01	5.90E-01	1.08E-07	1.29E-06
Benzo(a)anthracene	2.60E-02	5.37E-02	1.51E-02	1.25E-01	5.90E-01	1.99E-07	4.11E-07
Benzo(b)fluoranthene	3.40E-02	5.13E-02	1.00E-02	3.20E-01	5.90E-01	5.81E-07	8.76E-07
Benzo(g,h,i)perylene	1.10E-02	6.29E-02	3.05E-03	2.40E-01	5.90E-01	1.44E-07	8.25E-07
Benzo(k)fluoranthene	2.00E-02	5.19E-02	4.25E-03	2.53E-01	5.90E-01	2.75E-07	7.14E-07
Chrysene	3.20E-02	4.82E-02	2.00E-02	1.75E-01	5.90E-01	3.24E-07	4.88E-07
Dibenz(a,h)anthracene	4.80E-03	6.55E-02	8.16E-03	1.75E-01	5.90E-01	4.80E-08	6.56E-07
Indeno(1,2,3-cd)pyrene	7.30E-03	6.09E-02	1.37E-03	4.19E-01	5.90E-01	1.59E-07	1.33E-06
Semi-volatiles							
bis(2-Ethylhexyl)phthalate	3.60E-02	6.24E-02	1.00E-02	1.20E+01	1.50E+00	5.35E-05	9.27E-05
Butylbenzylphthalate	5.90E-03	6.56E-02	1.00E+00	1.00E+00	1.00E+00	6.01E-07	6.68E-06
Di-n-octylphthalate	1.50E-02	6.20E-02	1.60E-04	4.90E+03	6.42E+02	3.89E+00	1.61E+01
PCBs							
Aroclor 1254	2.30E-02	1.91E-02	1.00E-02	4.50E+00	4.50E+00	3.86E-05	3.21E-05
Arochlor 1260	2.50E-02	1.92E-02	3.93E-03	3.90E-01	7.00E+00	6.06E-06	4.65E-06
Pesticides							
4,4'-DDT	4.20E-03	2.00E-03	1.00E-02	1.00E-01	1.00E-01	4.54E-09	2.16E-09
Metals							
Aluminum	1.45E+04	9.01E+03	4.00E-03	1.50E-02	1.50E-02	7.96E-04	4.95E-04
Chromium	2.08E+01	1.40E+01	7.50E-03	7.75E-01	7.75E-01	1.07E-03	7.21E-04
Copper	4.11E+01	2.23E+01	4.00E-01	6.82E-01	6.82E-01	1.68E-03	9.10E-04
Iron	4.11E+04	1.91E+04	4.00E-03	5.00E-02	5.00E-02	1.34E-02	6.25E-03
Manganese	5.96E+02	4.14E+02	5.60E-01	1.00E+00	1.00E+00	5.17E-02	3.59E-02
Mercury	2.90E-01	4.25E-02	9.00E-01	2.30E+01	2.30E+01	1.27E-02	1.86E-03
Nickel	3.19E+01	2.20E+01	2.80E-01	1.00E+02	1.00E+02	2.63E+01	1.81E+01
Selenium	1.30E+00	4.61E-01	6.20E+00	5.00E+00	5.00E+00	2.83E-03	1.00E-03
Thallium	2.20E+00	7.30E-01	4.00E-03	2.33E-01	2.33E-01	1.11E-05	3.68E-06
Vanadium	2.38E+01	1.64E+01	1.00E-02	1.00E+00	1.00E+00	2.02E-03	1.39E-03

TABLE M.91
Calculated Mixed Soil (0-4' bls) Exposure - Red-tailed Hawk
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	Invertebrate BAF[2] (unitless)	Vertebrate BAF[2] (unitless)	Hawk Max Exposure[3] (mg/kg/day)	Hawk Mean Exposure[3] (mg/kg/day)
Zinc	8.00E+01	5.05E+01	1.40E+00	9.90E+00	9.90E+00	6.52E-01	4.11E-01

1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

$ED = Conc_{shrew} * BAF_{vert} * I_{a\,hawk} * SFF / BW_{hawk}$

$ED = [(Cs * SP_v * CF * Ip_{shrew}) + (Cs * BAF_{inv} * Ia_{shrew}) + (Cs * Is_{shrew})] * BAF_{vert} * Ia_{hawk} * SFF / (BW_{hawk})$

Where, ED = exposure dose

Cs = maximum or mean concentration in soil (mg/kg)
$Conc_{shrew}$ = concentration in shrew (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) for inorganics only
SP_v = soil-to-plant uptake factor for vegetative matter
Ip_{shrew} = plant-matter intake rate for the shrew = 0.000155 kg/day (Table M.46)
BAF_{inv} = invertebrate bioaccumulation factor (unitless) (Table M.45)
Ia_{shrew} = animal-matter intake rate for the shrew = 0.000751 kg/day (Table M.46)
Is_{shrew} = incidental soil intake rate for the shrew = 0.000022 kg/day (Table M.46)
BAF_{vert} = vertebrate bioaccumulation factor (unitless) (Table M.45)
Ia_{hawk} = animal-matter intake rate for the hawk = 0.136 kg/day (Table M.46)
SFF = site foraging factor = 1 (default)
BW = body weight = 1.24 kg (Table M.46)

TABLE M.92
Calculated Surface Soil (0-1' bls) Hazard Quotients - Red-tailed hawk
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Constituent	Hawk Max Exposure[1] (mg/kg/day)	Hawk Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
1,2,4-Trichlorobenzene	9.63E-07	4.12E-06	No data	No data	--	--	--	--
Acetone	9.54E-06	2.62E-06	4.51E+01	4.51E+02	2.1E-07	5.8E-08	2.1E-08	5.8E-09
PAHs								
2-Methylnaphthalene	1.08E-07	9.17E-07	2.85E+01	2.85E+02	3.8E-09	3.2E-08	3.8E-10	3.2E-09
Benzo(a)anthracene	1.99E-07	2.08E-07	2.85E+01	2.85E+02	7.0E-09	7.3E-09	7.0E-10	7.3E-10
Benzo(b)fluoranthene	5.81E-07	4.11E-07	2.85E+01	2.85E+02	2.0E-08	1.4E-08	2.0E-09	1.4E-09
Benzo(g,h,i)perylene	1.44E-07	5.58E-07	2.85E+01	2.85E+02	5.1E-09	2.0E-08	5.1E-10	2.0E-09
Benzo(k)fluoranthene	2.75E-07	3.68E-07	2.85E+01	2.85E+02	9.7E-09	1.3E-08	9.7E-10	1.3E-09
Chrysene	3.24E-07	2.22E-07	2.85E+01	2.85E+02	1.1E-08	7.8E-09	1.1E-09	7.8E-10
Dibenz(a,h)anthracene	4.80E-08	4.62E-07	2.85E+01	2.85E+02	1.7E-09	1.6E-08	1.7E-10	1.6E-09
Indeno(1,2,3-cd)pyrene	1.59E-07	8.64E-07	2.85E+01	2.85E+02	5.6E-09	3.0E-08	5.6E-10	3.0E-09
Semi-volatiles								
Bis(2-ethylhexyl)phthalate	5.35E-05	6.25E-05	1.11E+00	1.11E+01	4.8E-05	5.6E-05	4.8E-06	5.6E-06
Butylbenzylphthalate	6.01E-07	4.72E-06	No data	No data	--	--	--	--
Di-n-octylphthalate	3.89E+00	1.07E+01	No data	No data	--	--	--	--
PCBs								
Aroclor 1254	3.86E-05	3.27E-05	1.00E+00	1.00E+01	3.9E-05	3.3E-05	3.9E-06	3.3E-06
Arochlor 1260	7.97E-05	6.25E-05	1.00E+00	1.00E+01	8.0E-05	6.2E-05	8.0E-06	6.2E-06
Pesticides								
4,4'-DDT	4.54E-09	2.24E-09	2.20E-02	2.20E-01	2.1E-07	1.0E-07	2.1E-08	1.0E-08
Metals								
Aluminum	7.47E-04	5.16E-04	1.10E+02	1.10E+03	6.8E-06	4.7E-06	6.8E-07	4.7E-07
Chromium	9.71E-04	7.47E-04	1.00E+00	5.00E+00	9.7E-04	7.5E-04	1.9E-04	1.5E-04
Copper	1.68E-03	8.99E-04	4.70E+01	4.70E+02	3.6E-05	1.9E-05	3.6E-06	1.9E-06
Iron	1.34E-02	6.67E-03	No data	No data	--	--	--	--
Manganese	5.45E-02	3.82E-02	9.77E+02	9.77E+03	5.6E-05	3.9E-05	5.6E-06	3.9E-06
Mercury	1.27E-02	2.00E-03	2.86E+00	2.86E+01	4.4E-03	7.0E-04	4.4E-04	7.0E-05
Nickel	2.50E+01	1.79E+01	7.74E+01	1.07E+02	3.2E-01	2.3E-01	2.3E-01	1.7E-01
Selenium	2.83E-03	1.10E-03	1.71E+00	3.43E+00	1.7E-03	6.4E-04	8.2E-04	3.2E-04
Thallium	1.11E-05	4.06E-06	9.50E-02	9.50E-02	1.2E-04	4.3E-05	1.2E-04	4.3E-05
Vanadium	1.93E-03	1.43E-03	1.14E+01	1.14E+02	1.7E-04	1.3E-04	1.7E-05	1.3E-05
Zinc	6.52E-01	4.35E-01	1.45E+01	1.31E+02	4.5E-02	3.0E-02	5.0E-03	3.3E-03

1 Receptor exposure from Table M 90
2 NOAEL toxicity reference value from Table M 40
3 LOAEL toxicity reference value from Table M 41
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value

BOLD	represents receptor HQ > 1

TABLE M.93
Calculated Mixed Soil (0-4 ft) Hazard Quotients - Red-tailed hawk
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Constituent	Hawk Max Exposure[1] (mg/kg/day)	Hawk Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
1,2,4-Trichlorobenzene	4.10E-07	2.47E-06	No data	No data	--	--	--	--
Acetone	9.54E-06	2.57E-06	4.51E+01	4.51E+02	2.1E-07	5.7E-08	2.1E-08	5.7E-09
PAHs								
2-Methylnaphthalene	1.08E-07	1.29E-06	2.85E+01	2.85E+02	3.8E-09	4.5E-08	3.8E-10	4.5E-09
Benzo(a)anthracene	1.99E-07	4.11E-07	2.85E+01	2.85E+02	7.0E-09	1.4E-08	7.0E-10	1.4E-09
Benzo(b)fluoranthene	5.81E-07	8.76E-07	2.85E+01	2.85E+02	2.0E-08	3.1E-08	2.0E-09	3.1E-09
Benzo(g,h,i)perylene	1.44E-07	8.25E-07	2.85E+01	2.85E+02	5.1E-09	2.9E-08	5.1E-10	2.9E-09
Benzo(k)fluoranthene	2.75E-07	7.14E-07	2.85E+01	2.85E+02	9.7E-09	2.5E-08	9.7E-10	2.5E-09
Chrysene	3.24E-07	4.88E-07	2.85E+01	2.85E+02	1.1E-08	1.7E-08	1.1E-09	1.7E-09
Dibenz(a,h)anthracene	4.80E-08	6.56E-07	2.85E+01	2.85E+02	1.7E-09	2.3E-08	1.7E-10	2.3E-09
Indeno(1,2,3-cd)pyrene	1.59E-07	1.33E-06	2.85E+01	2.85E+02	5.6E-09	4.7E-08	5.6E-10	4.7E-09
Semi-volatiles								
bis(2-Ethylhexyl)phthalate	5.35E-05	9.27E-05	1.11E+00	1.11E+01	4.8E-05	8.4E-05	4.8E-06	8.4E-06
Butylbenzylphthalate	6.01E-07	6.68E-06	No data	No data	--	--	--	--
Di-n-octylphthalate	3.89E+00	1.61E+01	No data	No data	--	--	--	--
PCBs								
Aroclor 1254	3.86E-05	3.21E-05	1.00E+00	1.00E+01	3.9E-05	3.2E-05	3.9E-06	3.2E-06
Arochlor 1260	6.06E-06	4.65E-06	1.00E+00	1.00E+01	6.1E-06	4.7E-06	6.1E-07	4.7E-07
Pesticides								
4,4'-DDT	4.54E-09	2.16E-09	2.20E-02	2.20E-01	2.1E-07	9.8E-08	2.1E-08	9.8E-09
Metals								
Aluminum	7.96E-04	4.95E-04	1.10E+02	1.10E+03	7.3E-06	4.5E-06	7.2E-07	4.5E-07
Chromium	1.07E-03	7.21E-04	1.00E+00	5.00E+00	1.1E-03	7.2E-04	2.1E-04	1.4E-04
Copper	1.68E-03	9.10E-04	4.70E+01	4.70E+02	3.6E-05	1.9E-05	3.6E-06	1.9E-06
Iron	1.34E-02	6.25E-03	No data	No data	--	--	--	--
Manganese	5.17E-02	3.59E-02	9.77E+02	9.77E+03	5.3E-05	3.7E-05	5.3E-06	3.7E-06
Mercury	1.27E-02	1.86E-03	2.86E+00	2.86E+01	4.4E-03	6.5E-04	4.4E-04	6.5E-05
Nickel	2.63E+01	1.81E+01	7.74E+01	1.07E+02	3.4E-01	2.3E-01	2.5E-01	1.7E-01
Selenium	2.83E-03	1.00E-03	1.71E+00	3.43E+00	1.7E-03	5.9E-04	8.2E-04	2.9E-04
Thallium	1.11E-05	3.68E-06	9.50E-02	9.50E-02	1.2E-04	3.9E-05	1.2E-04	3.9E-05
Vanadium	2.02E-03	1.39E-03	1.14E+01	1.14E+02	1.8E-04	1.2E-04	1.8E-05	1.2E-05
Zinc	6.52E-01	4.11E-01	1.45E+01	1.31E+02	4.5E-02	2.8E-02	5.0E-03	3.1E-03

1 Receptor exposure from Table M.91

2 NOAEL toxicity reference value from Table M.40

3 LOAEL toxicity reference value from Table M.41

4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value

BOLD : represents receptor HQ > 1.

TABLE M.94
Calculated Surface Soil (0-1 ft) Receptor Exposure
Group G - Former Dry Waste Disposal Pit -SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Mourning Dove Max Exposure[3] (mg/kg/day)	Mourning Dove Mean Exposure[3] (mg/kg/day)
Volatiles						
1,2,4-Trichlorobenzene	1.10E-02	4.71E-02	1.63E-01	1.00E+00	2.98E-04	1.28E-03
Acetone	2.60E-02	7.13E-03	5.33E+01	1.00E+00	8.21E-02	2.25E-02
PAHs						
2-Methylnaphthalene	5.50E-03	4.66E-02	1.63E-01	3.42E-01	1.15E-04	9.71E-04
Benzo(a)anthracene	2.60E-02	2.72E-02	1.51E-02	1.25E-01	2.61E-04	2.73E-04
Benzo(b)fluoranthene	3.40E-02	2.41E-02	1.00E-02	3.19E-01	3.94E-04	2.79E-04
Benzo(g,h,i)perylene	1.10E-02	4.25E-02	3.05E-03	2.44E-01	1.15E-04	4.45E-04
Benzo(k)fluoranthene	2.00E-02	2.67E-02	4.25E-03	2.53E-01	2.13E-04	2.84E-04
Chrysene	3.20E-02	2.19E-02	2.00E-02	1.75E-01	3.46E-04	2.37E-04
Dibenz(a,h)anthracene	4.80E-03	4.62E-02	8.16E-03	1.75E-01	4.86E-05	4.67E-04
Indeno(1,2,3-cd)pyrene	7.30E-03	3.96E-02	1.37E-03	4.19E-01	8.80E-05	4.78E-04
Semi-volatiles						
Bis(2-ethylhexyl)phthalate	3.60E-02	4.21E-02	1.00E-02	1.20E+01	4.44E-03	5.18E-03
Butylbenzylphthalate	5.90E-03	4.64E-02	1.00E+00	1.20E+01	1.07E-03	8.42E-03
Di-n-octylphthalate	1.50E-02	4.13E-02	1.60E-04	1.20E+01	1.84E-03	5.06E-03
PCBs						
Arochlor 1254	2.30E-02	1.95E-02	1.00E-02	4.50E+00	1.19E-03	1.00E-03
Arochlor 1260	2.50E-02	1.96E-02	3.93E-03	5.50E+00	1.52E-03	1.19E-03
Pesticides						
4,4'-DDT	4.20E-03	2.07E-03	1.00E-02	2.50E-01	4.59E-05	2.27E-05
Metals						
Aluminum	1.36E+04	9.38E+03	4.00E-03	1.50E-02	1.11E+02	7.65E+01
Chromium	1.89E+01	1.46E+01	7.50E-03	1.00E+00	3.33E-01	2.56E-01
Copper	4.11E+01	2.20E+01	4.00E-01	6.82E-01	7.89E-01	4.22E-01
Iron	4.11E+04	2.04E+04	4.00E-03	5.00E-02	3.49E+02	1.73E+02
Manganese	6.29E+02	4.41E+02	5.60E-01	1.00E+00	1.52E+01	1.06E+01
Mercury	2.90E-01	4.57E-02	9.00E-01	2.30E+01	6.91E-02	1.09E-02
Nickel	3.03E+01	2.18E+01	2.80E-01	1.00E+02	2.93E+01	2.11E+01
Selenium	1.30E+00	5.06E-01	6.20E+00	4.70E-01	1.11E-01	4.32E-02
Thallium	2.20E+00	8.05E-01	4.00E-03	2.33E-01	2.25E-02	8.24E-03
Vanadium	2.28E+01	1.69E+01	1.00E-02	1.00E+00	4.02E-01	2.97E-01
Zinc	8.00E+01	5.35E+01	1.40E+00	2.90E-01	2.18E+00	1.46E+00

TABLE M.94
Calculated Surface Soil (0-1 ft) Receptor Exposure
Group G - Former Dry Waste Disposal Pit -SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP(1) (unitless)	BAF(2) (unitless)	Mourning Dove Max Exposure(3) (mg/kg/day)	Mourning Dove Mean Exposure(3) (mg/kg/day)

(1) SP: soil-to-plant uptake factor.
(2) BAF: bioaccumulation factor.
(3) Exposure calculated as
ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW
Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.00925 kg/day) (Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.0015 kg/day) (Table M.46)
Is = incidental soil intake rate (0.00125 kg/day) (Table M.46)
SFF = site foraging factor (1) (default)
BW = body weight (0.157 kg) (Table M.46)

TABLE M.95
Calculated Subsurface Soil (0-4 ft) Receptor Exposure
Group G - Former Dry Waste Disposal Pit -SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Mourning Dove Max Exposure[3] (mg/kg/day)	Mourning Dove Mean Exposure[3] (mg/kg/day)
Volatiles						
1,2,4-Trichlorobenzene	1.10E-02	6.61E-02	1.63E-01	1.00E+00	2.98E-04	1.79E-03
Acetone	2.60E-02	7.00E-03	5.33E+01	1.00E+00	8.21E-02	2.21E-02
PAHs						
2-Methylnaphthalene	5.50E-03	6.58E-02	1.63E-01	3.42E-01	1.15E-04	1.37E-03
Benzo(a)anthracene	2.60E-02	5.37E-02	1.51E-02	1.25E-01	2.61E-04	5.39E-04
Benzo(b)fluoranthene	3.40E-02	5.13E-02	1.00E-02	3.19E-01	3.94E-04	5.95E-04
Benzo(g,h,i)perylene	1.10E-02	6.29E-02	3.05E-03	2.44E-01	1.15E-04	6.59E-04
Benzo(k)fluoranthene	2.00E-02	5.19E-02	4.25E-03	2.53E-01	2.13E-04	5.52E-04
Chrysene	3.20E-02	4.82E-02	2.00E-02	1.75E-01	3.46E-04	5.21E-04
Dibenz(a,h)anthracene	4.80E-03	6.55E-02	8.16E-03	1.75E-01	4.86E-05	6.63E-04
Indeno(1,2,3-cd)pyrene	7.30E-03	6.09E-02	1.37E-03	4.19E-01	8.80E-05	7.34E-04
Semi-volatiles						
Bis(2-ethylhexyl)phthalate	3.60E-02	6.24E-02	1.00E-02	1.20E+01	4.44E-03	7.69E-03
Butylbenzylphthalate	5.90E-03	6.56E-02	1.00E+00	1.20E+01	1.07E-03	1.19E-02
Di-n-octylphthalate	1.50E-02	6.20E-02	1.60E-04	1.20E+01	1.84E-03	7.60E-03
PCBs						
Arochlor 1254	2.30E-02	1.91E-02	1.00E-02	4.50E+00	1.19E-03	9.85E-04
Arochlor 1260	2.50E-02	1.92E-02	3.93E-03	5.50E+00	1.52E-03	1.17E-03
Pesticides						
4,4'-DDT	4.20E-03	2.00E-03	1.00E-02	2.50E-01	4.59E-05	2.19E-05
Metals						
Aluminum	1.45E+04	9.01E+03	4.00E-03	1.50E-02	1.18E+02	7.35E+01
Chromium	2.08E+01	1.40E+01	7.50E-03	1.00E+00	3.66E-01	2.46E-01
Copper	4.11E+01	2.23E+01	4.00E-01	6.82E-01	7.89E-01	4.28E-01
Iron	4.11E+04	1.91E+04	4.00E-03	5.00E-02	3.49E+02	1.62E+02
Manganese	5.96E+02	4.14E+02	5.60E-01	1.00E+00	1.44E+01	9.98E+00
Mercury	2.90E-01	4.25E-02	9.00E-01	2.30E+01	6.91E-02	1.01E-02
Nickel	3.19E+01	2.20E+01	2.80E-01	1.00E+02	3.08E+01	2.13E+01
Selenium	1.30E+00	4.61E-01	6.20E+00	4.70E-01	1.11E-01	3.94E-02
Thallium	2.20E+00	7.31E-01	4.00E-03	2.33E-01	2.25E-02	7.48E-03
Vanadium	2.38E+01	1.64E+01	1.00E-02	1.00E+00	4.20E-01	2.89E-01
Zinc	8.00E+01	5.05E+01	1.40E+00	2.90E-01	2.18E+00	1.38E+00

TABLE M.95
Calculated Subsurface Soil (0-4 ft) Receptor Exposure
Group G - Former Dry Waste Disposal Pit -SEAD-12
Seneca Army Depot, NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP(1) (unitless)	BAF(2) (unitless)	Mourning Dove Max Exposure(3) (mg/kg/day)	Mourning Dove Mean Exposure(3) (mg/kg/day)

(1) SP: soil-to-plant uptake factor.
(2) BAF: bioaccumulation factor.
(3) Exposure calculated as
ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW
Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2) (inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.00925 kg/day) (Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.0015 kg/day) (Table M.46)
Is = incidental soil intake rate (0.00125 kg/day) (Table M.46)
SFF = site foraging factor (1) (default)
BW = body weight (0.157 kg) (Table M.46)

TABLE M.96
Calculated Surface Soil (0-1 ft) Hazard Quotients - Mourning Dove
Group G - Former Dry Waste Disposal Pit -SEAD-12
Seneca Army Depot, NY

Constituent	Mourning Dove Max Exposure[1] (mg/kg/day)	Mourning Dove Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
1,2,4-Trichlorobenzene	2.98E-04	1.28E-03	no data	no data	--	--	--	--
Acetone	8.21E-02	2.25E-02	4.51E+01	4.51E+02	1.8E-03	5.0E-04	1.8E-04	5.0E-05
PAHs								
2-Methylnaphthalene	1.15E-04	9.71E-04	2.85E+01	2.85E+02	4.0E-06	3.4E-05	4.0E-07	3.4E-06
Benzo(a)anthracene	2.61E-04	2.73E-04	2.85E+01	2.85E+02	9.2E-06	9.6E-06	9.2E-07	9.6E-07
Benzo(b)fluoranthene	3.94E-04	2.79E-04	2.85E+01	2.85E+02	1.4E-05	9.8E-06	1.4E-06	9.8E-07
Benzo(g,h,i)perylene	1.15E-04	4.45E-04	2.85E+01	2.85E+02	4.0E-06	1.6E-05	4.0E-07	1.6E-06
Benzo(k)fluoranthene	2.13E-04	2.84E-04	2.85E+01	2.85E+02	7.5E-06	1.0E-05	7.5E-07	1.0E-06
Chrysene	3.46E-04	2.37E-04	2.85E+01	2.85E+02	1.2E-05	8.3E-06	1.2E-06	8.3E-07
Dibenz(a,h)anthracene	4.86E-05	4.67E-04	2.85E+01	2.85E+02	1.7E-06	1.6E-05	1.7E-07	1.6E-06
Indeno(1,2,3-cd)pyrene	8.80E-05	4.78E-04	2.85E+01	2.85E+02	3.1E-06	1.7E-05	3.1E-07	1.7E-06
Semi-volatiles								
Bis(2-ethylhexyl)phthalate	4.44E-03	5.18E-03	1.11E+00	1.11E+01	4.0E-03	4.7E-03	4.0E-04	4.7E-04
Butylbenzylphthalate	1.07E-03	8.42E-03	no data	no data	--	--	--	--
Di-n-octylphthalate	1.84E-03	5.06E-03	1.11E+00	1.11E+00	1.7E-03	4.6E-03	1.7E-03	4.6E-03
PCBs								
Arochlor 1254	1.19E-03	1.00E-03	1.80E-01	1.80E+00	6.6E-03	5.6E-03	6.6E-04	5.6E-04
Arochlor 1260	1.52E-03	1.19E-03	7.04E-02	7.04E-01	2.2E-02	1.7E-02	2.2E-03	1.7E-03
Pesticides								
4,4'-DDT	4.59E-05	2.27E-05	2.80E-03	2.80E-02	1.6E-02	8.1E-03	1.6E-03	8.1E-04
Metals								
Aluminum	1.11E+02	7.65E+01	1.10E+02	1.10E+03	1.0E+00	7.0E-01	1.0E-01	7.0E-02
Chromium	3.33E-01	2.56E-01	1.00E+00	5.00E+00	3.3E-01	2.6E-01	6.7E-02	5.1E-02
Copper	7.89E-01	4.22E-01	4.70E+01	4.70E+02	1.7E-02	9.0E-03	1.7E-03	9.0E-04
Iron	3.49E+02	1.73E+02	no data	No data	--	--	--	--
Manganese	1.52E+01	1.06E+01	9.77E+02	9.77E+03	1.6E-02	1.1E-02	1.6E-03	1.1E-03
Mercury	6.91E-02	1.09E-02	3.25E+00	3.25E+01	2.1E-02	3.3E-03	2.1E-03	3.3E-04
Nickel	2.93E+01	2.11E+01	7.74E+01	1.07E+02	3.8E-01	2.7E-01	2.7E-01	2.0E-01
Selenium	1.11E-01	4.32E-02	4.00E-01	8.00E-01	2.8E-01	1.1E-01	1.4E-01	5.4E-02

TABLE M.96
Calculated Surface Soil (0-1 ft) Hazard Quotients - Mourning Dove
Group G - Former Dry Waste Disposal Pit -SEAD-12
Seneca Army Depot, NY

Constituent	Mourning Dove Max Exposure[1] (mg/kg/day)	Mourning Dove Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Thallium	2.25E-02	8.24E-03	9.50E-02	9.50E-02	2.4E-01	8.7E-02	2.4E-01	8.7E-02
Vanadium	4.02E-01	2.97E-01	1.14E+01	1.14E+02	3.5E-02	2.6E-02	3.5E-03	2.6E-03
Zinc	2.18E+00	1.46E+00	1.45E+01	1.31E+02	1.5E-01	1.0E-01	1.7E-02	1.1E-02

(1) Receptor exposure from Table M.94
(2) NOAEL toxicity reference value from Table M.40
(3) LOAEL toxicity reference value from Table M.41
(4) Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ >= 1.

TABLE M.97
Calculated Subsurface Soil (0-4 ft) Hazard Quotients - Mourning Dove
Group G - Former Dry Waste Disposal Pit -SEAD-12
Seneca Army Depot, NY

Constituent	Mourning Dove Max Exposure[1] (mg/kg/day)	Mourning Dove Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
1,2,4-Trichlorobenzene	2.98E-04	1.79E-03	no data	no data	--	--	--	--
Acetone	8.21E-02	2.21E-02	4.51E+01	4.51E+02	1.8E-03	4.9E-04	1.8E-04	4.9E-05
PAHs								
2-Methylnaphthalene	1.15E-04	1.37E-03	2.85E+01	2.85E+02	4.0E-06	4.8E-05	4.0E-07	4.8E-06
Benzo(a)anthracene	2.61E-04	5.39E-04	2.85E+01	2.85E+02	9.2E-06	1.9E-05	9.2E-07	1.9E-06
Benzo(b)fluoranthene	3.94E-04	5.95E-04	2.85E+01	2.85E+02	1.4E-05	2.1E-05	1.4E-06	2.1E-06
Benzo(g,h,i)perylene	1.15E-04	6.59E-04	2.85E+01	2.85E+02	4.0E-06	2.3E-05	4.0E-07	2.3E-06
Benzo(k)fluoranthene	2.13E-04	5.52E-04	2.85E+01	2.85E+02	7.5E-06	1.9E-05	7.5E-07	1.9E-06
Chrysene	3.46E-04	5.21E-04	2.85E+01	2.85E+02	1.2E-05	1.8E-05	1.2E-06	1.8E-06
Dibenz(a,h)anthracene	4.86E-05	6.63E-04	2.85E+01	2.85E+02	1.7E-06	2.3E-05	1.7E-07	2.3E-06
Indeno(1,2,3-cd)pyrene	8.80E-05	7.34E-04	2.85E+01	2.85E+02	3.1E-06	2.6E-05	3.1E-07	2.6E-06
Semi-volatiles								
Bis(2-ethylhexyl)phthalate	4.44E-03	7.69E-03	1.11E+00	1.11E+01	4.0E-03	6.9E-03	4.0E-04	6.9E-04
Butylbenzylphthalate	1.07E-03	1.19E-02	no data	no data	--	--	--	--
Di-n-octylphthalate	1.84E-03	7.60E-03	1.11E+00	1.11E+00	1.7E-03	6.8E-03	1.7E-03	6.8E-03
PCBs								
Arochlor 1254	1.19E-03	9.85E-04	1.80E-01	1.80E+00	6.6E-03	5.5E-03	6.6E-04	5.5E-04
Arochlor 1260	1.52E-03	1.17E-03	7.04E-02	7.04E-01	2.2E-02	1.7E-02	2.2E-03	1.7E-03
Pesticides								
4,4'-DDT	4.59E-05	2.19E-05	2.80E-03	2.80E-02	1.6E-02	7.8E-03	1.6E-03	7.8E-04

TABLE M.97
Calculated Subsurface Soil (0-4 ft) Hazard Quotients - Mourning Dove
Group G - Former Dry Waste Disposal Pit -SEAD-12
Seneca Army Depot, NY

Constituent	Mourning Dove Max Exposure[1] (mg/kg/day)	Mourning Dove Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Metals								
Aluminum	1.18E+02	7.35E+01	1.10E+02	1.10E+03	**1.1E+00**	6.7E-01	1.1E-01	6.7E-02
Chromium	3.66E-01	2.46E-01	1.00E+00	5.00E+00	3.7E-01	2.5E-01	7.3E-02	4.9E-02
Copper	7.89E-01	4.28E-01	4.70E+01	4.70E+02	1.7E-02	9.1E-03	1.7E-03	9.1E-04
Iron	3.49E+02	1.62E+02	no data	No data	--	--	--	--
Manganese	1.44E+01	9.98E+00	9.77E+02	9.77E+03	1.5E-02	1.0E-02	1.5E-03	1.0E-03
Mercury	6.91E-02	1.01E-02	3.25E+00	3.25E+01	2.1E-02	3.1E-03	2.1E-03	3.1E-04
Nickel	3.08E+01	2.13E+01	7.74E+01	1.07E+02	4.0E-01	2.7E-01	2.9E-01	2.0E-01
Selenium	1.11E-01	3.94E-02	4.00E-01	8.00E-01	2.8E-01	9.8E-02	1.4E-01	4.9E-02
Thallium	2.25E-02	7.48E-03	9.50E-02	9.50E-02	2.4E-01	7.9E-02	2.4E-01	7.9E-02
Vanadium	4.20E-01	2.89E-01	1.14E+00	1.14E+00	3.7E-01	2.5E-01	3.7E-01	2.5E-01
Zinc	2.18E+00	1.38E+00	1.45E+01	1.31E+02	1.5E-01	9.5E-02	1.7E-02	1.0E-02

(1) Receptor exposure from Table M.95
(2) NOAEL toxicity reference value from Table M.40
(3) LOAEL toxicity reference value from Table M.41
(4) Hazard quotient calculated as HQ = exposure rate / toxicity reference value
BOLD : represents receptor HQ >= 1.

TABLE M.98

Invertebrate Risk Screening for COPCs
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

		Surface Soil (0-1 ft)			Mixed Surface and Subsurface Soil (0-4 ft)			Comparison to Benchmark[1]		
Class	Analyte	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Mean Concentration (mg/kg)	Maximum Concentration (mg/kg)	Max Detect Location	Earth-worms	Micro-organisms	Exceeds Benchmark?
Volatiles	1,2,4-Trichlorobenzene	4.71E-02	1.10E-02	MW12-18	6.36E-02	1.10E-02	MW12-18	20	na	No
	Acetone	7.13E-03	2.60E-02	SB12-10	7.34E-03	2.60E-02	SB12-5A	na	na	No Criteria
PAHs	2-Methylnaphthalene	4.66E-02	5.50E-03	SB12-5A	6.17E-02	5.50E-03	SB12-5A	na	na	No Criteria
	Benzo(a)anthracene	2.72E-02	2.60E-02	MW12B-1	4.99E-02	2.60E-02	MW12B-1	na	na	No Criteria
	Benzo(b)fluoranthene	2.41E-02	3.40E-02	MW12B-1	4.79E-02	3.40E-02	MW12B-1	na	na	No Criteria
	Benzo(ghi)perylene	4.25E-02	1.10E-02	MW12-18	5.86E-02	3.90E-02	TP12-23C	na	na	No Criteria
	Benzo(k)fluoranthene	2.67E-02	2.00E-02	MW12B-1	4.94E-02	2.00E-02	MW12B-1	na	na	No Criteria
	Chrysene	2.19E-02	3.20E-02	MW12B-1	4.51E-02	3.20E-02	MW12B-1	na	na	No Criteria
	Dibenz(a,h)anthracene	4.62E-02	4.80E-03	SB12-10	6.30E-02	4.80E-03	SB12-10	na	na	No Criteria
	Indeno(1,2,3-cd)pyrene	3.96E-02	7.30E-03	SB12-10	5.75E-02	8.70E-03	TP12-23B	na	na	No Criteria
Semi-vols	Bis(2-Ethylhexyl)phthalate	4.21E-02	3.60E-02	MW12-16	7.29E-02	3.60E-02	MW12B-1	na	na	No Criteria
	Butylbenzylphthalate	4.64E-02	5.90E-03	MW12-9	6.31E-02	5.90E-03	MW12-16	na	na	No Criteria
	Carbazole	--	--	--	6.33E-02	7.40E-03	TP12-23B	na	na	No Criteria
	Di-n-octylphthalate	4.13E-02	1.50E-02	MW12-17,SB12-10	5.99E-02	1.50E-02	MW12-17	na	na	No Criteria
	Dibenzofuran	--	--	--	6.32E-02	4.10E-03	TP12-23B	na	na	No Criteria
PCBs	Aroclor-1254	1.95E-02	2.30E-02	SS12-144	1.91E-02	2.30E-02	SS12-144	na	na	No Criteria
	Aroclor-1260	1.96E-02	2.50E-02	SS12-144	1.92E-02	2.50E-02	SS12-144	na	na	No Criteria
Pesticides	4,4'-DDT	2.07E-03	4.20E-03	SS12-144	1.99E-03	4.20E-03	SS12-144	na	na	No Criteria
Metals	Aluminum	9.38E+03	1.36E+04	MW12-16	9.31E+03	1.45E+04	SB12-6	na	600	Yes
	Chromium	1.46E+01	1.89E+01	SB12-10	1.49E+01	2.97E+01	TP12-23C	na	10	Yes
	Copper	2.20E+01	4.11E+01	SB12-10	2.40E+01	7.45E+01	TP12-23C	50	100	Yes
	Iron	2.04E+04	4.11E+04	SB12-10	2.05E+04	5.10E+04	TP12-23C	na	200	Yes
	Lead	--	--	--	1.36E+01	9.09E+01	TP12-23C	500	900	No
	Manganese	4.41E+02	6.29E+02	TP12-23A	4.22E+02	6.29E+02	TP12-23A	na	100	Yes
	Mercury	4.57E-02	2.90E-01	SB12-10	4.56E-02	2.90E-01	MW12B-1	na	30	No
	Nickel	2.18E+01	3.03E+01	SB12-5A	2.27E+01	3.69E+01	MW12-9	200	90	No
	Selenium	5.06E-01	1.30E+00	MW12B-1	4.61E-01	1.30E+00	SB12-6	70	100	No
	Thallium	8.05E-01	2.20E+00	SB12-10	7.31E-01	2.20E+00	MW12-18,SB12-10	na	na	No Criteria
	Vanadium	1.69E+01	2.28E+01	MW12-16	1.67E+01	2.38E+01	SB12-6	na	20	Yes
	Zinc	5.35E+01	8.00E+01	SB12-10	2.93E+02	6.08E+03	TP12-23C	200	100	Yes

Notes:

-- analyte is not a COPC in this medium.

1 Will, M.E. and G.W. Suter II, *Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process*, Martin Marietta Environmental Restoration Program, September 1994.

Earthworms-Screening benchmark concentrations for the toxicity of chemicals to earthworms.

Microorganisms-Screening benchmark concentrations for the toxicity of chemicals to soil microorganisms and microbial processes.

na criteria is not available.

Table M.99
Calculated Sediment and Surface Water Maximum Exposure - Great Blue Heron
Seneca / SEAD-12
Seneca Army Depot Activity

Constituent	Surface Water Max Conc. (mg/L)[1]	Sediment Max Conc. (mg/kg)[2]	Estimated Pore Water[3]		Bioaccumulation Factors[4]					Trophic Level 2 Tissue Conc. (mg/kg)[5]	Great Blue Heron Exposure (mg/kg/day)[6]
			logKoc or Kd	Water Conc. (mg/L)	logKow	BCF	Ref	FCM	BAF		
Volatiles											
Acetone	1.00E-02	9.50E-02	-0.43	6.7E+00	-0.24	0.39		1	0.39	3.87E-03	2.34E-03
Trichloroethene	1.00E-03	1.80E-02	1.81	7.3E-03	2.60	55.72		1	55.72	5.57E-02	1.01E-02
Semi-Volatiles											
4-Methylphenol	ND	1.50E-01	1.69	8.1E-02	1.67	11		1	11	8.82E-01	1.57E-01
Benzo(a)anthracene	5.00E-04	3.10E+00	6.14	5.9E-05	5.90	17947		1	17947	8.97E+00	1.62E+00
Benzo(a)pyrene	6.00E-04	3.30E+00	5.60	2.2E-04	6.04	22930		1	22930	1.38E+01	2.46E+00
Benzo(b)fluoranthene	ND	3.20E+00	5.74	1.5E-04	6.57	57970		1	57970	8.88E+00	1.60E+00
Benzo(g,h,i)perylene	ND	2.10E+00	6.89	7.1E-06	7.10	146555		1	146555	1.04E+00	2.10E-01
Benzo(k)fluoranthene	1.00E-03	2.70E+00	6.64	1.6E-05	6.85	94624		1	94624	9.46E+01	1.67E+01
Bis(2-Ethylhexyl)phthalate	1.20E-02	5.00E+00	5.00	1.3E-03	4.20	916		1	916	1.10E+01	2.00E+00
Carbazole	ND	9.10E-01	--	NA		0.59		1	0.59	0.00E+00	1.17E-02
Chrysene	5.00E-04	3.20E+00	5.39	3.4E-04	5.61	10804		1	10804	5.40E+00	9.90E-01
Dibenz(a,h)anthracene	ND	8.60E-01	6.22	1.4E-05	6.36	40142		1	40142	5.47E-01	1.07E-01
Dibenzofuran	ND	6.40E-02	3.91	2.1E-04	4.17	869		1	869	1.80E-01	3.25E-02
Indeno(1,2,3-cd)pyrene	ND	2.00E+00	7.49	1.7E-06	7.70	418794		1	418794	7.13E-01	1.51E-01
Pesticides											
4-4'-DDD	ND	1.10E-01	4.64	6.6E-05	6.02	22141		1	22141	1.47E+00	2.59E-01
4,4'-DDE	5.60E-06	7.60E-02	6.00	2.0E-06	5.83	15878		1	15878	8.89E-02	1.66E-02
4,4'-DDT	6.20E-05	2.00E-01	6.26	2.9E-06	6.44	46174		1	46174	2.86E+00	5.06E-01
Aroclor-1254	ND	1.20E+00	5.61	7.8E-05	6.47	48663		1	48663	3.77E+00	6.78E-01
Delta-BHC	4.60E-06	ND	3.46	NA	4.14	825		1	825	3.79E-03	6.67E-04
Heptachlor	6.30E-06	ND	4.34	NA	5.44	8024		1	8024	5.06E-02	8.88E-03
Heptachlor epoxide	3.30E-06	1.10E-02	4.32	1.4E-05	5.40	7482		1	7482	2.47E-02	4.48E-03
Hexachlorobenzene	2.00E-05	ND	3.59	NA	5.15	4831		1	4831	9.66E-02	1.70E-02
Metals											
Aluminum	3.43E+00	3.87E+04	--	NA	NA	231	a	1	231	7.92E+02	6.36E+02
Antimony	ND	2.80E+00	--	NA	NA	1	f	1	1	0.00E+00	3.60E-02
Arsenic	3.80E-03	1.91E+01	--	NA	NA	17	g	1	17	6.46E-02	2.57E-01
Barium	1.15E-01	8.85E+02	46	1.9E+01	NA	100	h	1	100	1.15E+01	1.34E+01
Beryllium	1.80E-04	1.70E+00	6310	2.7E-04	NA	19	b	1	19	3.42E-03	2.24E-02
Cadmium	2.10E-03	9.00E+00	75	1.2E-01	NA	15	c	1	15	3.15E-02	1.21E-01

Table M.99
Calculated Sediment and Surface Water Maximum Exposure - Great Blue Heron
Seneca / SEAD-12
Seneca Army Depot Activity

Constituent	Surface Water Max Conc. (mg/L)[1]	Sediment Max Conc. (mg/kg)[2]	Estimated Pore Water[3]		Bioaccumulation Factors[4]					Trophic Level 2 Tissue Conc. (mg/kg)[5]	Great Blue Heron Exposure (mg/kg/day)[6]
			logKoc or Kd	Water Conc. (mg/L)	logKow	BCF	Ref	FCM	BAF		
Chromium	3.30E-03	1.30E+02	--	NA	NA	1	g	1	1	3.30E-03	1.67E+00
Cobalt	6.00E-03	7.53E+01	--	NA	NA	1	f	1	1	6.00E-03	9.69E-01
Copper	2.76E-02	1.16E+03	24	4.8E+01	NA	100	d	1	100	2.76E+00	1.54E+01
Iron	6.83E+00	8.59E+04	--	NA	NA	1	f	1	1	6.83E+00	1.10E+03
Lead	3.54E-02	2.15E+02	900	2.4E-01	NA	45	a	1	45	1.59E+00	3.04E+00
Manganese	1.32E+00	1.40E+04	--	NA	NA	1	f	1	1	1.32E+00	1.80E+02
Mercury	1.10E-04	1.70E+00	--	NA	NA	3530	c	1	3530	3.88E-01	9.01E-02
Nickel	1.97E-02	1.26E+02	--	NA	NA	36	g	1	36	7.09E-01	1.74E+00
Selenium	ND	6.20E+00	3	1.8E+00	NA	6	e	1	6	1.07E+01	1.96E+00
Silver	1.60E-03	1.50E+00	--	NA	NA	1	h	1	1	1.60E-03	1.96E-02
Thallium	6.50E-03	4.00E+00	--	NA	NA	34	b	1	34	2.21E-01	9.05E-02
Vanadium	7.20E-03	7.03E+01	1000	7.0E-02	NA	1	f	1	1	7.20E-03	9.05E-01
Zinc	1.05E-01	2.65E+03	62	4.3E+01	NA	1000	d	1	1000	1.05E+02	5.25E+01

1 Includes concentrations for constituents detected in surface water; ND indicates analyte is below detection limit.
2 Includes concentrations for constituents detected in sediment; ND indicates analyte is below detection limit.
3 Pore water concentrations are estimated using partitioning coefficients (Koc and Kd for organics and metals, respectively)
NA and "--" - not available
4 Kow - octanol-water partition coefficient; BCF - bioconcentration factor; FCM - food chain multiplier; BAF - bioaccumulation factor (see text)
BCF values are calculated using the chemical-specific Kow using the following formula: BCF = 10^(0.76*logKow-0.23) (Lyman et al., 1982, as cited in Sample et al., 1996)
BAF = BCF*FCM (DPD, 1999) unless otherwise referenced
The food chain multipliers (FCM) are from the Water Quality Guidance for the Great Lakes System (USEPA, 1995; Table B-1)
5 Estimated prey concentrations are modeled using measured surface water concentrations and BAFs, if site-specific surface water concentrations could not be calculated, estimated pore water concentrations were used. For organic compounds, pore water concentrations were calculated according to the following formula:
Pore Water Conc. = Conc Sed / 0.02 * (10^logKoc)*1.9. For inorganics, Pore Water Conc. = Conc Sed / Kd.
6 Exposure for great blue heron (sediment and surface water COPCs) is calculated as:
Exposure ED = [(Cs * Is) + (Cf * Ia) + (Cw * Iw)] * SFF / BW
Where, ED = exposure dose
Cs = maximum concentration in sediment (mg/kg)
Is = incidental sediment intake rate (0.0307 kg/day)
Cf = modeled concentration in fish tissue (mg/kg)
Ia = animal-matter intake rate (0.4200 kg/day)
Cw = maximum concentration in surface water (mg/L)
Iw = incidental surface water intake rate (0.1058 L/day)
SFF = site foraging factor (assumed to be 1 for screening assessment)
BW = body weight (2.39 kg)

a Sample et al., 1996
b AQUIRE database
c Eisler, 1986
d ATSDR, 1993
e Peterson and Nebeker, 1992
f default
g ATSDR 1992
h ATSDR 1990

Table M.100
Calculated Sediment and Surface Water Mean Exposure - Great Blue Heron
Seneca / SEAD-12
Seneca Army Depot Activity

Constituent	Surface Water Mean Conc. (mg/L)[1]	Sediment Mean Conc. (mg/kg)[2]	Estimated Pore Water[3] logKoc or Kd	Estimated Pore Water[3] Water Conc. (mg/L)	Bioaccumulation Factors[4] logKow	Bioaccumulation Factors[4] BCF	Bioaccumulation Factors[4] Ref	Bioaccumulation Factors[4] FCM	Bioaccumulation Factors[4] BAF	Trophic Level 2 Tissue Conc. (mg/kg)[5]	Great Blue Heron Mean Exposure (mg/kg/day)[6]
Volatiles											
Acetone	2.93E-03	2.32E-02	-0.43	1.6E+00	-0.24	0.39		1	0.39	1.13E-03	6.27E-04
Trichloroethene	7.86E-04	1.52E-02	1.81	6.2E-03	2.60	55.72		1	55.72	4.38E-02	7.93E-03
Semi-Volatiles											
4-Methylphenol	ND	1.26E-01	1.69	6.8E-02	1.67	11		1	11	7.43E-01	1.32E-01
Benzo(a)anthracene	7.49E-04	2.06E-01	6.14	3.9E-06	5.90	17947		1	17947	1.34E+01	2.36E+00
Benzo(a)pyrene	7.50E-04	2.14E-01	5.60	1.4E-05	6.04	22930		1	22930	1.72E+01	3.02E+00
Benzo(b)fluoranthene	ND	2.41E-01	5.74	1.2E-05	6.57	57970		1	57970	6.68E-01	1.21E-01
Benzo(g,h,i)perylene	ND	1.68E-01	6.89	5.7E-07	7.10	146555		1	146555	8.36E-02	1.69E-02
Benzo(k)fluoranthene	7.54E-04	1.90E-01	6.64	1.1E-06	6.85	94624		1	94624	7.13E+01	1.25E+01
Bis(2-Ethylhexyl)phthalate	1.02E-03	2.21E-01	5.00	5.8E-05	4.20	916		1	916	9.33E-01	1.67E-01
Carbazole	ND	1.12E-01	--	NA		0.59		1	0.59	0.00E+00	1.44E-03
Chrysene	7.49E-04	2.29E-01	5.39	2.5E-05	5.61	10804		1	10804	8.09E+00	1.43E+00
Dibenz(a,h)anthracene	ND	1.01E-01	6.22	1.6E-06	6.36	40142		1	40142	6.44E-02	1.26E-02
Dibenzofuran	ND	9.91E-02	3.91	3.2E-04	4.17	869		1	869	2.79E-01	5.03E-02
Indeno(1,2,3-cd)pyrene	ND	1.55E-01	7.49	1.3E-07	7.70	418794		1	418794	5.54E-02	1.17E-02
Pesticides											
4-4'-DDD	ND	8.82E-03	4.64	5.3E-06	6.02	22141		1	22141	1.18E-01	2.08E-02
4,4'-DDE	8.10E-06	8.72E-03	6.00	2.3E-07	5.83	15878		1	15878	1.29E-01	2.27E-02
4,4'-DDT	9.26E-06	9.41E-03	6.26	1.4E-07	6.44	46174		1	46174	4.28E-01	7.53E-02
Aroclor-1254	ND	7.40E-02	5.61	4.8E-06	6.47	48663		1	48663	2.33E-01	4.18E-02
Delta-BHC	4.08E-06	ND	3.46	NA	4.14	825		1	825	3.36E-03	5.91E-04
Heptachlor	4.22E-06	ND	4.34	NA	5.44	8024		1	8024	3.39E-02	5.95E-03
Heptachlor epoxide	4.10E-06	2.85E-03	4.32	3.6E-06	5.40	7482		1	7482	3.07E-02	5.43E-03
Hexachlorobenzene	5.33E-06	ND	3.59	NA	5.15	4831		1	4831	2.57E-02	4.53E-03

Table M.100
Calculated Sediment and Surface Water Mean Exposure - Great Blue Heron
Seneca / SEAD-12
Seneca Army Depot Activity

Constituent	Surface Water Mean Conc. (mg/L)[1]	Sediment Mean Conc. (mg/kg)[2]	Estimated Pore Water[3] logKoc or Kd	Estimated Pore Water[3] Water Conc. (mg/L)	Bioaccumulation Factors[4] logKow	Bioaccumulation Factors[4] BCF	Bioaccumulation Factors[4] Ref	Bioaccumulation Factors[4] FCM	Bioaccumulation Factors[4] BAF	Trophic Level 2 Tissue Conc. (mg/kg)[5]	Great Blue Heron Mean Exposure (mg/kg/day)[6]
Metals											
Aluminum	2.81E-01	1.24E+04	--	NA	NA	231	(a)	1	231	6.48E+01	1.70E+02
Antimony	ND	8.54E-01	--	NA	NA	1	(f)	1	1	0.00E+00	1.10E-02
Arsenic	1.48E-03	5.37E+00	--	NA	NA	17	(j)	1	17	2.52E-02	7.35E-02
Barium	4.06E-02	1.16E+02	46	2.5E+00	NA	100	(g)	1	100	4.06E+00	2.21E+00
Beryllium	5.78E-05	4.34E-01	6310	6.9E-05	NA	19	(b)	1	19	1.10E-03	5.78E-03
Cadmium	2.73E-04	6.63E-01	75	8.8E-03	NA	15	(c)	1	15	4.10E-03	9.24E-03
Chromium	6.93E-04	2.29E+01	--	NA	NA	1	(j)	1	1	6.93E-04	2.94E-01
Cobalt	8.60E-04	1.15E+01	--	NA	NA	1	(f)	1	1	8.60E-04	1.48E-01
Copper	2.92E-03	5.14E+01	24	2.1E+00	NA	100	(k)	1	100	2.92E-01	7.12E-01
Iron	4.70E-01	2.57E+04	--	NA	NA	1	(f)	1	1	4.70E-01	3.30E+02
Lead	1.83E-03	2.65E+01	900	2.9E-02	NA	45	(a)	1	45	8.26E-02	3.56E-01
Manganese	1.02E-01	1.08E+03	--	NA	NA	1	(f)	1	1	1.02E-01	1.39E+01
Mercury	2.27E-04	1.37E-01	--	NA	NA	68600	(c)	1	68600	1.56E+01	2.74E+00
Nickel	1.67E-03	3.44E+01	--	NA	NA	36	(j)	1	36	6.01E-02	4.52E-01
Selenium	ND	1.66E+00	3	4.8E-01	NA	6	(I)	1	6	2.88E+00	5.27E-01
Silver	6.80E-04	4.37E-01	--	NA	NA	1	(f)	1	1	6.80E-04	5.77E-03
Thallium	2.99E-03	1.66E+00	--	NA	NA	34	b	1	34	1.02E-01	3.93E-02
Vanadium	9.20E-04	2.38E+01	1000	2.4E-02	NA	1	(f)	1	1	9.20E-04	3.06E-01
Zinc	2.19E-02	2.39E+02	62	3.9E+00	NA	1000	(h)	1	1000	2.19E+01	6.92E+00

1 Includes concentrations for constituents detected in surface water. ND indicates analyte is below detection limit
2 Includes concentrations for constituents detected in sediment. ND indicates analyte is below detection limit
3 Pore water concentrations are estimated using partitioning coefficients (Koc and Kd for organics and metals, respectively)
NA and "--" - not available
4 Kow - octanol-water partition coefficient, BCF - bioconcentration factor, FCM - food chain multiplier, BAF - bioaccumulation factor (see text)
BCF values are calculated using the chemical-specific Kow - BCF 10^(0.76*logKow-0.23)
BAF =BCF*FCM (DPD, 1999) unless otherwise referenced
5 Estimated prey concentrations are modeled using measured surface water concentrations and BAFs, if site-specific surface water concentrations could not be calculated, estimated pore water concentrations were used For organic compounds, pore water concentrations were calculated according to the following formula.
Pore Water Conc = Conc Sed / 0.02 * (10^logKoc)*1.9 For inorganics, Pore Water Conc = Conc Sed / Kd
6 Exposure for great blue heron (sediment and surface water COPCs) is calculated as
Exposure ED = [(Cs * Is) + (Cf * Ia) + (Cw * Iw)] * SFF / BW
Where, ED = exposure dose
Cs = maximum concentration in sediment (mg/kg)
Is = incidental sediment intake rate (0.0307 kg/day)
Cf = modeled concentration in fish tissue (mg/kg)
Ia = animal-matter intake rate (0.4200 kg/day)
Cw = maximum concentration in surface water (mg/L)
Iw = incidental surface water intake rate (0.1058 L/day)
SFF = site foraging factor (assumed to be 1for screening assessment)
BW = body weight (2.39 kg)

a Sample et al., 1996
b AQUIRE database
c Eisler, 1986
d ATSDR, 1993
e Peterson and Nebeker, 1992
f default
g ATSDR 1992
h ATSDR 1990

Table M.101
Calculated Hazard Quotients - Great Blue Heron
Seneca / SEAD-12
Seneca Army Depot Activity

Constituent	Great Blue Heron Max Exposure[1] (mg/kg/day)	Great Blue Heron Mean Exposure[1] (mg/kg/day)	NOAEL TRV[2] (mg/kg/day)	LOAEL TRV[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Volatiles								
Acetone	2.34E-03	6.27E-04	4.51E+01	4.51E+02	5.2E-05	1.4E-05	5.2E-06	1.4E-06
Trichloroethene	1.01E-02	7.93E-03	no data	no data	--	--	--	--
Semi-Volatiles								
4-Methylphenol	1.57E-01	1.32E-01	2.06E-01	2.06E-01	7.6E-01	6.4E-01	7.6E-01	6.4E-01
Benzo(a)anthracene*	1.62E+00	2.36E+00	2.85E+01	2.85E+02	5.7E-02	8.3E-02	5.7E-03	8.3E-03
Benzo(a)pyrene*	2.46E+00	3.02E+00	2.85E+01	2.85E+02	8.6E-02	1.1E-01	8.6E-03	1.1E-02
Benzo(b)fluoranthene	1.60E+00	1.21E-01	2.85E+01	2.85E+02	5.6E-02	4.2E-03	5.6E-03	4.2E-04
Benzo(g.h.i)perylene	2.10E-01	1.69E-02	2.85E+01	2.85E+02	7.4E-03	5.9E-04	7.4E-04	5.9E-05
Benzo(k)fluoranthene	1.67E+01	1.25E+01	2.85E+01	2.85E+02	5.8E-01	4.4E-01	5.8E-02	4.4E-02
Bis(2-Ethylhexyl)phthalate	2.00E+00	1.67E-01	1.11E+00	1.11E+01	**1.8E+00**	1.5E-01	1.8E-01	1.5E-02
Carbazole	1.17E-02	1.44E-03	no data	--	--	--	--	--
Chrysene*	9.90E-01	1.43E+00	2.85E+01	2.85E+02	3.5E-02	5.0E-02	3.5E-03	5.0E-03
Dibenz(a.h)anthracene	1.07E-01	1.26E-02	2.85E+01	2.85E+02	3.8E-03	4.4E-04	3.8E-04	4.4E-05
Dibenzofuran*	3.25E-02	5.03E-02	2.18E-01	2.18E-01	1.5E-01	2.3E-01	1.5E-01	2.3E-01
Indeno(1.2.3-cd)pyrene	1.51E-01	1.17E-02	2.85E+01	2.85E+02	5.3E-03	4.1E-04	5.3E-04	4.1E-05
Pesticides								
4-4'-DDD	2.59E-01	2.08E-02	2.80E-03	2.80E-02	**9.3E+01**	**7.4E+00**	**9.3E+00**	7.4E-01
4.4'-DDE*	1.66E-02	2.27E-02	2.80E-03	2.80E-02	**5.9E+00**	**8.1E+00**	5.9E-01	8.1E-01
4.4'-DDT	5.06E-01	7.53E-02	2.80E-03	2.80E-02	**1.8E+02**	**2.7E+01**	**1.8E+01**	**2.7E+00**
Aroclor-1254	6.78E-01	4.18E-02	1.80E-01	1.80E+00	**3.8E+00**	2.3E-01	3.8E-01	2.3E-02
Delta-BHC	6.67E-04	5.91E-04	5.60E-01	2.25E+00	1.2E-03	1.1E-03	3.0E-04	2.6E-04
Heptachlor	8.88E-03	5.95E-03	2.08E+01	2.08E+01	4.3E-04	2.9E-04	4.3E-04	2.9E-04
Heptachlor epoxide*	4.48E-03	5.43E-03	2.08E+01	2.08E+01	2.2E-04	2.6E-04	2.2E-04	2.6E-04
Hexachlorobenzene	1.70E-02	4.53E-03	no data	no data	--	--	--	--
Metals								
Aluminum	6.36E+02	1.70E+02	1.10E+02	1.10E+03	**5.8E+00**	**1.6E+00**	5.8E-01	1.5E-01
Antimony	3.60E-02	1.10E-02	no data	no data	--	--	--	--
Arsenic	2.57E-01	7.35E-02	5.14E+00	1.28E+01	5.0E-02	1.4E-02	2.0E-02	5.7E-03
Barium	1.34E+01	2.21E+00	2.08E+01	4.16E+01	6.4E-01	1.1E-01	3.2E-01	5.3E-02
Beryllium	2.24E-02	5.78E-03	no data	no data	--	--	--	--
Cadmium	1.21E-01	9.24E-03	1.45E+00	2.00E+01	8.4E-02	6.4E-03	6.1E-03	4.6E-04
Chromium	1.67E+00	2.94E-01	1.00E+00	5.00E+00	**1.7E+00**	2.9E-01	3.3E-01	5.9E-02
Cobalt	9.69E-01	1.48E-01	no data	no data	--	--	--	--
Copper	1.54E+01	7.12E-01	4.70E+01	4.70E+02	3.3E-01	1.5E-02	3.3E-02	1.5E-03
Iron	1.10E+03	3.30E+02	no data	no data	--	--	--	--
Lead	3.04E+00	3.56E-01	3.85E+00	3.85E+01	7.9E-01	9.2E-02	7.9E-02	9.2E-03
Manganese	1.80E+02	1.39E+01	9.77E+02	9.77E+03	1.8E-01	1.4E-02	1.8E-02	1.4E-03
Mercury	9.01E-02	2.74E+00	3.25E+00	3.25E+01	2.8E-02	8.4E-01	2.8E-03	8.4E-02
Nickel	1.74E+00	4.52E-01	7.74E+01	1.07E+02	2.3E-02	5.8E-03	1.6E-02	4.2E-03
Selenium	1.96E+00	5.27E-01	4.00E-01	8.00E-01	**4.9E+00**	**1.3E+00**	**2.5E+00**	6.6E-01
Silver	1.96E-02	5.77E-03	no data	no data	--	--	--	--
Thallium	9.05E-02	3.93E-02	9.50E-02	9.50E-02	9.5E-01	4.1E-01	9.5E-01	4.1E-01
Vanadium	9.05E-01	3.06E-01	1.14E+01	1.14E+02	7.9E-02	2.7E-02	7.9E-03	2.7E-03
Zinc	5.25E+01	6.92E+00	1.45E+01	1.31E+02	**3.6E+00**	4.8E-01	4.0E-01	5.3E-02

1 Receptor exposure from Table M.46
2 NOAEL toxicity reference value from Table M.40
3 LOAEL toxicity reference value from Table M.41
4 Hazard quotient calculated as HQ = exposure rate toxicity reference value.
BOLD : indicates receptor HQ > 1.
* Mean was greater than the maximum because of using 1 2 the detection limit to calculate.

TABLE M.102
Calculated Surface Water Hazard Quotients - Largemouth Bass
SEAD 12
Seneca Army Depot, NY

Constituent	Largemouth Bass Max Exposure (mg/L)	Largemouth Bass Mean Exposure (mg/L)	Toxicity Reference Value (mg/L)	Max Hazard Quotient[1]	Mean Hazard Quotient[2]
Semivolatiles					
Bis(2-ethylhexyl)phthalate	1.20E-02	1.02E-03	7.50E+01	0.0	0.0
Pesticides					
Delta-BHC	4.60E-06	4.08E-06	7.90E-01	0.0	0.0
Heptachlor	6.30E-06	4.22E-06	1.00E-04	0.0	0.0
Hexachlorobenzene	2.00E-05	5.33E-06	No data	--	--
Metals					
Aluminum	3.43E+00	2.81E-01	1.11E+00	**3.1**	0.3
Barium	1.15E-01	4.06E-02	5.00E+00	0.0	0.0
Cobalt	6.00E-03	8.60E-04	6.00E-03	1.0	0.1
Copper	2.76E-02	2.92E-03	1.24E+00	0.0	0.0
Iron	6.83E+00	4.70E-01	1.50E+00	**4.6**	0.3
Lead	3.54E-02	1.83E-03	5.85E+00	0.0	0.0
Manganese	1.32E+00	1.02E-01	1.30E+00	1.0	0.1
Mercury*	1.10E-04	2.27E-04	2.00E+02	0.0	0.0
Silver	1.60E-03	6.80E-04	5.00E+00	0.0	0.0

Exposure concentrations for fish equal the surface water concentration.

1 Max Hazard quotient calculated as HQ = max exposure concentration / toxicity reference value

2 Mean Hazard quotient calculated as HQ = mean exposure concentration / toxicity reference value

BOLD = indicates receptor HQ > 1.

TABLE M.103
Calculated Tissue Concentration Hazard Quotients - Largemouth Bass
SEAD 12
Seneca Army Depot, NY

Constituent	Max Concentration (mg/L)	Mean Concentration (mg/L)	logKow	BCF	FCM	Trophic Level 4 Max Tissue Conc (mg/kg)	Trophic Level 4 Mean Tissue Conc (mg/kg)	Tissue Reference Concentration (mg/kg)	Max Hazard Quotient	Mean Hazard Quotient
Semivolatiles										
Bis(2-ethylhexyl)phthalate	1.20E-02	1.02E-03	4.2	916	1.13	1.24E+01	1.05E+00	No data	NA	NA
Pesticides										
Delta-BHC	4.60E-06	4.08E-06	4.14	825	1.1	4.17E-03	3.70E-03	1.50E+00	0.0	0.0
Heptachlor	6.30E-06	4.22E-06	5.44	8024	5.8	2.93E-01	1.96E-01	1.00E-02	**29.3**	**19.6**
Hexachlorobenzene	2.00E-05	5.33E-06	5.15	4831	3.8	3.67E-01	9.79E-02	No data	NA	NA
Metals										
Aluminum	3.43E+00	2.81E-01	NA	231	1	7.92E+02	6.48E+01	1.25E+01	**63.4**	**5.2**
Barium	1.15E-01	4.06E-02	NA	100	1	1.15E+01	4.06E+00	No data	NA	NA
Cobalt	6.00E-03	8.60E-04	NA	1	1	6.00E-03	8.60E-04	No data	NA	NA
Copper	2.76E-02	2.92E-03	NA	100	1	2.76E+00	2.92E-01	3.92E+00	0.7	0.1
Iron	6.83E+00	4.70E-01	NA	1	1	6.83E+00	4.70E-01	No data	NA	NA
Lead	3.54E-02	1.83E-03	NA	45	1	1.59E+00	8.26E-02	2.50E+00	0.6	0.0
Manganese	1.32E+00	1.02E-01	NA	1	1	1.32E+00	1.02E-01	No data	NA	NA
Mercury*	1.10E-04	2.27E-04	NA	68600	1	7.55E+00	1.56E+01	1.40E-01	**53.9**	**111.3**
Silver	1.60E-03	6.80E-04	NA	1	1	1.60E-03	6.80E-04	No data	NA	NA

Exposure concentrations for fish equal the surface water concentration

logKow and BCF from Table M.99

The food chain multipliers (FCM) are from the Water Quality Guidance for the Great Lakes System (USEPA, 1995; Table B-1)

* Mean is greater than the maximum because of using 1/2 detection limit to calculate

Trophic Level 4 tissue conc = Surface Water Conc. * BCF * FCM

Tissue Reference concentration from Table M.44

Hazard Quotient = Trophic Level 4 Conc / Tissue Reference Concentration

TABLE M.104
Calculated Surface Water Hazard Quotients - Amphibians
SEAD 12
Seneca Army Depot, NY

Constituent	Amphibians Max Exposure (mg/L)	Amphibians Mean Exposure (mg/L)	Effect Concentration (mg/L)	Max Hazard Quotient[1]	Mean Hazard Quotient[2]
Semivolatiles					
Bis(2-ethylhexyl)phthalate	1.20E-02	1.02E-03	No data	--	--
Pesticides					
Delta-BHC	4.60E-06	4.08E-06	2.70E+00	0.0	0.0
Heptachlor	6.30E-06	4.22E-06	4.40E-01	0.0	0.0
Hexachlorobenzene	2.00E-05	5.33E-06	No data	--	--
Metals					
Aluminum	3.43E+00	2.81E-01	5.00E-02	**69**	**5.6**
Barium	1.15E-01	4.06E-02	No data	--	--
Cobalt	6.00E-03	8.60E-04	No data	--	--
Copper	2.76E-02	2.92E-03	5.00E-02	0.6	0.1
Iron	6.83E+00	4.70E-01	No data	--	--
Lead	3.54E-02	1.83E-03	1.40E+00	0.0	0.0
Manganese	1.32E+00	1.02E-01	No data	--	--
Mercury	1.10E-04	2.27E-04	1.08E-01	0.0	0.0
Silver	1.60E-03	6.80E-04	1.00E-02	0.2	0.1

Exposure concentrations for amphibians equal the surface water concentrations.

1 Max Hazard quotient calculated as HQ = max exposure concentration / effect concentration

2 Mean Hazard quotient calculated as HQ = mean exposure concentration / effect concentration

BOLD : indicates receptor HQ > 1.

TABLE M.105
Calculated Tissue Concentration Hazard Quotients - Amphibians
SEAD 12
Seneca Army Depot, NY

Constituent	Max Concentration (mg/L)	Mean Concentration (mg/L)	logKow	BCF	FCM	Trophic Level 4 Max Tissue Conc (mg/kg)	Trophic Level 4 Mean Tissue Conc (mg/kg)	Tissue Reference Concentration (mg/kg)	Max Hazard Quotient	Mean Hazard Quotient
Semivolatiles										
Bis(2-ethylhexyl)phthalate	1.20E-02	1.02E-03	4.2	318	1.13	4.31E+00	3.66E-01			
Pesticides										
Delta-BHC	4.60E-06	4.08E-06	4.14	3807	1.1	1.93E-02	1.71E-02			
Heptachlor	6.30E-06	4.22E-06	5.44	3807	5.8	1.39E-01	9.32E-02			
Hexachlorobenzene	2.00E-05	5.33E-06	5.15	2595	3.8	1.97E-01	5.26E-02	No tissue reference concentrations for amphibians could be found for the constituents of concern.	Not Applicable	
Metals										
Aluminum	3.43E+00	2.81E-01	NA	4066	1	1.39E+04	1.14E+03			
Barium	1.15E-01	4.06E-02	NA	200	1	2.30E+01	8.13E+00			
Cobalt	6.00E-03	8.60E-04	NA	4066	1	2.44E+01	3.50E+00			
Copper	2.76E-02	2.92E-03	NA	3718	1	1.03E+02	1.08E+01			
Iron	6.83E+00	4.70E-01	NA	1	1	6.83E+00	4.70E-01			
Lead	3.54E-02	1.83E-03	NA	5059	1	1.79E+02	9.28E+00			
Manganese	1.32E+00	1.02E-01	NA	4066	1	5.37E+03	4.16E+02			
Mercury*	1.10E-04	2.27E-04	NA	20184	1	2.22E+00	4.58E+00			
Silver	1.60E-03	6.80E-04	NA	298	1	4.77E-01	2.03E-01			

* Mean is greater than the maximum because of using 1/2 detection limit to calculate.
Trophic Level 4 tissue conc. = Surface Water Conc. * BCF * FCM
Hazard Quotient = Trophic Level 4 Conc. / Tissue Reference Concentration
BCFs from USEPA, 1999. Default values were utilized for aluminum, cobalt and manganese since measured BCFs are not available.
The BCF for hexachlorobenzene was utilized as a surrogate value for delta-BHC.
FCM based on logKow for Trophic Level 4 organisms from USEPA, 1995.

TABLE M.106
A Summary of Short-tailed Shrew Exposure to Selenium in Soil Using Alternate SP and BAF
SEAD-12
Seneca Army Depot , NY

Area		Max Detected Concentration (mg/kg)	Mean Concentration (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Disposal Pit A/B	Surface (0-1'bgs)	2.30E+00	5.63E-01	1.60E-02	2.20E-01	2.57E-01	6.31E-02
	Mixed (0-4'bgs)	2.30E+00	5.66E-01	1.60E-02	2.20E-01	2.57E-01	6.33E-02
Disposal Pit C	Surface (0-1'bgs)	1.20E+00	6.07E-01	1.60E-02	2.20E-01	1.34E-01	6.80E-02
	Mixed (0-4'bgs)	1.90E+00	7.11E-01	1.60E-02	2.20E-01	2.13E-01	7.96E-02
Former Dry Waste Disposal Pit	Surface (0-1'bgs)	1.30E+00	5.06E-01	1.60E-02	2.20E-01	1.46E-01	5.66E-02
	Mixed (0-4'bgs)	1.30E+00	4.61E-01	1.60E-02	2.20E-01	1.46E-01	5.16E-02

Notes:
1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

$ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW$

Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2)
SP = soil-to-plant uptake factor, an alternate value of 0.016 was used
Ip = plant-matter intake rate (0.00155 kg/day) (from Table M.46)
BAF = bioaccumulation factor (unitless), an alternate value of 0.22 was used
Ia = animal-matter intake rate (0.00751 kg/day) (Table M.46)
Is = incidental soil intake rate (0.000022 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.015 kg) (Table M.46)

TABLE M.107
A Summary of Selenium Hazard Quotients for Short-tailed Shrew Using Alternate SP and BAF
SEAD-12
Seneca Army Depot , NY

Area		Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Disposal Pit A/B	Surface (0-1'bgs)	2.57E-01	6.31E-02	0.2	0.33	1.3E+00	3.2E-01	7.8E-01	1.9E-01
	Mixed (0-4'bgs)	2.57E-01	6.33E-02	0.2	0.33	1.3E+00	3.2E-01	7.8E-01	1.9E-01
Disposal Pit C	Surface (0-1'bgs)	1.34E-01	6.80E-02	0.2	0.33	6.7E-01	3.4E-01	4.1E-01	2.1E-01
	Mixed (0-4'bgs)	2.13E-01	7.96E-02	0.2	0.33	1.1E+00	4.0E-01	6.4E-01	2.4E-01
Former Dry Waste Disposal Pit	Surface (0-1'bgs)	1.46E-01	5.66E-02	0.2	0.33	7.3E-01	2.8E-01	4.4E-01	1.7E-01
	Mixed (0-4'bgs)	1.46E-01	5.16E-02	0.2	0.33	7.3E-01	2.6E-01	4.4E-01	1.6E-01

Notes:
1 Receptor exposure from Table M.106
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value

TABLE M.108
A Summary of Short-tailed Shrew Exposure to Aroclor 1254 in Soil Using Alternate BAF
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

	Max Detected Concentration (mg/kg)	Mean Concentration (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Surface (0-1'bgs)	6.70E-01	9.14E-02	1.00E-02	1.30E+00	4.38E-01	5.97E-02
Mixed (0-4')	3.00E+00	1.99E-01	1.00E-02	1.30E+00	1.96E+00	1.30E-01

Notes:
1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as

ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW

Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (1)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.00155 kg/day) (from Table M.46)
BAF = bioaccumulation factor (unitless), an alternate BAF of 1.3 was used
Ia = animal-matter intake rate (0.00751 kg/day) (Table M.46)
Is = incidental soil intake rate (0.000022 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.015 kg) (Table M.46)

TABLE M.109
A Summary of Aroclor 1254 Hazard Quotients for Short-tailed Shrew Using Alternate BAF
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot , NY

	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Surface (0-1'bgs)	4.38E-01	5.97E-02	0.068	0.68	6.4E+00	8.8E-01	6.4E-01	8.8E-02
Mixed (0-4')	1.96E+00	1.30E-01	0.068	0.68	2.9E+01	1.9E+00	2.9E+00	1.9E-01

Notes:
1 Receptor exposure from Table M.108
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value

TABLE M.110
Calculated Background Exposure - Short-tailed Shrew
SEAD-12
Seneca Army Depot , NY

Constituent	Max Detected Conc. (mg/kg)	Mean Conc. (mg/kg)	SP[1] (unitless)	BAF[2] (unitless)	Shrew Max Exposure[3] (mg/kg/day)	Shrew Mean Exposure[3] (mg/kg/day)
Metals						
Iron	3.86E+04	2.47E+04	4.00E-03	5.00E-02	1.03E+03	6.57E+02
Lead	2.66E+02	1.74E+01	5.80E-03	2.10E+00	2.80E+02	1.83E+01
Nickel	6.23E+01	3.09E+01	2.80E-01	1.00E+02	3.12E+03	1.55E+03
Vanadium	3.27E+01	2.14E+01	1.00E-02	1.00E+00	1.64E+01	1.08E+01
Zinc	1.26E+02	7.16E+01	1.40E+00	9.90E+00	6.28E+02	3.57E+02

Notes:
1 SP: soil-to-plant uptake factor.
2 BAF: bioaccumulation factor.
3 Exposure calculated as
ED = [(Cs * SP * CF * Ip) + (Cs * BAF * Ia) + (Cs * Is)] * SFF / BW
Where, ED = exposure dose
Cs = Max or mean conc in soil (mg/kg)
CF = plant dry-to-wet-weight conversion factor (0.2)
(inorganics only)
SP = soil-to-plant uptake factor (Table M.45)
Ip = plant-matter intake rate (0.00155 kg/day) (from Table M.46)
BAF = bioaccumulation factor (unitless) (Table M.45)
Ia = animal-matter intake rate (0.00751 kg/day) (Table M.46)
Is = incidental soil intake rate (0.000022 kg/day) (Table M.46)
SFF = site foraging factor (1)
BW = body weight (0.015 kg) (Table M.46)

TABLE M.111
Calculated Background HQs - Short-tailed Shrew
SEAD-12
Seneca Army Depot , NY

Constituent	Shrew Max Exposure[1] (mg/kg/day)	Shrew Mean Exposure[1] (mg/kg/day)	NOAEL Toxicity Reference Value[2] (mg/kg/day)	LOAEL Toxicity Reference Value[3] (mg/kg/day)	NOAEL Max Hazard Quotient[4]	NOAEL Mean Hazard Quotient[4]	LOAEL Max Hazard Quotient[4]	LOAEL Mean Hazard Quotient[4]
Metals								
Iron	1.03E+03	6.57E+02	2.55E+01	2.55E+01	40	26	40	26
Lead	2.80E+02	1.83E+01	8.00E+00	8.00E+01	35	2.3	3.5	0.23
Nickel	3.12E+03	1.55E+03	4.00E+01	8.00E+01	78	39	39	19
Vanadium	1.64E+01	1.08E+01	2.10E-01	2.10E+00	78	51	7.8	5.1
Zinc	6.28E+02	3.57E+02	1.60E+02	3.20E+02	3.9	2.2	2.0	1.1

Notes:
1 Receptor exposure from Table M.110
2 NOAEL toxicity reference value from Table M.42
3 LOAEL toxicity reference value from Table M.43
4 Hazard quotient calculated as HQ = exposure rate / toxicity reference value

TABLE M.112
Background Comparison and Summary of Ecological Contaminants of Concern - Soil
Group E - Disposal Pit A/B - SEAD-12
Seneca Army Depot, NY

Contaminant of Concern (COC)	Site Conc. (mg/kg)		Background Conc.[1] (mg/kg)		Does Site Max Exceed BG Max?	Does Site Mean Exceed BG Mean?	MAX HQ MAX SITE CONC[2]	MAX HQ MEAN SIT CONC.[2]	Background MAX HQ [3]	Background MEAN HQ [3]
	Max Detect	Mean	Max Detect	Mean						
Surface Soil (0-1 ft)										
Iron	2.71E+04	2.09E+04	3.86E+04	2.47E+04	No	No	28	22	40	26
Nickel	3.99E+01	2.43E+01	6.23E+01	3.09E+01	No	No	50	30	78	39
Vanadium	2.40E+01	1.86E+01	3.27E+01	2.14E+01	No	No	57	45	78	51
Zinc	8.37E+01	5.99E+01	1.26E+02	7.16E+01	No	No	2.6	1.9	3.9	2.2
Mixed Soil (0-4 ft)										
Iron	2.71E+04	2.10E+04	3.86E+04	2.47E+04	No	No	28	22	40	26
Lead	3.66E+02	2.94E+01	2.66E+02	1.74E+01	Yes	Yes	48	3.9	35	2.3
Nickel	4.25E+01	2.54E+01	6.23E+01	3.09E+01	No	No	53	32	78	39
Vanadium	2.40E+01	1.82E+01	3.27E+01	2.14E+01	No	No	57	44	78	51
Zinc	2.85E+02	7.28E+01	1.26E+02	7.16E+01	Yes	Yes	8.9	2.3	3.9	2.2

Notes:
1 - Background from Table G-1
2 - Max HQs from short-tail shrew calculations on Tables M.54 and M.55
3 - HQs associated with the background concentrations were calculated for the short-tail shrew. The calculations are presented in Table 111.
NA = not applicable.

TABLE M.113
Background Comparison and Summary of Ecological Contaminants of Concern - Soil
Group F - Disposal Pit C - SEAD-12
Seneca Army Depot, NY

Contaminant of Concern (COC)	Site Conc. (mg/kg)		Background [1] (mg/kg)		Does Site Max Exceed BG Max?	Does Site Mean Exceed BG Mean?	MAX HQ MAX SITE CONC[2]	MAX HQ EAN SIT CONC.[2]	BG MAX HQ [3]	BG MEAN HQ [3]
	Max Detect	Mean	Max Detect	Mean						
Surface Soil (0-1 ft)										
Iron	2.61E+04	2.07E+04	3.86E+04	2.47E+04	No	No	27	22	40	26
Nickel	3.49E+01	2.23E+01	6.23E+01	3.09E+01	No	No	44	28	78	39
Vanadium	2.46E+01	1.84E+01	3.27E+01	2.14E+01	No	No	59	44	78	51
Zinc	6.56E+02	1.04E+02	1.26E+02	7.16E+01	Yes	Yes	20	3.2	3.9	2.2
Mixed Soil (0-4 ft)										
Iron	5.10E+04	2.08E+04	3.86E+04	2.47E+04	Yes	No	53	23	40	26
Lead	9.09E+01	2.02E+01	2.66E+02	1.74E+01	No	Yes	12	2.7	35	2.3
Nickel	4.55E+01	2.47E+01	6.23E+01	3.09E+01	No	No	57	31	78	39
Vanadium	3.64E+01	1.89E+01	3.27E+01	2.14E+01	Yes	No	87	45	78	51
Zinc	6.08E+03	2.96E+02	1.26E+02	7.16E+01	Yes	Yes	190	9.2	3.9	2.2

Notes:
1 - Background from Table G-1
2 - Max HQs from short-tail shrew calculations on Tables M.71 and M.72
3 - HQs associated with the background concentrations were calculated for the short-tail shrew. The calculations are presented in Table 111.
NA - not applicable.

TABLE M.114
Background Comparison and Summary of Ecological Contaminants of Concern - Soil
Group G - Former Dry Waste Disposal Pit - SEAD-12
Seneca Army Depot, NY

Contaminant of Concern (COC)	Site Conc. (mg/kg)		Background [1] (mg/kg)		Does Site Max Exceed BG Max?	Does Site Mean Exceed BG Mean?	MAX HQ MAX SITE CONC[2]	MAX HQ EAN SIT CONC.[2]	BG MAX HQ [3]	BG MEAN HQ [3]
	Max Detect	Mean	Max Detect	Mean						
Surface Soil (0-1 ft)										
Iron	4.11E+04	2.04E+04	3.86E+04	2.47E+04	Yes	No	43	21	40	26
Nickel	3.03E+01	2.18E+01	6.23E+01	3.09E+01	No	No	38	27	78	39
Vanadium	2.28E+01	1.69E+01	3.27E+01	2.14E+01	No	No	55	40	78	51
Zinc	8.00E+01	5.35E+01	1.26E+02	7.16E+01	No	No	2.5	1.7	3.9	2.2
Mixed Soil (0-4 ft)										
Metals										
Iron	4.11E+04	1.91E+04	3.86E+04	2.47E+04	Yes	No	43	20	40	26
Nickel	3.69E+01	2.27E+01	6.23E+01	3.09E+01	No	No	40	28	78	39
Vanadium	2.38E+01	1.64E+01	3.27E+01	2.14E+01	No	No	57	39	78	51
Zinc	8.00E+01	5.05E+01	1.26E+02	7.16E+01	No	No	2.5	1.6	3.9	2.2

Notes:
1 - Background from Table G-1
2 - Max HQs from short-tail shrew calculations on Tables M.88 and M.89
3 - HQs associated with the background concentrations were calculated for the short-tail shrew. The calculations are presented in Table 111.
NA = not applicable.

TABLE M.115
Background Comparison and Summary of Ecological Contaminants of Concern
Sediment and Surface Water
SEAD 12
Seneca Army Depot, NY

Contaminant of Concern (COC)	COC[1]		Sediment (mg/kg dry)				Does Site Max Exceed	Does Site Mean Exceed	Surface Water (mg/L)				Does Site Max Exceed	Does Site Mean Exceed
			Site		Background				Site		Background			
	Sed	SW	Max Detect	Mean	Max Detect	Mean	BG Max?	BG Mean?	Max Detect	Mean	Max Detect	Mean	BG Max?	BG Mean?
Aluminum	X	X	3.87E+04	1.24E+04	1.79E+04	1.11E+04	Yes	Yes	3.43E+00	2.81E-01	1.40E-01	6.01E-02	Yes	Yes

Notes:
1 - X indicates media in which COCs have maximum HQ > 1 for either Great blue heron, Largemouth bass or amphibians.
na Background not applicable
nd Not detected

TABLE M.116
Summary of Ecological Hazard Quotients > 1 - Sediment and Surface Water
SEAD 12
Seneca Army Depot, NY

Constituent	Great Blue Heron				Largemouth Bass		Amphibians		Retained as COC[1] (Yes/No)
	NOAEL Max Hazard Quotient	NOAEL Mean Hazard Quotient	LOAEL Max Hazard Quotient	LOAEL Mean Hazard Quotient	Max Hazard Quotient	Mean Hazard Quotient	Max Hazard Quotient	Mean Hazard Quotient	
Semi-Volatiles									
Bis(2-Ethylhexyl)phthalate	**1.8**	0.2	0	0.0	0.0	0.0	--	--	No
Pesticides									
4-4'-DDD	**93**	**7.4**	**9.3**	0.7	na	na	na	na	No
4,4'-DDE	**5.9**	**8.1**	0.6	0.8	na	na	na	na	No
4,4'-DDT	**180**	**27**	**18**	**2.7**	na	na	na	na	No
Arochlor-1254	**7.5**	0.2	0.8	0.0	na	na	na	na	No
Metals									
Aluminum	**5.8**	**1.6**	1	0.2	**3.1**	0.3	**69**	**5.6**	No
Chromium	**1.7**	0.3	0.3	0.1	na	na	na	na	No
Iron	--	--	--	--	**4.6**	0.3	--	--	No
Selenium	**4.9**	**1.3**	**2.5**	0.7	na	na	na	na	No
Zinc	**3.6**	0.5	0.4	0.1	na	na	na	na	No

"--" = Can not be calculated due to lack of toxicity data.
na = Not detected in this media.
1 - See text for explanation

Table M.117
Clean-up Criteria
Seneca / SEAD-12
Seneca Army Depot Activity

Constituent	Site Mean	Site Max	NOAEL Critera[1]	LOAEL Criteria	Screening Criteria[2]	Background[3] Max Detect	Background[3] Mean
Area E Soils							
None							
Area F Soils							
Zinc	1.13E+02	6.56E+02	5.15E+02	1.03E+03	5.00E+01	1.26E+02	6.78E+01
Area G Soils							
None							
Surface Water							
None							
Sediments							
None							

1. NOAEL Criteria for soil developed by back calculating the shrew model assuming a goal HQ of 1 and a BAF of 0.56
2 Screening criteria for zinc in soils is from Oak Ridge National Laboratory (Elfroymson et al. 1997).
3 Background includes all depths

FIELD NOTES

Pond:
Solidago
Typha

bank:
Cornus stolonifera
Vitis
Daucus
Achillea
Solidago
Toxicodendron radicans
Ulmus americana
Carya ovata
Juglans
Downy woodpecker
blue-winged warbler
Canada geese
killdeer
Rhamnus
Salix
stinkpot turtle?
carp
great blue
muskrat

pond (cont)

Sagittaria
Cyperus sp
Nymphaea

hardwoods in Q
~~Carya~~ Carya ovata
Juglans?
Panic grass understory
Toxicodendron
Rubus
Solidago
Tilia
Achillea
Anthemis
Fragaria
Q. palustris
Q. rubra
Daucus carota
Ulmus americana

EM-13 @ intersection of 2 ditches
(photo #17) no water
Typha
banks - Cornus stolonifera
Solidago
hard, rocky soil
mammal gizzards
chickweed
Daucus carota
starling
woodchuck
white-tailed deer
red-tailed hawk
Castor canadensis

small wooded area
Acer rubrum
Ulmus americana
A. rubra
Populus deltoides
Betula populifolia
P. alba

old field
~~Cirsium~~ Dipsacus sylvestris
Solidago canadensis
Daucus carota
Cornus stolonifera
turkey vulture
kestrel
great blue

EM-40 photo #20
Cyperus sp
Daucus
Solidago
water nr
moist soil
mammal gizzards

EM-14 photo #21
adjacent pot hole
fine break w/ swales on both sides
old field vegetation

EM 6, 7 & 8 photos 22 & 23
deer scat
old field veg.

EM5 photo 24
old field

EM 27 photo 25
old field

EM 10 photo 26
old field

EM 11 photo #27
old field

EM-28 - photo #28
old field

Bld 818 - photo #29
@ edge of forested area

EM 37 photo #30
edge of wetland?
2. primus canyon oak
grass understory

photos 31, 32, 33

EM? behind bld. 801 & 12B
old field: bare gravel,
broken ovals, ~90 drums
& lots of wells

Pits A, B & C 34, 35, 36
old field vegetation

Seed - 12

A-section
red-tailed hawk
osprey
owl ?
american gold finch
sparrow sing
~~Yarrow~~ Achillea millifolium

Eastside of Q area
large hardwoods no understory
Q. alba
Carpinus
Acer saccarum
Carya ovata
Tilia americana
Toxicodendron radicans

Seed - 12

Area in NO
Juglans nigra
Rhus typhina
Populus deltoides
Fraxinus
Salix nigra
Quercus ?
Ulmus sp
Rubus idaeus
Toxicodendron radicans

off-base -
undeveloped area (field?)

woodchuck
2 mice
Carya ovata
Rubus sp
Solidago canadensis
Populus ~~nigra~~ deltoides
Tilia
Fraxinus
Acer saccarum
Juglans

Seed 12

Ditch in corner
Bidlia americana
Typha sp
Salix nigra
Purple loosestrife
Solidago canadensis
Fraxinus
Opossum tracks
Carp ?
Raccoon
no flow standing H_2O in depressions

Ditch in A sector
algal mats water warm,
turbid flowing South
Cyperus sp
Panic grass

Response to August 1, 2000 Comments
By
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Draft Remedial Investigation Report (RI) at SEAD-12 Seneca Army Depot,
Romulus, New York - May 2000

The general comments address concerns that pertained to the entire document. The specific comments address concerns for individual sections.

The New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation (NYSDEC) have not completely reviewed the Draft Document; however, in an effort to expedite the review process, these initial comments/suggestions are offered (Dated August1, 2000):

SEAD-12 RI Report Comments (NYSDEC Federal Projects Section)

Comment #1: The opening paragraph of Section Four states that " [d]ata from the ESI and RI investigations have been merged into a single database and are discussed as a whole in this RI report" implying that the Tables in Chapter Two (i.e. Table 2-1, Table 2-5, Table 2-6, Table 2-7, and Table 2-10), the Appendices (G, H, I, and J) and the various Figures found throughout the RI document are all in agreement regarding number of samples, sampling locations and sample identifications. The resulting review of the RI indicates that this is not the case. For example, the Chapter Two Analytical Summary Tables and the "full presentation of the analytical data collected" in Appendix G do not correlate with the specific number of samples as cited in many of the media result summaries presented in Chapter Four. Comments citing other data gaps specific to each section have been made below; however, the entire three-volume document should be reviewed and amended so that the RI presents the data completely (inclusive of all ESI and RI data) and in such a way as to reflect conditions at SEAD-12 clearly and accurately.

Response #1: Tables and text have been reviewed to cross-reference the data and confirm the sample counts as presented in the text and tables.

Comment #2: Section Four is comprised of subsections describing analytical data for nine potential release areas as listed in Section 4.3. From Figure 2-10, it appears that those areas within SEAD-12 each warranted a separate insert. The presentation of the data in Section Four should reflect this approach and include a figure for each of the nine potential release areas (inclusive of the Wastewater Treatment Plant) within their respective sections. Each section should also present all the data associated with, and specific to each potential release area as cited in the beginning of Section 4.3.

For each potential release area the results should be presented as stated in the Section Organization of Section Four, and Surface Water Results, Sediment Results and Groundwater Results should be included in each specific section, instead of the way they are presently presented by encompassing all of SEAD-12. Each of the result summary tables should include the identification of each sample that had an exceedence and a figure (inset areas as found in Figures 2-11 and 2-12) should be included showing all locations where these exceedences occurred (as in Figure 4-4). The reader should also be referred to a figure, which identifies the location and identification of all sampling points associated with the potential release area being discussed.

Response #2: **Section 4** has been amended to include a figures identifying sample points and exceedences associated with each potential release area. These figures show relevant sampling features for that potential release area. In addition, the initial discussion of the potential release areas and their history has been moved forward from **Section 4** to **Section 1** to correspond with data presented in subsequent sections. The area figures presented in Section 2 show only surface soil locations.

Subsections to each potential release area briefly present surface water, sediment, and groundwater results. However, the primary discussion of these results remains in the original surface water, sediment and groundwater sections due to site-wide implications associated with these media. Further, figures and tables for these media continue to be presented on a site-wide basis illustrating the relationship between the potential release areas for these relatively mobile media.

Comment #3: **Reference section:** The *New York State Department of Environmental Conservation (NYSDEC), 1991b, Division of Water Technical and Operational Guidance Series (1.1.1). Ambient Water Quality Standards and Guidance Values,* ***June 1998*** is the most recent issue of this guidance document but is not listed in the Reference section. The criteria listed in the Appendix for Groundwater and Surface Water should be amended as well as the conclusions based on the criteria used from the outdated guidance manuals.

Response #3: The reference section of the document has been amended to include the June 1998 guidance document. The criteria listed in the appendices for Groundwater and Surface water have been reviewed to confirm that the correct criteria are listed, with the text reviewed to confirm that conclusions are based on the proper criteria.

Comment #4: **Section 2.3 Radiological Investigations:** The text refers to a separate document that addresses the building radiological surveys. The title of the document should be included as well as a list of the buildings to be addressed in the cited document.

Response #4: The building survey report title, ***Radiological Survey Report – SEAD-12,*** *Class 1 and Class 2 Buildings (July 2000),* has been included in the text, referencing the building investigations (803, 804, 805, 806, 810, 812, 815, 816, and 819) included in that report.

Comment #5: **Section 2.5:** The text states that a total of 52 soil gas samples were taken. Table 4-22 lists a total of 54 soil gas samples.

Response #5: The Tables, Text, and Figures have been cross-checked, verifying that 54 soil gas samples were collected. The text has been modified accordingly.

Comment #6: **Section 2.6, Reference Data Sets:** Presentation of background data for Soil and Groundwater should follow that of Sediment and Surface Water data sets as presented in their respective Appendices.

Appendix G: the 28 pages that comprise Table G-1 should be removed. The Table should contain only that data generated from the background sampling locations as listed in Table 2-5, specifically MW12-1, MW12-2, MW12-3, MW12-4, MW12-5, and MW12-6, SB12-7, SB12-8 and SB12-9, (discussion in Section 2.6 noted).

Appendix J: The 8 pages that comprise Table J-1 should be removed. The table should contain only that data generated from the background sampling locations as listed in Table 2-10, specifically MW12-1, MW12-2, MW12-3, MW12-4, MW12-5, and MW12-6 (discussion in Section 2.6 noted).

The SEAD-12 RI (Section 2.6 specifically) should only cite the *Seneca Army Depot Activity Background Soil Data* as a reference for further information.

Response #6: The text has been modified to present the data in a consistent order. Background data presented in Appendix G (Table G-1) are the site-wide data used to calculate TAGM values, this has been clarified in a footnote on the tables. This extensive site-wide background soil data set allowed that the samples listed in Table 2-5 be analyzed for radionuclides only (Table G-19). Tables 2-5 and 2-7 have been corrected to reflect the proper analyses completed. Appendix Table J-1A has been included to present the groundwater metals data from the six (MW12-1, MW12-2, MW12-3, MW12-4, MW12-5, and MW12-6) background monitoring wells in addition to site-wide background data.

Comment #7: **Section 2.7, Page 2-28:** The paragraph that begins "[t]hese potential release....." indicated that the areas are shown on Figure 2-8 and Figure 2-9. The Figures should be amended to include the Wastewater Treatment Plant.

Response #7: **Figure 2-8** and **Figure 2-9** have been reformatted to include the Wastewater Treatment Plan.

Comment #8: **Section 2.8.3, Groundwater:** How would low flow sampling provide more accurate data indicative of groundwater quality than conventional purging and sampling techniques. Primarily, are the monitoring wells at SEAD-12 constructed in such a way as to obtain optimal results specific to the technique of low flow sampling (nested wells with short screened intervals as compared to the present single monitoring wells with five to twelve foot screened intervals)? Wells such as MW12-7 (screened interval of ~12 feet) ideally should have had samples taken at varying depths of the screened interval to obtain a true representation of groundwater quality. A groundwater sample taken at 2 feet from the bottom of the well (16.4 feet BGS) would not be characteristic of the zone of groundwater located near the top of the screened interval (5.4 feet BGS). Groundwater data obtained to date may not be reflective of actual groundwater quality at SEAD-12 and review of low flow sampling practices and possibly, further groundwater sampling, is recommended.

Response #8: Low flow sampling was conducted at SEAD-12 in accordance with approved standard operating procedures. The field procedure described in the SOP and implemented at SEAD-12, and as noted in the EPA Low-Flow Sampling Guidance, obtains a more representative sample at a specific interval while creating a minimum of stress on the aquifer. Due to the relatively low hydraulic conductivities (approximately 10^{-4} $^{cm}/_{sec}$), seasonal water table elevation variations (variations to 10 ft, Table 3-2), and the general homogeneity of the aquifer, low flow sampling at SEAD-12 collects a representative composite sample of the screened/ saturated interval. The low flow sampling method results in a sample from the entire water column available while purging less volume. Thus, the sample collected is more indicative of formation water having lower turbidity and having be subjected to less aeration than would occur during sampling with bailers. Even when water table draw-down occurs in the low-yield surface/ water table/overburden shallow aquifer at SEDA, low flow sampling collects a sample from the highest yielding portion of the aquifer (which would be the preferred pathway of constituent movement).

Comment #9: **Section 4.1.1, Chemical Data:** The last paragraph discusses criteria for inorganics being based on site background values in soil. Although some of the TAGM values for inorganics only list SB (Site Background), the paragraph should make it clear that TAGM values for some inorganics list both a numerical value and SB.

Response #9: The text has been modified to reflect that some soil TAGM cleanup objectives may by based on NYSDEC numbers derived from State background concentrations, HEAST calculations (as for beryllium), or site background.

Comment #10: **Section 4.3, Potential Release Areas:** The text states that the nine potential release areas are included in Figure 4-1. The cited figure does not show the Waste Water Treatment Plant and should be amended to do so.

Response #10: **Figure 4-1** has been reformatted to include the Wastewater Treatment Plant potential release area.

Comment #11: **Section 4.3.2, Building 815, Building 816 and EM-28: Section 4.3.2.3** states that there were three surface samples (chemical parameters) associated with EM-28 but it is unclear which samples these were. Figure 2-11, Inset 2, should include EM-28 as well as surface soil sampling locations associated with it.

The text cites Table-4C as showing surface soil analytical data for all compounds detected in EM-28. The sampling locations listed in Table 4-C are MW12-29 and MW12-30 but Figure 2-10 identifies two surface soil sampling locations, SS12-234 and SS12-238, located within the EM-28 area. Are there actually four surface soil samples associated with EM-28? Where is the data presented for SS12-234 and SS12-238? Please clarify.

Response #11: Surface soil samples collected from each potential release area are listed in **Table 2-7**. For the Building 815/816/EM-28 area 48 surface soil samples were collected (**Figure 4-10**). These 48 samples include the five surface soil samples collected from the EM-28 area. Three samples collected from locations MW12-29 and MW12-30 (including a duplicate) were analyzed for both chemical and radiochemical parameters, while samples from SS12-234 and SS12-238 were collected for radiochemical parameters only. Table 4-C contains only chemical data, and therefore only the three samples associated with MW12-29 and MW12-30 are included. Radiochemical data for this area are presented in Appendix G, Table G-22.

Comment #12: **Section 4.3.2.4:** Seven sampling locations resulted in ten samples collected from the monitoring well borings and test pits related to EM-28.

Response #12: As noted above, and on **Table 2-5**, **Table 2-6**, and **Table 2-7** three surface and seven subsurface soil samples were collected for chemical parameters from soil borings and test pits. In addition to the three samples referenced above (**Table 2-7**), seven subsurface soil samples were

collected from the vicinity of EM-28: one from a soil boring (**Table 2-5**) and six from two test pit locations (**Table 2-6**).

Comment #13: **Section 4.3.3.2:** Test Pits TP12A-1 and TP12A-2 (Table 2-6) should be discussed in this section also. A total of ten samples were collected as a result of the RI and ESI investigations. Also, it should be stated that the four soil borings that were drilled resulted in fifteen samples to delineate the extent of the disposal pits.

Response #13: The **Section 4.3.3.2** text has been modified to include a discussion of the ESI test pits. Four subsurface soil samples were collected from test pits TP12A-1 and TP12A-2 during the ESI, with 6 additional TP subsurface soil samples collected during the RI (10 total). Sampling data is presented with the subsurface soil sampling results, including the soil boring information. The text and tables have been modified to avoid further confusion between surface and subsurface soils, and clarify that the test pit sampling results are presented with the subsurface soil results (there are not test pit surface soil samples). Subsurface soil samples associated with the soil boring delineation of the disposal pits are shown on **Figure 4-11** and listed in **Tables 2-5**.

Comment #14: **Section 4.3.3.5, Subsurface Soil Results:** Table 2-5 and Table 2-6 indicate a total of 44 subsurface samples associated with test pits and soil borings (including monitoring well borings) completed in the release area. Monitoring well identification MW12-28 is incorrect and should be changed to MW12-8. Is there a monitoring well designated as MW12-28 associated with SEAD-12?

Response #14: The text is correct in stating that 29 subsurface soil samples were collected from the Disposal Pits A / B potential release area soil borings, monitoring wells and test pits that were submitted for chemical (rather than radiological) analysis. These samples , as listed in **Table 2-5** and **Table 2-6** have been verified, confirming the number of subsurface soil samples collected from this potential release area.

There is no monitoring well MW12-28 associated with SEAD-12. The correct monitoring well reference is MW12-8.

Comment #15: **Section 4.3.3.5, Radionuclide Soil Results:** This section header should be changed to 4.3.3.6.

Response #15: The **Section 4.3.3.6, Radionuclide Soil Results** header has been corrected.

Comment #16: **Section 4.3.4.2, Test Pit Results:** The third paragraph states that soil samples were collected in the immediate vicinity of the stainless steel cylinder. These sample identifications should be

included in this section and a summary should also be included regarding the results of sampling done in the vicinity of the cylinder. To date the stainless steel cylinder and its contents are unknown, therefore a discussion should be included regarding future measures to be taken to characterize this cylinder and it's contents.

Response #16: The text of **Section 4.3.4.2** has been modified to discuss activities during both the ESI and the RI programs in the vicinity of Disposal Pit C. In addition, the sample location IDs for the three samples associated with the stainless steel cylinder have been added to the discussion (Location IDs TP12-4A, TP12-4B, and TP12-4C; **Table 4-H**). The sample results from the vicinity of the cylinder (TP12-4) are discussed further in **Section 4.3.4.4, Subsurface Soil Results**, with further plans for the removal of the cylinder discussed in **Section 8, Conclusions and Recommendations**. Tables 4-H, 4-J, G-9 and G-11 have been modified are reissued to reflect the changes samples fro TP12-4 and for TP12-23 (see comment below). Test pit logs in Appendix B provide a complete description of the sample locations (Test pit logs from the ESI program have been included in Appendix B).

Comment #17: **Section 4.3.5.1, Gamma Radiation Scanning Results:** The reference to Disposal Pit C in the first paragraph should be changed to Former Dry Waste Disposal Pit.

Response #17: The referenced paragraph was changed to properly reference the Former Dry Waste Disposal Pit.

Comment #18: **Section 4.3.5.3, Surface Soil Results:** The text states that fourteen surface soil samples were collected but Table G-10 lists only eleven.

Response #18: Data tables and sample data have been cross-checked to verify that only 11 surface soil samples were submitted for chemical analysis (**Table 2-7**) from the Former Dry Waste Disposal Pit potential release area. The text in **Section 4.3.5.3** has been updated accordingly.

Comment #19: **Section 4.3.5.4, Subsurface Soil Results:** The text states that the greatest frequency of exceedences occurred in sample TP12-23C. Section 4.3.5.2 states that only two test pits (TP12-25 and TP12-26) were excavated. From Figure 2-9 a test pit TP12-23 is located north of Disposal Pit C. It is now apparent that the TP12-23 data is in the wrong place. Remove the reference to TP12-23C from this section and modify the result summaries of Disposal Pit C and Dry Waste Disposal Area.

Response #19: As noted in Response #16, the three samples from TP12-23 (A, B, & C) have been reviewed and reclassified as part of the Disposal Pit C potential release area. Modifications have been made to the text and tables in Sections 2 and 4, and in Appendix G to reflect this reclassification. In

addition, human health and ecological risk assessments were redone to reflect the change to these sample locations. The text and tables associated with sections 6.0 and 7.0 for subsurface soils have been recalculated accordingly. As a result of this recalculation, the ecological risk previously reported for the Former Dry Waste Disposal Pit (COC of zinc) no longer exists.

Comment #20: **Section 4.3.5.4:** Table 2-5 and Table 2-6 identify forty subsurface samples.

Response #20: As explained in the response to comment #14, and #19, Table 2-5, 2-6, and 2-7 have been modified to properly present subsurface and surface sampling information. Based on these modifications and the noted reclassification of sample collection areas there were 38 subsurface soil samples collected from the Former Dry Waste Disposal potential release area.

Comment #21: **Page 4-33** To be consistent with the text and the data tables, the result summary headers should be changed from Disposal Areas A&B to Disposal Pit A/B Area.

Response #21: The text and/or tables will be changed so that the title is consistently Disposal Pit A/B.

Comment #22: **Page 4-38** To be consistent with the text and the data tables, the result summary headers should be changed from Disposal Area C to Disposal Pit C Area.

Response #22: The text and/or tables will be changed so that the title is consistently Disposal Pit C.

Comment #23: **Section 4.3.6.5, Radionuclide Soil Results (EM5):** The reference to the Dry Waste Disposal Pit area should be changed to EM5. Figure 2-13 only identifies two surface soil locations within the EM5 area. Please clarify.

Response #23: **Section 4.3.5.5** has been corrected to reference the EM-5 area rather than the Dry Waste Disposal Pit. The discussion related to the number of surface soil samples has been corrected, with **Figures 2-10**, **2-11**, and **Figure 4-20** showing the EM-5 surface soil sampling points, chemical and radiological. **Figure 2-13**, as noted in the figure title, shows only the recollected surface sample locations (SS12-103 and SS12-112 at EM-5) associated with plutonium sampling.

Comment #24: **Section 4.3.7.3, Surface Soil Results (EM-6):** The three surface soil samples collected were all a result of the monitoring wells in the vicinity of the EM-6 area. From the review of Figure 2-8 and Figure 2-12 the area in question is approximately 125 feet x 100 feet. The three samples are not indicative of surface soil conditions comprising the total area associated with EM6. Further surface soil sampling is recommended.

Response #24: The number of surface soils and the need for additional surface soil sampling at the EM-6 potential Release Area was reviewed based on site conditions. As noted, **Figure 2-8** and **Figure 4-22**, the three chemical characterization surface soil samples were collected downgradient of the geophysical anomalies (sampled with monitoring well installations). A review of the test pit analytical data (**Figure 4-23**) found two shallow soil samples collected from a depth of 0.5 feet, and therefore classified as subsurface soils. TP12-12A, sample number 123118, exceeds criteria for cobalt, iron, thallium, and zinc) at relatively low levels (the worst being cobalt 36.3 μg/g vs. criteria of 30 μg/g). The presence of chain-link fence (noted in the test pit log) probably accounting for the exceedences of cobalt and zinc in the area. Based on the surface and subsurface soil data, with only antimony (Figure 4-10, 3.2 μg/l with a standard of 3 μg/l), iron and manganese groundwater exceedences, indicates that additional sampling is not necessary. Conclusions and recommendations for additional sampling at EM-6 are discussed in more detail in **Section 8** of the Draft Final Report.

Comment #25: **Section 4.3.7.5, Radionuclide Soil Results (EM-6):** The reference to the Dry Waste Disposal Pit area should be changed to EM6. Figure 2-13 only identifies three surface soil locations within the EM6 area. Please clarify.

Response #25: As noted previously, the reference to the Dry Waste Disposal Area has been changed to properly list EM-6. As noted in the response to comment #23, **Figure 2-13**, as noted in the figure title, shows only the recollected surface sample locations (SS12-090, SS12-094, and SS12-099 at EM-6) associated with plutonium sampling, **Figure 2-10** and **Figure 2-12** show all the surface soil locations. Figure 4-18 shows all the surface soil samples with chemical exceedences, including those collected for radiological analysis only (the above listed locations were recollected).

Comment #26: **Section 4.3.8, Class III Areas:** This section should be subdivided to discuss each EM anomaly separately. Result summaries should also be presented separately in each section specific to the anomaly investigated. The way the data is presented in the text makes it unduly difficult to identify which exceedences relate to which area investigated.

Response #26: The class III area classification is primarily based on the very low potential for radionuclide sources to be present and ,with a few exceptions, the low probability for significant chemical impacts. The text has been modified, with additional figures included, to discuss specific areas with higher potential impacts (i.e. buildings 813/814) with more detailed reference to specific exceedences associated with various EM anomalies. To break this section up into a discussion of individual EM anomalies would still fail to address some areas, and result in still more sections making the document even more difficult to review.

Comment #27: **Section 4.3.9, Wastewater Treatment Plant:** A figure should be included in the section that identifies surface soil, sediment and surface water sampling locations in relation to the plant. Figure 4-2 identifies a "Waste Water Plant Outfall" but the text does not state whether any sampling was done in this area. The Wastewater Treatment Plant figure should include the location where the outfall enters the Unnamed Creek. There should also be a discussion regarding sampling in the vicinity where the outfall enters the Unnamed Creek. If no sampling was done, then it should be stated as a deficiency at the end of the section. There should also be a discussion as to rational for sampling performed to assess any downgradient impact to the Unnamed Creek or Reeder Creek from the Wastewater Treatment Plant?

Response #27: The downgradient sampling is discussed in the various surface water and sediment sampling sections. The sampling locations relative to the outfall have been clarified in the text and on the appropriate figures.

Comment #28: **Section 4.4.1:** The first paragraph on page 4-72 should be located below the section 4.4.1 header, not above it.

Response #28: The referenced text is located properly, however, in the original text the Section 4.4 header had been mistakenly deleted. The section header **" 4.4 SURFACE WATER RESULTS"** has been inserted in the revised text.

Comment #29: **Section 4.4.1, Surface Water Chemical Results:** Surface Water, Sediment, and Groundwater samples specific to potential areas of release should be presented and summarized within their respective sections.

Response #29: The separate presentations of chemical soil (surface and subsurface) and radiological results by potential release area was done to simplify the discussion of possible source areas. The text has been modified to briefly discuss these sample matrices by potential release area, with figures added to show the locations of surface water and sediment samples by individual release area (with surface soil samples). In addition, Figure 4-10 was added to show the relationship of groundwater exceedences to SEAD-12 and individual potential release areas. However, surface water, sediment and groundwater location results should be considered in terms of background, site, and downgradient locations, rather than by specific potential release areas, as these samples reflect migration pathways and the interrelationships between the potential release areas (upgradient locations to one release area is being downgradient to another). Finally, the number of samples of each matrix (surface water, sediment, groundwater) are statistically more representative of the entire site than a small area.

Comment #30: **Section 4.4.1.2, SEAD-12 Surface Water Results:** The last paragraph should include a discussion of the minor waterway located south of the Disposal Pit A, B, and C Areas (Fig. 4-8) and the impact to it as implied by the high Hg values found in SW12A-1, SW12A-2 and SW12-16. Or, if Section Four is modified, then this discussion should be included in the section pertaining to Class III areas.

Response #30: The results of the Hg exceedences in the minor waterway are referenced in the text and on Figure 4-6 in **Section 4.4.1.2**. The intent of **Section 4.4** is to present the data and show the locations of the exceedences. **Section 4.7.2** summarizes the extent of the impacts and the relationship between the exceedences and proximal potential release areas. The text of **Section 4.7.2.1** has been modified to further address the impact of mercury in the surface water in the unnamed creek south of the disposal pits.

Comment #31: **Section 4.5.1.3:** The eleven samples should be identified. Figure 2-17 does not identify the location of SWSD12-55, SWSD12-50, SWSD12-57 or SWSD12-58. The text should refer the reader to Figure 2-16.

Response #31: The text has been modified to make the correct reference to the eleven samples shown in Figure 2-16.

Comment #32: **4.6.1.2, SEAD-12 Groundwater Results:** The reference to Figure 2-5 is incorrect. Soil gas sampling locations as related to Building 813 are located in Figure 2-7 and soil gas locations SG12-147 and SG12-151 are actually located on the eastern side of Building 814, not Building 813 as stated in the text. The area of these two soil gas locations would seem to be a good place for a monitoring well as the values obtained from the two soil gas samples at this location would be as indicative of contamination as the 1708 ppb TCE found at the soil gas location SG12-121, in the vicinity of MW10-37 which has the 1600 ppb TCE in the groundwater sample. A discussion should be included regarding a possible source and further investigation is recommended to delineate the impact to groundwater.

There is no discussion regarding the two exceedences of Bis(2-Ethylhexyl)phtalate or the 67 metals exceedences listed in this section. This section of the document should include a discussion similar to that regarding exceedences at Buildings 813. A Figure, similar to Figure 4-6 for example, should be included in the document identifying groundwater sample locations as well as the location of exceedences.

Response #32: The reference to Figure 2-5 has been corrected to refer to Figure 2-7 showing the wells and the soil gas locations in proximity to buildings 813 and 814. The text has been changed to reference

building 814 rather than building 813 when describing soil gas locations of SG-147 and SG-151. The discussion of a potential source is included in **Section 4.7.2.1**. Recommendations for further work are presented in Section 8, with the upgradient soil and downgradient water MW12-30 found to be clean, there does not appear to be a need for additional wells at this time.

Figure 4-10 has been added to the document to show the locations of the groundwater anomalies. The discussion of a exceedence locations is presented in **Section 4.7.2.1**, with recommendations for further work included in **Section 8**.

Comment #33: **Section 4.7, Summary of Extent of Impacts:** This section presents figures only for Surface Water samples (Figure 4-7 and Figure 4-8). The same type of figures should be included for Surface Soil, Subsurface Soil, Sediment, and Groundwater.

Response #33: The inclusion of additional Figures, as noted above, figure numbers within the text have changed. The revision to this section references figures for surface water (4-5 and 4-6), sediment (Figures 4-7 through 4-9), and groundwater (Figure 4-10).

Comment #34: **Section 4.7.2.1, page 4-101:** The statement that no groundwater exceedences for heavy metals occurred is incorrect. Review of Table J-2 and section 4.6.1.2 indicate that there were several exceedences of heavy metals in groundwater. The statement should be corrected.

Response #34: The text and tables have been reviewed and modified to reflect the proper criteria for metals exceedences in groundwater. The exceedences of iron, manganese, and sodium are widespread and variable, and not considered to be extensively significant to the remediation requirements for the site. Antimony exceedences occurred only at three locations, with only the sample at MW12-39 significantly greater than the action level (MW12-26 and MW12-29 are less than 4 μ/L compared to the criteria of 3 μ/L).

Comment #35: **Section 4 Tables:** Table 4X should list the monitoring wells in numerical order. All tables should be reviewed and amended to list sampling locations in numerical order.

Response #35: By the nature of alphanumeric location identifiers assigned to sampling locations at SEDA, spreadsheet sorting programs sort the locations in alphabetical order making locations go in the order: MW-1, MW-10, MW-11, MW100, MW-2, MW-20, etc. A fly sheet will be added to the Section 4 tables section table key to explain the sorting.

Comment #36: **Section 5.1.1:** The third bullet associates a stainless steel cylinder with Disposal Pits A and B. Is this the same stainless steel cylinder discussed in Section 4.3.4.2 of the RI document? Please clarify.

Response #36: The discussion of physical site characteristics was moved forward in the document **to Section 1.3.2, Site History-Potential Release Areas**. Further review of the test pit logs confirmed that the stainless steel cylinder was located in a test pit associated with Disposal Pit C (TP12-4). The text and subsequent tables have been modified to properly reflect association with the description of materials found in the test pits of Disposal Pits A/B modified accordingly.

Comment #37: **Section 5.1.2:** This section should include a discussion of the minor waterway (Class III) located south of the Disposal Pit A, B, and C Areas (Fig. 4-8). Three Surface water samples (SW12A-1, SW12A-2 and SW12-16) exceeded criteria for Hg. Review of data tables and the Appendices reveal an impact to sediment and surface soil as well. Three surface soil samples (SS12-38, SS12-43, and SS12-52) and one sediment sample (SD12A-2) exceeded criteria for mercury in the vicinity of the un-named creek. There were other samples taken in the vicinity that did not exceed criteria but trace amounts of Hg were found. A discussion as to the source should be included in the document.

Response #37: The mercury results associated with the unnamed drainage ditch are presented in a figures discussed in Section 4.7. These exceedences are discussed further in Section 5.1.2, with conclusions and recommendations **presented in Section 8**. The surface soil exceedences for Hg (Figure 4-24), while present, are less than twice the regulatory criteria. As noted in Section 4.7, the extent of these anomalies, without any subsurface anomalies, suggests a source upgradient to SEAD-12.

Comment #38: **Figure 2-3** indicates an area with sporadic high conductivities whose southern extent is just north of EM-30 and whose northern extent is just east of EM-11. As it appears that this area is not affected by cultural interference, was the area inspected further? The document should describe this area and further investigation may be warranted.

Response #38: EM data contouring, as presented in **Figure 2-3**, is subject a variety of parameters (contour interval, color scales, smoothing and interpolation criteria) that ultimately impact the figure presented. A review of **Figure 2-3** as included in the draft report, the aerial photography, and discussions with the geophysicist who originally interpreted the EM data, concluded that the draft report figure was presented using a different set of contouring parameters which emphasized a number of surficial features that are not EM anomalies. A comparison of the draft figure to the revised **Figure 2-3**, included with the draft-final report, illustrates that when these contouring

adjustments are made the anomalies between EM-11 and EM-30 are removed while anomalies EM-24 (Disposal Pit C) and EM-25/EM-26 (Disposal Pits A/B) become more pronounced.

Comment #39: **Table 2-7:** This table should also include LOC_ID of monitoring wells used to obtain Surface Soil Samples.

Response #39: **Tables 2-5, 2-6** and **2-7** have been modified to properly reflect surface and subsurface soil sampling locations.

Comment #40: **Figure 2-8:** This figure should have an inset for Disposal Pits A&B as it is difficult to identify the location of soil borings and monitoring wells in this area. MW12A-2 should be included in the Figure. What is the monitoring well MW12-815?

Response #40: The figure has been modified as requested to include insets of the various locations. Additional figures have been added to **Section 4** to show locations of surface and subsurface soil samples by potential release area (which will include monitoring well and soil boring locations). MW12-815 (reported in some places as DW12-815) is a former drinking water well that was a preexisting well at this location. Well construction details for this well are not available, however field review and sample records show the well to be 8" in diameter and at least 84.5 feet deep.

Comment #41: **Figure 4-7:** The figure should reference Figure 2-15 (Sediment and Surface Water Sampling Locations) should the reader have any questions regarding the identification of SW sample locations as shown in figure 4-7.

Response #41: The surface water SVOC & Pesticide/PCB exceedence figure (Figure 4-5, formerly Figure 4-7) has been modified to cross-reference the sample location map (Figure 2-15), **Figure 4-5.**

Comment #42: **Figure 4-8:** The figure should reference Figure 2-15 (Sediment and Surface Water Sampling Locations) should the reader have any questions regarding the identification of SW sample locations as shown in figure 4-8. Also the text "**<Empty Picture>**" should be removed.

Response #42: The surface water metals exceedence figure (formerly Figure 4-8) has been corrected to remove the "Empty Picture" reference. **Figure 4-6** has been modified to cross-reference the sample location map (Figure 2-15)

Comment #43: **Figure 4-8:** LOC_ID SW12A-2 in the legend should also include Hg (0.08 µg/L)

Response #43: Typographical error on **Figure 4-6** (formerly Figure 4-8) has been corrected (Mg should have been Hg) for SW12A-2.

Comment #44: **Appendix G, Table G-8:** Table G-8 is incomplete (parameter identifications are missing) and the text at the bottom right of each page should be corrected.

Response #44: The header and row identification settings have been corrected for Table G-8, and are now shown correctly on each page, as are the footnotes.

Comment #45: **Appendix G, H, I, and J:** As a summary of data was presented in Chapter Four, Tables G-2 thru G-18 should be combined into two tables presenting all surface soil samples and subsurface soil samples in numerical order. Appendices H, I, and J should also be amended to present all data in numerical order.

Response #45: As noted above, by the nature of the spreadsheet program, and the use of Alphanumeric location identifiers, the samples are sorted in ascending alphanumeric order. This results in some differences from numeric order which are noted on the fly sheet to Appendix G. Due to the constraints of the sampling method, and with the addition of the figures showing sampling locations associated with each potential release area, it is believe that the full data presentation by potential release area is the most manageable. The proposed combination of data from the Appendix G tables will be considered in future reports.

Comment #46: **Appendix J:** The tables should reflect the fact that Class GA criteria for Thallium in groundwater is 0.5 µg/L. Table J-2 indicates several exceedences of samples taken on the second round of sampling (DEC-99). These include MW12B-2 (3.5 µg/L), MW12-9 (3.3 µg/L), MW12-10 (3.9 µg/L), MW12-14 (5.3 µg/L), MW12-15 (3.9 µg/L), MW12-16 (3.4 µg/L), MW12-17 (4.2 µg/L), MW12-20 (2.8 µg/L), MW12-24 (3.5 µg/L), MW12-26 (4.8 µg/L and 7 µg/L), MW12-38 (4.3 µg/L), and MW12-39 (5.3 µg/L). Section 4.6 of the SEAD-12 RI should discuss these exceedences.

Response #46: The Appendix J tables show Class GA standards, and therefore the referenced guidance level (0,5 µg/L) is not listed on the tables. For thallium this is complicated by the guidance level being lower than the detection limit (which ranges from 1.5 µg/L to 3.2 µg/L), showing that there are difficulties in obtaining an accurate analysis. When detected, Thallium values are qualified (J). Finally, the use of thallium in rodenticides may account for its widespread occurrence at the site

Comment #47: **Surface Water Sample Results:** Review of the data tables in Appendix I do not indicate where the data is located that was used to generate the Class C criteria as listed. For clarity, a

discussion should be included regarding the Class C criteria for surface water as well as the analytical data that was used for the determination of these values.

Response #47: The class C Criteria were taken from the 1998 reissue of the Ambient Water Quality Standards and Guidance and Groundwater Effluent Limitations, Division of Water TOGS (1.1.1). The data used for the calculated TAGM for copper and lead were calculated in accordance with the TOGS using a site average for hardness (216.38 mg/L). This value will be noted in the text and in association with the surface water tables.

Comment #48: Some of the Soil Boring Logs found in Appendix B should be amended to include the VOC Screen-PID and RAD Screen readings (i.e. MW12-4 and MW12-5).

Response #48: Inclement weather precluded direct readings for VOC scans during the drilling operations (moisture interferes with accurate readings), therefore, fixed measurements taken for these two soil borings. The referenced boring logs will be footnoted to reflect the field conditions. Soil samples from three depths were collected and analyzed from each boring based on depth (i.e. surface), description, and relative position of the sample to the water table.

SEAD-12 RI Report Comments (NYSDEC Radiation Section)

Comment #1: Page 2-18 indicates that for the grounds survey, a low energy gamma scintillation detector (FIDLER or equivalent) was used as the primary detector. Considering the other potential radionuclides of concern such as listed in Table 2-2 (Co-60, Co-57, Ra-226), wouldn't it have been prudent to perform the gamma surveying with both a low energy and a broad energy instrument? While a FIDLER or equivalent may be appropriate for looking for specific low energy nuclides, a properly windowed meter would not respond to the gamma components of the aforementioned radionuclides.

Response #1: The FIDLER equivalent detectors used an open window to detect the broadest range of energies possible for that instrument. The open window would have been capable of detecting the mentioned radionuclides. Considering the sampling results the selection of the detector seems to be a moot point. As reported, the ground surveys found contamination associated Radium paint on dials, with scanning results supported further by materials sampling

While the FIDLER will not detect Co-60 or Ra-226, it will detect low energy gamma associated with Ra-226 daughters (Pb-210, Bi-214). Co-57 emits photons at a number of low-energies and should be detected by the FIDLER. . Co-60 should be detected by beta particle detectors.

When designing future surveys instrument selection will continue to include the energy and type of radiation and the MDC for different instrument configurations.

Comment #2: Regarding the first comment, what was the energy window on the FIDLER probe (or equivalent) set at during the scanning of outside grounds? If the instrument was not windowed, then it would have been more appropriate to us a 2X2 NaI(Tl) probe due to better gamma detection efficiency.

Response #2: The FIDLER equivalent detectors used an open window to detect the broadest range of energies possible for that instrument. The instrument selection was based on experience at other locations, discussions with various personnel and least of all equipment availability. Alternative probe types will be considered when applicable during the design of future surveys.

Comment #3: Page 2-18, and in several proceeding sections inaccurately describes instruments as NaI(Ti). The appropriate designation for the instruments is NaI(Tl) for Thallium doped Sodium Iodide detectors.

Response #3: The referenced typographical errors related to the detector reference have been corrected.

Comment #4: Page 2-21, 2.3.4.5 indicates that exposure rate surveys were performed using either a Bicron Micro-Rem meter, or a Ludlum Model 19 Micro-R meter. While these instruments may seem comparable, it is well documented that Sodium Iodide based Micro-R meters such as the Model 19 tend to over-respond at lower energies, causing falsely elevated readings in environmental surveys. The Bicron Micro-Rem meter is a plastic scintillator based survey meter with a flat energy response over a broad range (20keV and up) of energies including many of the nuclides mentioned in comment #1. Therefore, comparisons of survey results between Micro-Rem, and Micro-R meters may be questionable.

Response #4: The comment is noted. Daily field calibrations of the Sodium Iodide based Micro-R meters was completed to confirm the counting rates. However, field investigations failed to detect elevated reading with either instrument and no comparisons are made between the two instrument as these were used to monitor daily personal exposure related to that days work. As with other instruments the response and calibration characteristics will be considered when implementing future surveys.

Comment #5: The removal action that took place outside of building 819. Was that a radium compass or similar device? It is recollected from previous conversations with Parsons staff that this may have been the area.

Response #5: The removal action that occurred outside of Building 819 was conducted by the SEDA TAT, consisting of additional scanning and the collection of a soil sample to confirm the hot spot. No device was found. Sample collection removed a volume (approximately 5 gallons) of soil with follow-up scanning showing no residual elevated readings. The results of sampling prior to, and post, sampling are reported in **Table 4-3**.

Comment #6: References to DEC's applicable TAGM are mistakenly referenced as TAGM 4006 instead of TAGM 4003.

Response #6: The mistaken reference has been corrected.

Comment #7: The soil DCGL's for SEAD-12 are broken down into areas of concern (apparently according to MARSSIM classification or operable units). This is unusual and unnecessary considering the driver behind DCGL's is potential future land use. In most cases, site specific DCGL's are used in all areas regardless of classification. The MARSSIM roadmap indicates that DCGL's should be established before classification of areas by contamination potential and/or site history.

Response #7: SEAD-12 was divided into separate areas of concern and MARSSIM classifications based on past history and limited results from ESI investigations. The scanning and sampling criteria were developed based on the conservative design for a final status survey. DCGL calculations are independent of the MARSSIM classification, but used to judge whether the surveys were adequate for the area. Factors having specific impacts on the DCGL calculations (RESRAD, Version 5.82) that may vary for each potential release area include: the area, thickness, and length of the contaminated zone parallel to aquifer flow; saturated and unsaturated zone factors; occupancy; and plant factors.

As noted in Table 4-1, the minimum potential release area DCGL value calculated for each isotope, was applied to all of SEAD-12 areas. Table 4-1 also shows the calculated DCGL values to be similar between areas for each radionuclide (tritium showing the most variation).

While the MARSSIM roadmap does indicate that DCGLs be established before the classification is done, this is an iterative process which can be bypassed of there is sufficient historical data to make the classification. The risk being that either the initial survey be classified too high and an excessively detailed be completed, or alternatively, that the area be classified too low and the survey have insufficient detail and have to be repeated. It was felt that for the SEAD-12 potential release areas that sufficient information was available. As noted in the report, a portion of Disposal Pit C was reclassified to a Class 1 area based on test pit results.

Comment #8: Since this RI may be used as a final radiological status survey, it would be advantageous to summarize the radiological results in a conclusion section.

Response #8: The radiological results are summarized for each potential release area in **Section 8.0, Conclusions and Recommendations,** which has been added to this report.

NYSDOH Comments Dated July 31, 2000

Comment #1: It would be helpful to summarize results for each study area and make recommendations and/or state that based on RESRAD or other analysis, no further study is required and therefore that the area can be released for unrestricted use, if the US Army so chooses.

Response #1: A Conclusions and Recommendations section has been added, **Section 8.0**, to the Draft-Final version of the RI report.

Comment #2: Section 1.3.3 – Previous Investigations, Page 1-11: While it is stated correctly in other sections, it is stated here that the cleanup criteria of New York State (DEC) is 90 mRem/yr and the proposed federal limit under 10 CFR 834 is 182 mRem/yr. The NRC decommissioning and decontamination exposure limit for unrestricted residential use is 25 mRem/yr. While the general public exposure limit is 100 mRem/yr. As noted, the agreed upon limit for this site is the NYDEC TAGM 4003 of 10 mRem/yr.

Response #2: The reference to radiation clean-up criteria has been removed in avoid ambiguity between Section 1.3.3 and others, as well as confusion between current accepted clean-up criteria and those believed to be in effect at the time of the ESI investigation.

Comment #3: Section 2.3.4.2 - Ground Survey Instrumentation, Page 2-18: Contrary to what is listed in the document, the Ludlum Model 19 micro-R meter does not detect, no less measure low energy Beta emissions. It also is not appropriate to interchange data obtained with the Ludlum Model 19 and the Bicron microRem meter. The Ludlum meter utilizes a 1"x1" NaI(Tl) crystal, which when calibrated with Cesium-137 over-responds to low energy gamma radiation. In addition, low energy gamma radiation associated with Plutonium-239 or Americium-241 would not be detected.

Response #3: The comment is noted. The text has been modified based on this comment to reflect the capabilities of the Ludlum Model 19 or micro-R meter. The used of these meters will be reviewed for future surveys with the instrument selected according to its application.

Comment #4: As a follow-up to the previous comment, the stated efficiency for the Bicron FIDLER at 1.8%, a scanning MDA of 151,843 dpm/100cm2 and a static MDA of 16, 645 dpm/100cm2 appears to be inadequate or perhaps the efficiency was miscalculated. Previous experience with this probe would indicate that efficiencies greater than 20% are reasonable.

Response #4: The scanning efficiency for the Bicron FIDLER units have been verified, with reported values based on the field efficiencies calculated during daily source checks. Based on field performance and the use of twice background for a flag value the instrument, the FIDLER instrument efficiency for field scanning surveys is not an issue. Instrument efficiencies and instrument selection will be verified for future scanning surveys.

Comment #5: Table 4-1 – Soil Derived Concentration Guideline Levels: Why are the DCGL's for the same isotope different for various locations, when the clean up level remains 10 mRem/yr? Why are backgrounds for the same isotope at the same location different (i.e. Building 819/ bkg. soil)?

Response #5: The cleanup level is designated by NYSDEC TAGM-4006 as 10 mrem/yr. The DCGL that was calculated using (RESRAD 5.82) for each potential release area is a soil concentration that translates to a maximum dose of 10 mrem/yr at that specific location. For a given land use scenario, the four major parameters that are specific to each location (Appendix E, Table E-2) are: depth to bedrock, depth to undisturbed till, area of the contamination, and the length of the contaminated zone parallel to the aquifer. When DCGLs are modeled using RESRAD, these parameters are the primary cause of the differences between locations. Background variations noted are related to calculations associated with the Wilcoxon Rank Sum Test and are not chemical background values.

Comment #6: Tritium analysis for background soils range from approximately 0.1 to 60 pCi/g. A wide range indeed. Given that the soils are analyzed both as surface and subsurface soils, how are the background values assigned?

Response #6: Background locations were selected based on a site history, with SEDA records showing no evidence of radioisotopes being handled at that specific location. The surface soil sample that detected 60.4 J pCi/g H^3 is a duplication of an 0.1 UJ pCi/g surface soil sample collected at the ball-field. The data is below the DCGL (80 pCi/g), and the value was checked against the original data and found to be valid.

Comment #7: The DCGL's for tritium in soil range from 80 to over 200 pCi/g for soil, depending on the location, including the reduction by a value of 10 for the RESRAD model. However, a sample at building 815/816 exceeded 300 pCi/g or at least 2 to 3 times background without further study or acknowledgement in the text that the DCGL was exceeded. Since this building housed an area that

loaded or unloaded tritium and the potential for environmental contamination existed, further study may be warranted unless explained. While tritium values in pCi/g are required for RESRAD, it would be helpful to know the concentration in ground water in pCi/l.

Response #7: The highest soil value for H^3 in the Building 815/816 area was 203 pCi/g, the DCGL for residential for this area was calculated as 204pCi/g, with the worker DCGL at 1731pCi/g. As noted on Tables 4-6, 4-7, and 4-34, tritium values are statistically above background for this area, however the data set meets the statistical test (Wilcoxon Rank Sum test) when compared to background plus the residential DCGL. A review of the data (SS12-234 is in the EM-28 area), combined with the scanning data indicates that further investigation is not warranted.

Comment #8: Numerous locations indicated higher levels of Pb-210 without comparative values associated with Radium-226 or Radon-222 progeny. If the premise is made that these values are attributable to glazes, pottery or other domestic products, then a table comparing Pb-210 to stable lead compounds from the same sample would go a long way to convince everyone that the Pb-210 is not the result of army activities and or the analysis did not misidentify the isotope or other progeny of uranium 238/234.

Response #8: Table 4-24, Radiological Exceedence Summary - Surface and Subsurface Soils, shows that areas where Pb-210 statistically exceeds background correlate very well with those areas where Ra-226 exceeds background, the exceptions being Building 819/EM-27 (with no Ra-226 exceedence) and EM-6 with no Pb-210 exceedence.

Response to November 6, 2000 Comments
By
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Draft Remedial Investigation Report (RI) at SEAD-12 Seneca Army Depot,
Romulus, New York - May 2000

The New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation (NYSDEC) comments offered in addition to those transmitted via the August 1, 2000 letter from NYSDEC to SEDA regarding DRAFT Remedial Investigation Report at the Radiological Waste Burial Sites (SEAD-12) Seneca Army Depot, May 2000, Site ID No. 850006.

SEAD-12 RI Report Comments (NYSDEC Federal Projects Section)

Comment #1: **Figure 4-6**, *Sediment Locations Where NYSDEC Sediment Screening Guidance Standard Exceeded for Metals* was quite useful with the addition of the sidebar listing the metals that were exceeded at a particular location. However, the figure could alleviate much of the anxiety raised by the abundance of exceedences shown by including the concentration for each of the metals at each of the locations in the sidebar. This would also eliminate the necessity of flipping back and forth between tables and the figure.

Response #1: The total number, and different combinations, of metal exceedences in sediment at the various locations would make the presentation of all the sediment data cumbersome. The figure was intended to show the relationships between the exceedences at the different locations and not absolute values. on a figure intended to show relationships between metals and exceedences across the site. More detailed presentations of the data on figures will be considered in future documents

Comment #2: The symbol "Ch" on Figure 4-6 should be defined or corrected. Also, for SD12-32, Sn, which is tin, is listed in the sidebar. There is however no NYSDEC sediment criteria for tin.

Response #2: In **Figure 4-6**, the symbol "Ch" at SD12A-1 has been corrected to properly read "Cr" (Chromium). Similarly, the symbol "Sn" has been corrected to properly read "Sb" (antimony). There were no exceedences for Cr and samples were not analyzed for Sn.

NYSDOH Comments Dated October 31, 2000

Comment #1: Section 4.0 – Nature and Extent of Impacts: Can the consultant suggest an explanation for the widespread presence of thallium in the various media at SEAD-12?

Response #1: The widespread presence of thallium is the result of resulting from interferences associated with the analysis for thallium. This results in a criteria which is generally below the level of accurate analysis.

Comment #2: Tables 4-S, 4-T, 4-V, and 4-W, Can the consultant explain why the average values found for some of the analytes listed in these tables exceeds the maximum values listed? In the case of Tables 4-V and 4-W the rows of the average column seem to be offset from the corresponding rows in the maximum value column by two places

Response #2: Average values exceed averages in the referenced tables as a result of data qualification and the way the averages are calculated. The sample average is calculated using all points where results are reported. For samples where results are qualified with a "U" (undetected), one-half of the reported value is used to calculate the average.

The alignment of the summary statistics with the proper rows in Table 4-V and 4-W has been corrected.

Comment #3: Monitoring Well MW12-27: According to Table J-2 located in Appendix J, the maximum values found for arsenic, cadmium, cyanide, lead, and silver in groundwater were all found in monitoring well MW12-27. Each of the contaminants exceeds its NYS Class GA standard at this particular location yet monitoring well MW12-27 does not appear to be associated with any of the potential release areas listed in Section 4.3. Additionally, none of these results are summarized in Table 4-35, Exceedence Summary – Surface Water, Sediment, and Groundwater.

Cadmium is reported at a concentration of 80,300 μg/L, which is over 8000 times greater than its standard. Silver is reported at 34,800 μg/L, which is 700 times greater than its standard, and lead is reported at 12,300 μg/L, which is almost 500 times its standard. I was unable to find an explanation of these incredible levels in the text of this document. Furthermore, it appears that exposure to these metals in groundwater was not evaluated in the human health risk assessment.

Response #3: Table J-2, Table 4-X, and Table 4-35 have been reviewed and revised as necessary, the metal values referenced above being the result of a data presentation error. When configuring Tables J-2 and 4-X for the report, a blank cell in a table (the analysis for 2,2'-oxybis(1-Chloropropane), a parameter determined for the six 1994 samples) was deleted with the subsequent cells in the table shifted up. This shift resulted in false exceedences for the metal values referenced. While this error was diagnosed and corrected during the interpretation of exceedences listed in Table 4-35, and prior to processing the data for the human health risk assessment, the draft RI failed to correct the table in the referenced appendix. The raw data for this sample (Sample #122230; sample date- Dec 3, 1999; SDG 76226) will be made available at your request.

Response to Comments
From
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY - REGION 2

Draft Remedial Investigation Report (RI) at SEAD-12 Seneca Army Depot,
Romulus, New York - May 2000

Comments Dated: August 22, 2000
Date of Comment Response: December 8, 2000

The general comments address concerns that pertained to the entire document. The specific comments address concerns for individual sections.

GENERAL COMMENTS-Remedial Investigation

Comment #1. Although the report generally conveys the results of the RI in a systematic manner, it is difficult to find information concerning field observations that may indicate potential data gaps. For example, the text in Section 4.3.4.2 describes foreign items found in test pits TP12-3 (debris below the water table) and TP12-4 (stainless steel cylinder). Information such as this should be provided in a summary section or table.

Response #1. Table 4-2, which is referenced in the text, lists the debris found in the various test pits. The text has been modified to reference the table when appropriate. Table 4-2 also has been modified to expand the explanations of the anomalies and their investigations.

Comment #2. The electromagnetic survey interpreted an anomaly (EM-43) north of Building 815 as a transformer. Three surface soil samples (SS12-66, SS12-67, and SS12-68), one monitoring well (MW12-40), two subsurface soil samples (from MW12-40 boring at 2-4 feet and 4-6 feet), and one sediment sample (SD12-32) were collected from this area. However, test pit investigations were not conducted in this area. If there is a transformer below the surface in the location of EM-43, it would be a possible source of PCB contamination. Further investigation or excavation of this area should be considered.

Response #2. The transformer is located above the ground. This has been clarified in Table 4-2 in association with the description of the EM anomalies. Test pits were not warranted for the investigation of this anomaly.

Comment #3. Section 4.3 presents the results of the RI for each potential release area in SEAD-12. Test pits were excavated at many of these potential release areas. Surface soil and subsurface samples were also collected from the potential release areas. It is assumed that samples collected from

within the test pits are considered to be subsurface samples. However, it is not clear from the text if this is the case. This issue should be clarified.

Response #3. The text and tables in Section 2 and Section 4 have been modified to clarify that all test pit samples are subsurface soil samples. In addition, figures have been added to **Section 4** to further clarify the locations of the test pit samples.

GENERAL COMMENTS - Human Health

Comment #1. One major concern relating to the Human Health portion of this Draft RI Document is that exposure parameters used for the human health exposure assessment could not be verified. Reference to an EPA document published in 1993 was provided with the tables found in Section 6.8. This document, "Superfund's Standard Default Exposure for the Central Tendency and Reasonable Maximum Exposure" was published in 1993 as a preliminary review document. It is the opinion of the reviewers that these exposure parameters were superceded by information provided in the 1997 Exposure Factors Handbook. The most up-to-date references for exposure factors should be used for this risk evaluation.

Response #1. The updated exposure factors have been used (1997 update Exposure Factors Handbook) where they are different from the 1993 document. The 1993 data is still listed as the primary reference where there has been no change or where the 1993 factors provide the most conservative assessment of risk to human health. These references will be updated in future documents

Comment #2. A check of the toxicity values used revealed that the HEAST version referenced in Table 6-7 has been updated. The HEAST Tables referenced were 1995. HEAST Tables were updated in 1997.

Response #2. Although the HEAST Tables were updated in 1997, the toxicity values did not change from those published in 1995. The 1997 update primarily focused on summary table updates while the actual toxicity values did not change.

Comment #3. The radiological risk slope factors presented in Table 6-7B and referenced from HEAST do not all correspond to the updated version of HEAST available at www.epa.gov/radiation/heast. Please verify the slope factors presented in this table with the most up-to-date version of HEAST.

Response #3. The updated radiation HEAST Table was reviewed at the referenced internet page. While there have been some amendments to the tables since 1995, the slope factors have remained unchanged.

Comment #4. The soil to skin adherence factor (AF) used in the human health risk assessment was 1.0 for all chemicals in all scenarios. However, more recent guidance suggests an AF of 0.08 mg/cm^2 for adults and 0.3 mg/cm^2 for children (USEPA, 1997a.). While an AF of 1 is more conservative, using this value has the potential to overestimate risks from the dermal pathway. This potential overestimation of risk should be discussed in the Uncertainty Section of the risk assessment.

Response #4. Agreed, using an AF of 1 is more conservative for the calculation of dermal pathway risk. The comments and assumptions for the use of this factor are provided in Appendix L Table l-3. This potential for the overestimation of risk will be discussed in more detail in **Section 6.5.3.5** Uncertainty Pertaining to Dermal Risks from PAHs in Water.

Comment #5. There were no toxicological profiles provided for the COPCs or ROPCs selected. EPA guidance recommends inclusion of toxicological profiles in risk assessments. Toxicological profiles for COPCs and ROPCs should be included as an appendix to the document.

Response #5. The Army acknowledges that toxicological profiles are needed to document the potential impacts of chemicals on human and ecological populations. However, the Army does not believe it is necessary or appropriate to include the profiles in each report that contains discussions of human health and ecological risk assessments. To do so would add up to 300 to 500 pages to the appendices of each report. The addition of the amount of paper to each report does not seem to be consistent with another recurrent comment from all parties involved in the Seneca Army Depot Activity Program that all of the reports are too voluminous, and that the Army should endeavor to streamline each report to the fullest extent possible.

Therefore, if the USEPA strongly believes that the availability of hard-copy toxicological profiles is necessary, the Army would consider issuing a separate document that would contain toxicological profiles for the chemicals that have commonly been found at the Depot. This stand alone document would serve as a global, background reference for all subsequent submissions containing discussions on human health and ecological risk assessment. As necessary, data and information contained in the separate toxicological profile addendum would be updated to reflect changes that are occurring in the continuing toxicological research. This approach would be less costly overall, and it would reduce the size of all subsequently submitted reports containing discussions on risk assessment. If the USEPA does not strongly believe that the hard-copy is needed, the Army would submit that the references currently provided in the document are adequate to address the source of the information.

Comment #6. Several spelling and grammatical errors were found as well as many partial sentences. The references section is disorganized with references listed both as "EPA" and "USEPA," and not arranged in chronological order. The document needs an editorial review.

Response #6. Spelling and grammatical errors have been corrected during the review and revision of the document while responding to comments. In addition, the references have been corrected to "USEPA" and arranged in chronological order.

Comment #7. The document is large and cumbersome. Typically, for a document of this size, an Executive Summary is provided to present a concise description of the site, the purpose and conclusions of the RI. As the documents are intended for public review, an Executive Summary should be a worthwhile addition.

Response #7. **Section 8 - Summary,** has been added to the document to present the conclusions from the RI. Revisions to Section 1 have been made to provide a more concise description of the site and purpose for the RI.

GENERAL COMMENTS--Ecological Risk Assessment

Comment #1. The sequence of steps performed in this ecological risk assessment (ERA) appears to be out of order. According to the RI, detected concentrations were compared to screening values and then food chain modeling was performed on contaminants whose concentrations exceeded the screening values. A comparison to background and an evaluation of frequency of detection was then performed for contaminants whose hazard quotients (Has) were greater than one. Valuable time and resources could have been saved if the background and frequency of detection analyses were performed directly after the screening and before the food chain modeling. The Process Document (EPA, 1997) states that the beginning of step 3 should be a refinement of the COPCs. This refinement typically includes a comparison to background, elimination of essential nutrients, analysis of frequency of detection, and a discussion of bioavailability. Many contaminants could have been eliminated from the ERA at this stage reducing the amount of costly food chain modeling necessary. The sequence of steps presented in the Process Document (EPA, 1997) should be closely reviewed and followed in future ERAs.

Response #1. Comment acknowledged. There have been substantial differences between EPA Regions and State agencies interpretations of the Process Document since it was first published in 1997. While the steps described in the comment might have an effect on the time and resources necessary to completing the screening level ERA, the outcome and conclusions would remain the same. However, in lieu of this comment, future ERAs for Seneca will follow the sequence outlined above.

Comment #2. Several COPCs are eliminated from further consideration due to a frequency of detection of less than 20 percent. The general rule of thumb regarding frequency of detection is that it can be used as a screening tool if the sample size is at least 20 samples and the frequency of detection is less than 5 percent. In general, the use of low frequency of detection as justification for

eliminating COPCs from further consideration is discouraged unless the frequency of detection is less than 5 percent.

Response #2. It is assumed that comment #2 is referring to the problem formulation section of the ERA. In general, the less than 5% detection rule is used to determine if a contaminant on site should be considered a COPC, not whether a COPC should be considered a chemical of concern based on food-web modeling. The discussion in the problem formulation section did at times refer to chemicals with low frequencies of detection (at levels sometimes greater than 5%), but this was not intended to be the sole argument for why chemicals were not carried further in the risk assessment, just additional support of why they need not be considered further.

Comment #3. It would be useful if figures were included in the ERA showing the locations in each media of all of the COPC detections that exceed background and for which the Ha values exceed one. This will help to clarify the justification of excluding or including specific COPCs as COCs based on frequency of detection and/or magnitude of detection. For example, if a COPC is being eliminated based on a low frequency of detection even though Has greater than one were calculated, it would be useful to know if all of the detections were in the same location or if they are scattered across the site. If they are all in the same location, an interim measure (IM) may be possible. Including figures for each media sampled should be considered for future versions of this report.

Response #3. Additional figures have been added to the document, Section 4, showing the locations of soil exceedences for each of the potential release areas. Given the few numbers of exceedences and the limited number of locations where Ha values exceed one, additional figures are not necessary.

Comment #4. There is no conclusions and recommendations section of this RI. Although it is stated in Section 7.7 that further investigation of limited removal actions in soil and sediment may be warranted, the overall recommendations of this RI are not clearly stated. An overall conclusions and recommendations section should be added to this RI.

Response #4. A Summary section has be added to the Draft Final version of the RI.

SPECIFIC COMMENTS-Remedial Investigation

Comment #1. Section 3.4.3.Page 3-22. first bullet item. The bullet provides the value for the geometric mean of hydraulic conductivity. The value stated in this bullet is 1.6 feet/day; however, the value provided in Table 3-3 and Section 3.4.2 is 2.61 feet/day. This discrepancy should be reconciled.

Response #1. The hydraulic conductivity values have been recalculated, with discrepancies between the tables and the text resolved.

SPECIFIC COMMENTS--Human Health

Comment #1. Page 6-32. Section 6.2.4. The first paragraph on this page states that "the maximum value was used as the EPC, if it exceeded the 95% UCL." However, this practice is contrary to EPA guidance regarding selection of EPCs. Guidance recommends that the lower value of the maximum and the 95% UCL should be used as the EPC. Review of Table 6-3A indicates that, in fact, the lower of the two values was used as the EPC. The text on page 6-32 should be corrected.

Response #1. The referenced text has been modified per this comment.

Comment #2. Table 6-5A. Exposure Factors Assumptions. The inhalation rate for the current site worker receptor is not correct. According to the USEPA, 1997, Exposure Factors Handbook, the correct inhalation rate for the moderately active, adult male is 15.2 m^3/day, not 9.6 m^3/day as listed in Table 6-5A.

Response #2. Disagree. The Exposure Factors Handbook was reviewed (Chapter 5). The inhalation factor of 15.2 m^3/day is based on a 24-hour day, while the 9.6 m^3/day factor referenced in Table 6-5A, as noted, is representative of 1.2 m^3/hour for an 8-hour work day. The 15.2 m^3/day would be applicable to an adult resident, for which a more conservative value of 20 m^3/day was used.

Comment #3. Page 6-107. Section 6.3.5.9. The first sentence on this page indicates that acetone is the only compound listed on the previous page whose t* value is less than the exposure time of one hour. According to values listed on Page 6-106, toluene also has a t* value of less than one. Please revise the text appropriately to reflect this value.

Response #3. The text has been revised in accordance with this comment.

Comment #4. Pages 6-153. 154. 155. The text of the document indicates that nine exposure routes were evaluated for the Child Recreational Visitor for all areas of the SEAD- 12.

Response #4. There are 9 exposure routes evaluated. Five pathways were evaluated for chemical exposure, two pathways were evaluated for both chemical and radiological exposure routes, and one route, direct exposure, was evaluated for radiological exposure only. Refer to Table 6-3 for further clarification. This response is applicable to comments below, with modifications made to the text to clarify the differences between the tables.

Comment #5. There are eight exposure routes evaluated and presented in Tables in 6-8. Please clarify the actual number of exposure routes evaluated.

Response #5. The exposure routes listed in **Table 6-8** and **Table 6-9** are associated with carcinogenic and non-carcinogenic risks for chemical exposures and not radionuclides. Radionuclide risks are listed in **Table 6-10** through **Table 6-15**. Combined risks are listed in **Table 6-16**.

Comment #6. Page 6-156. The text of the document indicates that three exposure routes were evaluated for the Off-Site Wader. **Table 6-9D** presents information on only two exposure routes, with only one pathway being complete. Please clarify the actual number of exposure routes evaluated.

Response #6. See response #5, the third pathway (not listed on the table) is for direct exposure to radionuclides, **Table 6-15**.

Comment #7. Risk Tables. Appendix L. A number of tables presenting the risk calculations were not included with the document. The following receptors and routes were not provided in Tables.

a. Table L-8, Future Resident -Risks Associated with Inhalation of Groundwater while showering. Tables are not presented for any area of the SEAD-12.

b. Table L-4F, Future Outdoor Park Worker, Future Recreational Visitor- Risks Associated with Dermal Contact to Surface Water. Tables are not presented for any area of SEAD-12.

Response #7. This was a printing error. The corrections have been made and new tables have been issured.

Comment #8.. Risk Tables. Appendix L. Dermal contact hazard indexes and cancer risks for several receptors have not been transcribed properly from the Risk Tables in Appendix L to the presentation of the risk values in section 6.8. Please correct this or provide an explanation.

Response #8. This was a typological error. The risk values have been corrected and new tables have been issued.

SPECIFIC COMMENTS--Ecological Risk Assessment

Comment #1. Section 7.2.2.2.1. Page 7 -10. This section discusses the identification of soil COPCs. The first paragraph of this section lists the sources of soil screening values used in this ERA. It is unclear why New York Technical and Administrative Guidance Memorandum # 4046 (TAGM) values were not included in this list. State screening values are used for the surface water screening and the sediment screening so it is unclear why state values are not being used for soil screening. All applicable state screening values should be used in the screening level ERA.

Response #1. Disagree. Previous discussions with DEC indicated that it was not necessary to use TAGM values when screening for soil COPCs. Implicit of this were comments received on another Seneca ERA (SEAD 4) from Richard Koeppicus (Hazardous Waste Site Evaluation Unit, Bureau of Habitat, Division of Fish, Wildlife and Marine Resources) dated January 19, 2000. In brief, there were no objections raised as to the sources of the soil screening values used, just a request to submit full references. The sources used in that report were the same as those used in the SEAD 12 report.

Comment #2. Section 7.4. Page 7-20. This section discusses the screening level exposure estimate. It is stated in the last paragraph of this section that for sediment metal COPCs, partitioning coefficients (Kd) were used to estimate pore water concentrations in sediment samples. Biota sediment accumulation factors (BSAFs) should be used for metals in sediments instead of using an equilibrium partition method due to the high degree of uncertainty involved with equilibrium partitioning. Sources and/or methods of calculation should be provided along with the BSAF values. The U.S. Army Corps of Engineers Waterways Experiment Station website (http://www.wes.armv.miIQ is a potential source for BSAF values.

Response #2. Disagree. While it is acknowledged that BASFs are preferred over partition coefficients to estimate uptake of metals to higher trophic levels, the availability of BASFs are quite limited. Additionally, the use of BASFs for metals and BCFs for organics introduces additional uncertainty and inequality in the uptake models in that BASFs estimate uptake from sediment for the metals while BCFs estimate uptake from water for the organics. Therefore, the most efficient, conservative and consistent method for estimating uptake of metals is to use the partition coefficients.

Comment #3. Section 7.6.2. Page 7 -36. This section discusses the identification of COCs in sediment and surface water. The last paragraph on this page discusses why aluminum was not identified as a COC. It is stated that because mean Has are less than 10 for the heron and because the bioaccumulation model is likely to overestimate body burdens in the heron, aluminum is not considered a COC in sediment. Has of less than 10 and uncertainty in the food chain model is not adequate justification for excluding contaminants from consideration as COCs. The threshold for further investigation based on Ha values is one, not ten, and the fact that both max Has were over 30 indicates that there may be some hot spots of aluminum in sediments that could warrant an IM. Although uncertainty in modeling is unavoidable to a certain degree, the fact that the bioaccumulation model has the potential to overestimate risk should not be used as justification for eliminating aluminum from consideration as a COC. Aluminum should be identified as a COC in sediment at SEAD-12 and should be considered in any future investigations.

Response #3. Disagree. While there may be some uncertainty in the argument that Has over 30 do not warrant further investigation, one other important consideration for aluminum not discussed in the original report is the basis the TRVs used in the food-chain modeling. The screening values used are based on aluminum chloride, a highly water-soluble form of aluminum that is unlikely to occur at SEAD 12. Other forms of aluminum have a much lower bioavailability, and are unlikely to generate ecological risk. Based on this information and the results presented in the original report, aluminum should not be considered further in subsequent steps of the ERA.

Updated Response to Specific Comment #4 on the Human Health Risk Assessment
From
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY - REGION 2

Draft Remedial Investigation Report (RI) at SEAD-12 Seneca Army Depot,
Romulus, New York - May 2000

Comments Dated: August 22, 2000
Date of Original Comment Response: February 2, 2001
Date of Updated Comment Response: February 13, 2001

SPECIFIC COMMENTS--Human Health

Comment #4. Pages 6-153. 154. 155. The text of the document indicates that nine exposure routes were evaluated for the Child Recreational Visitor for all areas of the SEAD- 12.

Response #4. The number of exposure routes listed for the various receptors is inconsistent throughout the draft version of the RI. The replacement version of Section 6 issued February 13, 2001 has been updated to ensure consistency and clarification of the number of exposure routes evaluated for each receptor.

Figure 6-3 has been updated to show the total number of exposure routes for each receptor and those exposure routes evaluated for chemical constituents of concern (COCs) and those evaluated for radiological COCs. For the Child Recreational Visitor, a total of eleven exposure routes were evaluated. These are:

1. Inhalation of Dust (chemical and radiological);
2. Ingestion of Soil (chemical and radiological);
3. Dermal Contact of Soil (chemical);
4. Direct Exposure of Soil (radiological);
5. Dermal Contact/Submersion of Surface Water (chemical and radiological);
6. Direct Exposure of Surface Water (radiological);
7. Ingestion of Groundwater (chemical and radiological);
8. Inhalation of Groundwater (chemical);
9. Dermal Contact/Submersion of Groundwater (chemical and radiological);
10. Dermal Contact of Sediment (chemical); and
11. Direct Exposure of Sediment (radiological).

For most exposure routes, both chemical and radiological COCs were assessed. Dermal contact of soils and sediment were only evaluated for chemical COCs. For radiological COCs, dermal exposure was evaluated through direct radiation exposure to sediments and soils. For surface water and groundwater, dermal contact for chemical COCs (or submersion for radiological COCs) was assessed. Direct radiation exposure to surface water and groundwater for radiological COCs was also assessed.

Inhalation of groundwater was evaluated only for chemical COCs, since only volatile COCs are considered in assessing impacts from this exposure route.

Response to Comments From New York State Department of Environmental Conservation

Draft Final Remedial Investigation Report (RI) at SEAD-12
Seneca Army Depot,
Romulus, New York, January 2001

Date of Comments: July 30, 2001
Date of Comment Response: November 8, 2001

The New York State Department of Health (NYSDOH) has reviewed the response to comments on the above referenced report. Comments are as follows:

Comment #1: Contrary to response #32, the reference to Figure 2-5 has not been corrected to refer to Figure 2-7 nor has Building 813 been changed to 814 when describing soil gas locations SG-147 and SG-151, as requested in comment #32 of NYSDEC's August 1, 2000 letter.

Response #1: The reference to Figure 2-5 and Building 813 in section 4.6.1.2 has been changed to Figure 2-7 and Building 814, respectively.

Comment #2: Contrary to response #33, the revision to Section 4.7 does not include a reference to Figure 4-10.

Response #2: A reference to Figure 4-10 has been added to Section 4.7.2.1 to address groundwater exceedences.

Response to Comments From United States Environmental Protection Agency - Region 2

Subject: Draft Final Remedial Investigation Report (RI) at SEAD-12
Seneca Army Depot,
Romulus, New York, January 2001

Comments Dated: June 28, 2001

Date of Comment Response: November 8, 2001

At the end of February 2001 we received your response to our comments of August 2000 on the above-subject report. Please find our follow up comments below.

All of our comments have been addressed by your response. However, there are a few additional comments below for your consideration. Furthermore, based on the unusual process followed for the Ecological Risk Assessment (ERA), we are currently seeking additional input from our regional Biological Technical Assistant Group (BTAG), which will be forwarded to you under a separate letter.

Additional Comments:

Comment 1: Comment 5 of the Human Health Section: Table 6-8A shows only eight exposure scenarios and excludes the Ingestion of Sediment route for the Child Recreational Visitor that was identified in Table 6-5A.

Response 1: The recreational child visitor may ingest soil and sediment from drainage ditches at/near the site during the visit. We assume the total amount of soil ingested during a visit remains the same no matter what (soil or sediment) is ingested. Therefore, the sum of the soil fraction ingested (FI_{soil}) and sediment fraction ingested ($FI_{sediment}$) should be 1. Otherwise, the total risk presented in Table 6-8A would double count the risks via soil ingestion. Since the drainage ditches only occupy a small portion of the site where risks were evaluated, ingestion of soil is expected to be much more significant than ingestion of sediment. In addition, ingestion of sediment was evaluated for the future residential child and resulted in cancer and noncancer risks within EPA's acceptable ranges. The exposure frequency for a recreational visitor to sediment is much lower than that for a residential child; therefore, no significant risk is expected for a recreational visitor (child) via ingestion of sediment. Based upon the above discussion, sediment ingestion is not a significant exposure route and only the soil ingestion risk is presented in this report. The sediment ingestion scenario for the child recreational visitor has been deleted from Table 6-5A.

In addition to addressing EPA's comments, we have updated our risk assessment of the dermal exposure route according to the USEPA's Dermal Risk Assessment Interim Guidance (1999), which represents the current knowledge of dermal risk assessment. The following major changes have been included:

(1) We have updated the soil dermal absorption factor according to the USEPA (1999) guidance. Risks associated with semivolatile organic compounds have been added to the risk evaluation by using a default value of 0.1 as the dermal absorption factor.

(2) The dermal RfD or cancer slope factor has been updated according to the USEPA's recommendations (1999).

(3) The permeability coefficients for compounds in water (Kp) and lag time per event (τ) have been updated.

(4) The RME values for soil and water dermal contact (e.g., skin surface area, soil adherence factor) have been updated according to the 1999 guidance.

Assessment of risks via groundwater inhalation during showering/bathing event has also been updated using the event duration values recommended by the dermal risk assessment guidance report (USEPA, 1999) for the showering/bathing scenario.

The revised human health risk assessment does not significantly affect the results of the human health risk assessment.

Comment 2: Comment 1 of the Ecological Risk Section: The position presented to you in our aforementioned comment letter was not totally accurate. EPA Region 2 Ecological Risk Assessment (EPA) process is more accurately presented below.

In a standard Screening Level Ecological Risk Assessment (SLERA), contaminants of concern (COCs) are eliminated by comparing site concentrations with conservative toxicologically-based numbers. This was properly done for SEAD-12 SLERA, but the use of additional components in screening COCs was not performed with proper EPA consultation. Further refinement of the COCs can be performed to help streamline the overall ERA by evaluating additional components on the SLERA. With EPA consultation, the following components from the refinement stage of Problem Formulation may be included. However, if any contaminants are identified for exclusion in the SLERA based in the following two supplemental components, then bioaccumulation, biomagnification, and bioconcentration of each contaminant must be evaluated as well.

In order to properly utilize the methods of background comparison and frequency of detection to screen COCs from the SLERA, the following issues must be discussed and described:

Supplemental Component 1: Background

Background concentrations of contaminants are those concentrations that are found in areas surrounding a site, but are not released by the site. Contributions to these contaminant concentrations come from two major sources: Natural (geological ambient concentrations of chemicals in the

environment not influenced by human activity) and ambient or anthropogenic (concentrations present due to human activities such as automobile activity or pesticide dispersion in farming areas). Contaminants of concern are removed through comparison with toxicological benchmarks. Background levels cannot generally be used to remove contaminants of concern however, they can be effectively used to focus the baseline assessment as needed. An example of the application of the background is a mining site with high levels of naturally occurring background metals due to geological formations.

Issues that must be discussed:

Consideration of background in screening assumes that background levels have been properly determined.

1. Discuss potential toxicity of any contaminants identified as background (particularly when toxicity benchmarks are lacking and when contaminants are above benchmarks).

2. Discuss potential for interactive effects among chemicals considered as background and those COCs to be further investigated.

3. Clearly list and discuss the criteria by which contaminants are considered either background or site-related.

4. Provide the following information on the background samples: the number of samples, sampling locations, and sampling results.

Supplemental Component 2: Frequency and magnitude of detection

Use of this component presumes the sampling plan met EPA Guidance for Data Usability in Risk Assessment (USEPA 1992) requirements. In particular, the sampling plan must characterize the full range of variability and distribution in the data and satisfactorily meet requirements for completeness, comparability, representativeness, precision, and accuracy.

Issues that must be discussed:

1. Discuss influence of random/biased sampling on frequency and magnitude of the distribution of detected values.

2. Discuss spatial and temporal pattern of contaminants identified as low frequency and/or magnitude.

3. Discuss how risk-based detection limits compare with benchmarks.

4. Discuss the relationship of *detected* values with benchmarks.

After consultation with the EPA, the information described above can be included in the SLERA to select COCs.

Response 2: The ecological risk assessment, in particular the section refining contaminants of concern (Section 7.6), has been revised according to Comment 2 and EPA's Supplemental Ecological Risk Assessment Guidance: The Role of Screening-Level Risk Assessments and Refining Contaminants of Concern in Baseline Ecological Risk Assessment (June, 2001). The following issues have been discussed in Section 7.6:

- Background sampling results are presented in the draft final report (Table M.106 through M.109). A background soil sampling location figure has been added in Appendix G. Details of background database have been added to Section 7.6.1.1.1.

- The Draft Final RI has been revised so that an estimate of the incremental risk over background was calculated for all naturally occurring COPCs. This was accomplished by (1) calculating a hazard quotient (HQ) for each COPC based on the maximum and mean detection of the COC; and (2) calculating an HQ for each COPC based on the maximum and mean detected background concentrations using the same equations. The incremental risk over background due to site contamination was then calculated by subtracting the background HQ from the site HQ to derive an incremental HQ that reflects the actual risk to the receptor (Tables M.106 through M.108). Since the receptors have naturally adapted to site background conditions, the COPCs that have incremental HQs greater than one are the compounds that are likely to pose a significant risk to the receptors. Therefore, COPCs that have incremental HQs greater than one were further evaluated in the ERA.

- Discussions of potential toxicity, frequency and magnitude of detection, and dietary requirement information of COPCs have been included in Section 7.6

The data used in the baseline human health risk assessment and screening-level ecological risk assessment were validated in compliance with EPA Guidance for Data Usability in Risk Assessment (USEPA 1992) requirements. The data usability section (Section 6.2.2) covers the discussion of completeness, comparability, representativeness, precision, and accuracy.

In addition, revisions have been made to the Draft RI Report for SEAD-12 in responding to EPA's comments dated 8/9/01 and additional consideration of the document by the Army. These revisions include the following:

- The text has been revised to reflect that SLERA (including Steps 1 and 2 of ERAGS) and an additional step to refine contaminants of concern (as part of Step 3 of ERAGS) have been presented in the RI report.

- The SLERA has been revised so that all chemicals that have initial hazard quotients greater than one were further evaluated and only excluded as a COC if additional information could be found that justified their elimination (Section 7.6).

- A biota uptake pathway has been included in the SLERA to evaluate risk to top aquatic predators such as the largemouth bass.

- Some NOAEL and LOAEL toxicity values have been revised to ensure consistency in how the uncertainty factors were applied (Tables M.40 through M.43).

- Surface water concentrations, if available, were used in place of the pore water concentrations estimated from the sediment concentrations in evaluating tissue concentrations in Trophic level 2. Exposure of the great blue heron via biota (Trophic level 2) uptake was then evaluated. Pore water concentration estimates were used where surface water data were lacking while the chemical concentration was detected in sediment. This revision is based upon the fact that surface water concentrations are more appropriate for evaluating tissue concentrations in Trophic level 2.

The Army would like to note that the refinement of COCs beyond the screening level presented in this document was not done to circumvent consultation with EPA. Rather this was done to present the Army's input up front. We are happy to discuss the findings of this screening risk assessment with you in the near future.

Response to Comments From United States Environmental Protection Agency - Region 2

Subject: Draft Final Remedial Investigation Report (RI) at SEAD-12
Seneca Army Depot,
Romulus, New York - January 2001

Comments Dated: August 9, 2001
Date of Comment Response: November 8, 2001

Following up our comment letter of June 28, 2001 regarding the subject document, I am forwarding you the comments resulting from the consultation with our Biological Technical Assistance Group (BTAG) regarding the Ecological Risk Assessment (ERA) for SEAD-12.

The following comments represent the consensus of the Region II Biological Technical Assistance Group (BTAG) review. The document reviewed by the group was the Section 7 of the Draft Final RI Report: Ecological Risk Assessment," dated December 2000 for Seneca Army Depot Activity site located in Romulus, Seneca County, New York.

Comment 1: It appears that there is some confusion associated with the Superfund Ecological Risk Assessment Guidance (Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessment Interim Final [U.S. Environmental Protection Agency, Environmental Response Team, Edison, NJ, June 5, 1997] or ERAGS guidance) based on the information presented in the Ecological Risk Assessment. It is indicated that the screening-level ecological risk assessment (SLERA) involves Steps 1-3 of ERAGS and at the completing of Step 3 it is determined whether or not to proceed with further evaluation. However, according to the 8 step procedure documented in ERAGS, the SLERA is considered a part of the first two steps and prior to Step 3 is where it should be decided that there are adequate data to conclude that the ecological risks are negligible, that the data are not adequate to make a decision, or that there is potential for an adverse ecological effects and a more thorough assessment (baseline ecological risk assessment) is warranted. Therefore, Step 3 should be considered the beginning of the baseline ecological risk assessment (BERA).

Response 1: It is agreed that the SLERA presented in the Draft RI Report for SEAD-12 is comprised of Steps 1 and 2 as described in ERAGS. An additional step was taken to refine contaminants of concern as part of Step 3 in accordance with EPA's supplemental ERAG guidance (June 2001) and EPA's comments dated June, 28, 2001. The text has been revised to reflect that SLERA (including Steps 1 and 2 of ERAGS) and an additional step to refine contaminants of concern (as part of Step 3 of ERAGS) have been presented in the RI report.

The Army has chosen to go ahead and provide this additional step, providing information to support the elimination or retention of COPCs. We understand that ERAGs recommends a Scientific Management Decision Point (SMDP) prior to starting the baseline risk assessment process. The Army's inclusion of Step 3 in the RI is not an attempt to circumvent the SMDP, but rather to provide

our input up front. We are happy to discuss the adequacy of the data with respect to the findings of the screening risk assessment with EPA and propose to do this in the near future.

Comment 2: The elimination of contaminants of concern (COCs) was documented in Section 7.6. Some of the contaminants were eliminated based on the fact that the hazard quotient calculated was below 10. However, in accordance with the "Framework for Ecological Risk Assessment" (EPA/630/R-92/001, February, 1992), a hazard quotient less than one means that there is a low potential for adverse ecological effects from site contamination. A hazard quotient greater than one indicated that an effect threshold has been exceeded (i.e., receptor exposure to contamination exceeds known benchmarks) and there is the potential for risk to the receptor. Additionally, COCs should not be eliminated based on background concentrations on the ecological risk assessment. Naturally occurring levels of analytes may add stress to receptors' cumulative exposure.

Response 2: Section 7.6 has been revised so that no COCs were eliminated on the basis that their calculated hazard quotient was less than 10. All COCs that have initial hazard quotients greater than one were further evaluated in accordance with EPA's supplemental ERA guidance (2001) and only eliminated if additional information could be found that justified their elimination (such as alternate toxicity information, site-specific sampling data, and alternate bioconcentration factors).

Section 7.6 has been revised so that an estimate of the incremental risk over background was calculated for all naturally occurring COCs. This was accomplished by calculating a hazard quotient (HQ) for each COC based on the maximum and mean detection of the COC and then using these same equations to also calculate a HQ for each COC based on the maximum and mean detected background concentrations. The incremental risk over background due to site contamination was then calculated by subtracting the background HQ from the site HQ to derive an incremental HQ that reflects the actual risk to the receptor (Tables M.106 through M.108). Since the receptors have naturally adapted to site background conditions, the COCs that have incremental HQs greater than one are the compounds that are likely to pose a significant risk to the receptors. Therefore, COCs that have incremental HQs greater than one were further evaluated in the ERA. In addition, issues such as potential toxicity of contaminants identified as below background, frequency and magnitude of detection, and dietary requirement information have been included in Section 7.6

Comment 3: The conceptual model provides an illustration of the potential exposure pathways. According to the model, the primary exposure pathway for a largemouth bass is the ingestion of surface water and for amphibians it is direct contact to surface water. The biota uptake pathway for the bass and amphibians may also represent a significant exposure. Since this pathway may be mostly dominated by the invertebrate community, it may be appropriate to also conduct an evaluation of the invertebrate community.

In Section 7.5.1.2 the risk evaluation of ecological risk associated with surface water involves largemouth bass. The risk calculation for the bass only includes a comparison of surface water

concentration to the toxicity reference value (TRV). As indicated previously, the biota uptake pathway may be a significant exposure route and should be included in the risk calculations.

Response 3: The sediment invertebrate community was evaluated in the SLERA by comparing sediment benchmarks to site sediment concentrations (Table M.30). The sediment benchmarks are based on observed adverse effects on the sediment invertebrate populations as a result of exposure to known levels of contaminants. Although the calculated HQs for some of the COCs are greater than one when looking at exposure to the maximum detected concentrations, HQs are generally below or near 1 when using the mean concentration. Only copper, manganese, nickel and zinc have calculated HQs slightly greater than 1 (3.21, 2.35, 2.15 and 1.99, respectively) when using the mean concentration. If the maximum detected concentration is eliminated from the mean concentration calculation, all HQs are below 1 (i.e., the mean concentration is skewed for these COCs by a single data point). Therefore, sediment invertebrate populations are not thought to be at risk at a result of the detected levels of COCs in the sediments and therefore do not present a significant risk to fish and amphibians via this exposure pathway.

To evaluate risk to top aquatic predators such as the largemouth bass, estimated tissue concentrations in the largemouth bass (as a result of uptake via the food chain) were compared to NOAEL tissue concentrations in upper trophic level fish. The estimated tissue concentrations in fish were calculated based on equations provided in the USEPA guidance document entitled: "Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, August, 1999". NOAEL tissue concentrations were obtained from the US Army Corps of Engineers Environmental Effects Residue Database (ERED), available on the Army's website. Results of this comparison are presented in Table M.103. Similar calculations were conducted for amphibians, however, comparable tissue concentrations for amphibians are lacking; therefore, the risk to amphibians via this exposure pathway could not be quantified. Estimated amphibian tissue concentrations are presented in Table M.105.

In addition, revisions were made to the Draft RI Report for SEAD-12 in responding to EPA's comments dated 6/28/01 and additional consideration of the document by the Army. The major additional modifications include the following:

- Some NOAEL and LOAEL toxicity values have been revised to ensure consistency in how the uncertainty factors were applied (Tables M.40 through M.43).

- The sediment ingestion scenario for the Child Recreational Visitor has been deleted from Table 6-5A in responding to EPA's comment dated 6/28/01.

- Assessment of risks via the dermal exposure route has been updated according to the USEPA's Dermal Risk Assessment Interim Guidance (1999), which represents the current knowledge of dermal risk assessment. The revised risk assessment results the same

conclusion that only the future resident at the site (the three potential risk areas) exhibits risks of cancer above the EPA target risk range. The following major changes were included:

(1) We have updated the soil dermal absorption factors according to the USEPA 1999 guidance. Risks associated with semivolatile organic compounds have been added to the risk evaluation by using a default value of 0.1 as the dermal absorption factor.

(2) The dermal RfD or cancer slope factor has been updated according to the USEPA's recommendations (1999).

(3) The permeability coefficients for compounds in water (Kp) and lag time per event (τ) have been updated.

(4) The RME values for soil and water dermal contact (e.g., skin surface area, soil adherence factor) have been updated according to the 1999 guidance

- Assessment of risks via groundwater inhalation during showering/bathing has been updated using the event duration values recommended by the dermal risk assessment guidance report (USEPA, 1999) for the showering/bathing scenario.

- Surface water concentrations, if available, were used in place of the pore water concentrations estimated from the sediment concentrations in evaluating tissue concentrations in Trophic level 2. Exposure of the great blue heron via biota (Trophic level 2) uptake was then evaluated. Pore water concentration estimates were used where surface water data were lacking while the chemical concentration was detected in sediment. This revision is based upon the fact that surface water concentrations are more appropriate for evaluating tissue concentrations in Trophic level 2.

Response to Comments from United States Environmental Protection Agency

Subject: Final RI Report for SEAD-12
Seneca Army Depot
Romulus, NY

Comments Dated: December 28, 2001

Date of Comment Response: February 11, 2002

General Comments - Human Health

Comment 1: The response to our comment regarding the ingestion of sediment route of exposure for the child recreational visitor is accepted.

General Comments - Ecological

BTAG

Comment 1: Our two main concerns with this document is the discounting of background concentrations, i.e. the subtracting out of background soil hazard quotients (HQs) from site hazard quotients and the absence of tissue data from the baseline screening assessment. It is unclear whether background data were collected as per EPA "Guidance for Characterizing Background Chemicals In Soil at Superfund Sites" (EPA 540-R-01-003). The potential effects of soil background concentration on biota may be discussed in the uncertainty section and the risk management section of this document, but should not be subtracted out of the actual calculation of risk. As noted in the August 3, 2001 BTAG memorandum, COCs should not be eliminated based on background concentrations in the ecological risk assessment. Naturally occurring levels of analytes may add stress to receptors' cumulative exposure. Further, because the majority of the soil data is discounted it would have been useful to collect earthworm tissue to use in the modeling for the insectivore (shrew). This would have been especially useful as the shrew proved to be the most sensitive organism (e.g. showed the highest level of risk) for the majority of soil contaminants at most of the areas of concern.

Response 1:

(1) The final RI report has been revised as a result of the EPA comments and a discussion among Parsons, the Army, EPA (including Region II BTAG), and NYSDEC during a conference call on 1/29/02 (see attached meeting note). Major changes are discussed in this response. The incremental risk information has been removed from the RI report. In Section 7.6 of the ecological risk assessment, COCs are no longer eliminated based on the background concentrations. Rather, a risk management section (Section 7.7) has been added to present the Army's position that when background is the major contributor to elevated HQs for COCs, these COCs do not warrant further evaluation. The previous Section 7.7 (Summary)

has been renumbered as Section 7.8. The background information and discussion has been added to Section 7.7 to support the Army's management position.

(2) The soil background concentrations for metals (including the mean and the maximum values) are based upon a background dataset that has been compiled from 57 soil samples collected from 20 locations at different depths. The background samples were collected within the Seneca Army Depot Site but from areas unrelated to site releases during the various site investigations conducted at the Seneca Army Depot (SEAD 25 RI, 25 ESIs, the Ash Landfill, and the OB Grounds). These background samples were combined into the background database so that statistical evaluation of the data would be representative of the variations in site soils. The background values calculated from this background dataset are representative of background of the Seneca Army Depot Site and have been assigned as background for all the sites at the Seneca Army Depot. The background data set and the locations from which the data were collected are provided in Appendix G. The above background information has been added to Section 7.7 (Risk Management). It should be noted that as the background information is used to support the risk management, the background discussion has been included in Section 7.7 instead of the uncertainty section as requested by EPA.

(3) "Guidance for Characterizing Background Chemicals In Soil at Superfund Sites" (EPA 540-R-01-003) was published in June 2001. The review of the document suggests that the overall background characterization complemented at the Seneca Army Depot (e.g., sampling, comparison with the site data) is in compliance with the USEPA approach. For example, the background samples were collected from areas unrelated to the contaminant release. The above discussion has been added to Section 7.7.

(4) Tissue sampling is not required for the screening level risk assessment according to the Ecological Risk Assessment Guidance (ERAG; USEPA, 1997). Since it is the Army's position that adequate data exist to make a risk management decision at this point in the ecological risk assessment step (Step 3.2), no tissue sampling is being proposed. This proposal was discussed with EPA Region II BTAG during a conference call on 1/29/02.

To conclude, the Army believes that the site wide background levels have been properly determined and are representative of the site background condition. The final RI has been revised to incorporate the comments from EPA. Site background of the COCs is the main contributor to the ecological risk at the site. For the compounds with the site concentrations consistent with the background concentrations, the Army proposes that no additional assessment is needed and that the elevated HQs calculated in the screening level ERA are due to concentrations similar to those found in background. Tissue sampling will not be conducted as the ecological risk assessment ends at Step 3.2.

Comment 2: BTAG Comment 3 indicated the need to consider the biota uptake pathway for bass. Although it is indicated in Figure 7-1 that biota were considered as the principal pathway for

quantitative evaluation, it is unclear how biota were included in the fish tissue concentrations presented in Table M.103. The complete reference for the biota concentration factor (BCF) and food chain multipliers (FCM) should be provided. It may have also been useful to collect fish tissue data to use for the bass assessment endpoint and the blue heron model.

Response 2: The biota intake was considered and modeled using the approach recommended by EPA (40CFR, Final Water Quality Guidance for the Great Lakes System, Final Rule, 1995), which is to multiply BCF and FCM to evaluate tissue concentration in the higher level of the food web. The biota concentration factors were estimated using the equation BCF=10^(0.76*logKow-0.23) (Lyman et al., 1982, as cited in Sample et al., 1996). The food chain multipliers are from the Water Quality Guidance for the Great Lakes System (USEPA, 1995; Table B-1). Tables M.99 and M.103 have been revised and full references have been added to the tables. As discussed in the response to General Comment 1, tissue data are not required for the ERA presented in the RI report.

GANNETT FLEMING

Comment 3: The revised ecological-risk assessment incorporated many of the prior EPA comments, including the BTAG comments. The initially selected chemicals of concern (COPCs) are not compared to background concentrations. However, background concentrations are considered in the final COC selection. Also, hazard quotients are calculated on background concentrations with an incremental risk evaluation performed. Conclusions on whether further evaluation is necessary, with the exception of Aroclor 1254, appears to be based predominately on the use of the background incremental risk. It is not clear that this was discussed with the EPA Region 2 BTAG.

Frequency of detection is used in the initial screening of chemicals of potential concern. Prior EPA comments pointed out that this step is part of the refinement of chemicals of concern not a component of the initial screening.

Response 3: As stated in the response to General Comment 1, Parsons has revised the final RI report after consulting the EPA Region II BTAG. The incremental risk information has been removed from the RI report. In Section 7.6 of the ecological risk assessment, COCs are not eliminated based on the background concentrations. Rather, a risk management section (Section 7.7) has been added to present the Army's position on whether further evaluation is warranted. For the compounds with site concentrations consistent with the background concentrations, the Army proposes that no additional assessment is needed and that the elevated HQs are due to the concentrations similar to those found in background.

The Army has been somewhat confused with respect to its direction from EPA regarding the use of background and frequency of detection. EPA comments have not been consistent on these issues. Previous EPA comments dated August 22, 2000 read: "According to the RI, detected concentrations were compared to screening values and then food chain modeling was performed on contaminants whose concentrations exceeded the screening values. A comparison to background and an evaluation of frequency of detection was then performed for contaminants whose hazard quotients (Has) were greater than one. Valuable time and resources could have been saved if the background and frequency of detection analyses were performed directly after the screening and before the food chain modeling". We believe our conference call on 1/29/02 has clarified EPA's position on these issues. With respect to frequency of detection, it has never been used in the initial screening of chemicals of potential concern in the RI report (either the draft or the final version). All the constituents that failed the screening test (either by exceeding the benchmark values or not having a benchmark value) were carried through the HQ calculation. Frequency of detection was addressed in Section 7.6 (Further Refinement of Concern) to support the decision of the refinement of chemicals of concern. Therefore, no change has been made to the report regarding this issue.

Comment 4: As indicated in the Army's response to comments, some toxicity reference values (TRVs) have been adjusted. The intent of the adjustment was for better consistency in applying the conversion factors. Some errors were found with these adjustments that are then carried forth into the HQ calculations. For example, the heptachlor bass TRV should be $7x10^{-6}$ mg/kg/day instead of the presented $7x10^{-2}$ mg/kg/day. The conversion factor was not applied correctly. Also, the Aroclor 1254 avian NOAEL TRV should be 0.1 mg/kg/day instead of 1.0 mg/kg/day. The total conversion factor was not calculated correctly.

Response 4: Agreed. The conversion factor was not applied correctly for the TRV of the heptachlor bass. Table M.44 has been revised so that the conversion factor is applied correctly. In addition, we consulted the AQUIRE and updated the heptachlor effect dose for the bass. This resulted in an updated TRV of $1x10^{-4}$ mg/L. The related HQ calculation sheet (Table M.102) has been revised accordingly.

The Aroclor 1254 avian NOAEL TRV presented in Table M.40 is correct (1.0 mg/kg/day). However, the total conversion factor was not calculated correctly. The total conversion factor has been corrected.

Comment 5: It is not clear why Aroclor 1254 in Group E soil is no longer a COC recommended for additional study as it was in the draft ecological risk assessment. The shrew hazard quotient is 22 with the surface soil maximum detected concentration and 3 with the mean detected concentration. The shrew hazard quotient is 100 with the 0-4 ft soil maximum detected concentration and 7 with the mean detected concentration.

Response 5: The reason that Aroclor 1254 is not a COC is presented under Section 7.6.2.1. Generally, the assumptions used in the assessment are very conservative (e.g., BAF) and if more realistic data are used, all the HQs for surface soils are lower than 1 with the exception of the NOAEL associated with the maximum concentration. For mixed soils, the alternative BAF resulted in a LOAEL mean HQ lower than 1 (0.19) and a NOAEL mean HQ slightly exceeding 1 (1.9). The TRVs for Aroclor 1254 that were used to calculate the HQs are based on a LOAEL for old field mice where Aroclor 1254 was fed to the test animals for 12 months and reproductive effects were noted. Although the NOAEL was developed by applying an uncertainty factor of 10 to this LOAEL, the true NOAEL may be only slightly lower than the experimental LOAEL, particularly if the observed effect is of low severity (Sample et al., 1996). The data review referred to in the ERAG (USEPA, 1997), which is used to support the use of the uncertainty factor of 10, indicates that 96% of chemicals included in the review had LOAEL/NOAEL ratios of five or less, and that all were ten or less. Therefore, using an uncertainty factor of 10 may result in an overestimation of the HQs. Based on the above discussion, Aroclor is not considered as a COC for further evaluation.

Comment 6: The use of one-half the detection limit in the calculation of the mean causes the mean to exceed the maximum detected concentration for some parameters. To avoid such occurrences, detection limits greater than two times the maximum detected value for a given analyte should have been removed from the data set prior to calculating the mean.

Response 6: EPA BTAG was consulted regarding this issue on 1/29/02. The BTAG suggested that this comment should be more appropriate for the human health risk assessment. Therefore, the mean calculation for the ecological risk assessment has not been revised.

Comment 7: Aroclor 1254 was not selected as a COC because of a discussion on page 7-39. This discussion specifies that a BAF different from the one used in the calculation of the HQ would be more appropriate. This BAF should have been used in the revised tables. The revised HQ should then be presented on the summary tables. The text contends that the revised HQ would be below one but the summary tables present shrew HQs above one. The conclusion for no further evaluation would be better supported if the text and tables were consistent.

Response 7: The tables present the HQ results from the screening-level risk assessment (SLERA, Steps 1 and 2), where conservative assumptions were used in compliance with the USEPA ERAG. Step 3 (under Section 7.6 – Further Refinement of Contaminants of Concern) evaluates the potential ecological effects by looking at the alternate or more reasonable assumptions and their effects on the HQ results. For Aroclor 1254, although the SLERA results in a maximum HQ exceeding 1, when the alternate BAF is used, all the HQs for surface soils are lower than 1 with the exception of the NOAEL associated with the maximum concentration. For mixed soils, the alternative BAF resulted in a LOAEL mean HQ lower than 1 (0.19) and a NOAEL mean HQ slightly exceeding 1 (1.9). A table has been added to the text to summarize the comparison of the HQs based on the different BAF assumptions.

Comment 8: It does not appear as if there was sufficient dialogue with the EPA Region 2 Biological Technical Assistance Group (BTAG) when making these revisions. Conclusions on whether further evaluation is necessary appears to be based predominately on the use of the background incremental risk. It is not clear that this was discussed with the EPA Region 2 BTAG.

Response 8: As noted in the response to General Comment 1, the final RI report has been revised as a result of the EPA comments and a discussion among Parsons, the Army, EPA (including Region II BTAG), and NYSDEC during a conference call on 1/29/02. Some of the major changes made to the ecological risk assessment section include: (1) the removal of the incremental risk information; (2) the revision of Section 7.6 so that the COCs are refined based on information other than the background concentrations; (3) the addition of a risk management section (Section 7.7) to present the Army's position on whether further evaluation is warranted; and (4) the addition of the background information and discussion to Section 7.7. As a conclusion of the risk management section, for the compounds with the site concentrations consistent with the background concentrations, the Army proposes that no additional assessment is needed and that elevated HQs calculated are due to the concentrations similar to those found in background.

Specific Comments - Ecological

BTAG

Comment 1: A table which shows how background HQs were calculated (i.e. background HQs used in Tables M.106- 108, based on short-tailed shrew) should be provided.

Response 1: Agreed. The background HQs were calculated using the same approach that was used in the calculation of the soil HQs. Two tables (numbered as Tables M.106 and M.107) have been added to the report to show the calculation of exposure and HQs, respectively, associated with background.

Comment 2: All inorganics under "surface soils" - i.e., cadmium, chromium, copper, lead, silver (Tables M.106- 108) should be indicated in the tables. If inorganics are deleted because their HQs are less than "1" this should be clearly indicated.

Response 2: Tables M.106-108 present compounds with any HQ exceeding 1 for the shrew since the shrew is the most sensitive receptor for most of the COPCs. Therefore, compounds with HQs all less than 1 for the shrew are not included. It should be noted that Tables M.106-108 have been renumbered as Tables M.108-110 and the tables only present COCs identified from Step 3 (the further refinement of COCs, Section 7.6) to support the risk management presented in Section 7.7. In addition, they have been revised as a result of the discussion with BTAG. The incremental risk information has been removed from the tables.

Comment 3: Cadmium, copper and lead calculations should be provided in Table M.71.

Response 3: Disagreed. Cadmium, copper, and lead were not considered as COPCs because the maximum detected concentrations are less than the screening values (see Table M.22). Therefore, cadmium, copper, and lead were not included in Table M.71.

Comment 4: In the "Chemical-Specific COPC Discussion COC Selection" it is noted that some COPCs are not selected as COCs based on using different BCFs. These revised calculations (with the new BCFs) should be provided.

Response 4: Agreed. A table has been added to the discussion section where the HQs based on the alternate values for the exposure model input parameters (e.g., BAF and SP) were discussed for certain COPCs. The table presents a comparison of the HQs from the SLERA and the HQs based on the alternate input values.

Comment 5: Summary Tables do not consider the calculated tissue concentration hazard quotients calculated for the largemouth bass (Table M.103). The lack of biota samples should be discussed.

Response 5: Summary Tables (i.e., Table 7-8 and Table M.116) do include the tissue concentration hazard quotients. It should be noted that as Tables M.110-M.117 are the exact copies of the tables presented in Section 7, these tables have been removed from Appendix M to avoid repetitiveness.

A discussion of the effects of the lack of biota samples on the risk assessment has been added to the uncertainty section (Section 7.5.2). It should be noted that as discussed in the response to General Comment 1, no tissue sampling is being proposed. This proposal was discussed with EPA Region II during the 1/29/02 conference call.

Comment 6: The calculations for Tables M. 117 and 7-9 (NOAEL zinc criteria for soil) should be provided.

Response 6: Agreed. The footnotes of Table 7-9 have been revised to provide the calculations for NOAEL/LOAEL zinc criteria. It should be noted that Table M.117 has been removed from the report.

GANNETT FLEMING

Comment 7: Table M.36 -Group E COPCs. This table does not include cyanide.

Response 7: Originally no screening value was presented for cyanide. The Dutch Circular on Target Values and Intervention Values for Soil and Groundwater published by the Dutch Ministry of Housing, Spatial Planning and Environment on February 4, 2000 has been consulted and a target value of 5 mg/kg for cyanides-complex has been used as a screening level. The maximum cyanide

concentration detected at the site is less than the screening level. Therefore, cyanide is not a COPC for the site; and Table M.36 has not been revised. The cyanide screening level has been added to Tables M.18, M.19, and M.23.

Comment 8: Table M.38 -Group G COPCs. This table does not include cyanide.

Response 8: Cyanide was not detected at the Former Dry Waste Disposal Pit (i.e., Group G; refer to Table G-11 for more details). Therefore, cyanide is not a COPC for the Former Dry Waste Disposal Pit (Tables M.26 and M.27) and Table M.38 does not include cyanide.

Comment 9: Table M.60. This table does not include the complete title. It should identify mourning dove.

Response 9: Agreed. The titles of Tables M.60 and M.61 have been revised to reflect that the exposure calculation tables are for the mourning dove.

Comment 10: Table M.106. Chromium is not listed on this table even though the HQ is greater than 1 on Table M 63.

Response 10: Tables M.106 through M.108 present a comparison of the background concentrations to the site concentrations for metals with HQ(s) exceeding 1 for the shrew. The short-tailed shrew was selected since it generally is the most sensitive receptor. Chromium has no HQs exceeding 1 at the Disposal Pit A/B for the short-tailed shrew although the NOAEL max for the mourning dove slightly exceeds 1 (1.5, Table M.63). Therefore, it is not presented in Table M.106. It should be noted that Table M.106 through M.108 have been revised and renumbered as Tables M.108 through 110.

Comment 11: Table M.108. The entries as to whether the site maximum or mean concentrations exceed background concentrations are not correct for zinc.

Response 11: Agreed. The maximum or mean concentrations of zinc at Group G – the Former Dry Waste Disposal Pit do not exceed the respective background concentrations. The table has been revised accordingly. It should be noted that Table M.108 has been renumbered as Table M.110. In addition, the average background concentrations have been updated as a result of an internal QA/QC action.

Liu, Chunhua

From: Liu, Chunhua
Sent: Tuesday, January 29, 2002 4:47 PM
To: Vazquez. Julio (E-mail); Thomas R NAN02 Enroth (E-mail); 'pensak.mindy@epa.gov'; 'ajthorne@gw.dec.state.ny.us'; 'absoloms@seneca-hp.army.mil'; 'kevin.w.healy@hnd01.usace.army.mil'
Cc: Schacht, Eliza; Travers, Jacqueline; Liu, Chunhua; Adams, Jeff
Subject: conference call 1/29/02 - SEAD-12 RI

Dear all:

On 1/29/02, Parsons (Jackie Travers and Chunhua Liu) had a conference call with Julio Vazquez (USEPA), Mindy Pensak (BTAG, Region II), Alicia Thorne (NYSDEC), and Tom Enroth (USACOE - NY District). The call focused on how to use background data in the screening level ecological risk assessment for SEAD-12 at the Seneca Army Depot. In the draft RI, background data had been used to eliminate constituents of potential concern (COPCs) prior to calculating hazard quotients (HQs). After comments from USEPA requesting that all COPCs be carried through the screening level risk assessment, Parsons calculated HQs for all COPCs, and in addition, calculated HQs for background concentrations. Background HQs were then subtracted from site HQs to determine the incremental risk. EPA's comments dated 12/28/01 on the Final RI stated that background should not be used to subtract risk from the site and recommended a discussion on the role that background plays in the ecological risk assessment. Specific issues addressed during the conference call include the following:

1) Ms. Pensak mentioned that hazard quotients (HQs) calculated for background should not be subtracted from the site HQs. Background should not be used to eliminate COCs, but may be discussed in the uncertainty section to support risk management decisions. As a result, Parsons will not present incremental risk information. In Section 7.6 of the ecological risk assessment, COCs will not be eliminated based on background concentrations. Rather, a risk management section will be added to the end of the ecological risk assessment section to present the Army's position on whether or not to conduct a baseline ecological risk assessment (BERA). Issues raised in the uncertainty section, such as background, may then be used to support a decision to (1) end the risk assessment process (i.e. either by agreeing to clean up an area or deciding that no additional information is needed to eliminate an area of concern); or (2) to continue on to a BERA. For the compounds with the site concentrations consistent with the background concentrations, the Army will propose that no additional assessment is needed and that elevated HQs calculated are due to concentrations similar to those found in background.

2) Mr. Vazquez and Ms. Pensak requested more information on the background data set. Parsons will add more information on background to the revised final report. The mean concentration for each compound will be added to Table G-1.

3) EPA and BTAG agreed that tissue sampling may be required if a BERA is pursued. If the risk managers decide no BERA is necessary, then no tissue sampling would be required.

4) The Army is going to issue the revised final RI on 2/11/02.

Post-conference note:

After the conference call, Chunhua Liu (Parsons) called Mindy Pensak (BTAG) and discussed two additional EPA comments from 12/28/01:

1) Using detection frequency in the initial screening of chemicals of potential concern (EPA General Comment 3)

Ms. Pensak suggested not to use detection frequency in the initial screening of COPCs. Detection frequency issue can be discussed in Step 3.

2) Excluding nondetects with detection limits greater than two times the maximum detected value in the mean calculation (EPA General Comment 6)

Ms. Pensak suggested this may be an approach used in human health risk assessment but not ecological risk assessment. Parsons is proposing to keep the data as they were because they are conservative (i.e., health protective) and not to revise the mean calculation at this stage.

Please contact me or Jackie if you have any questions.

Regards,

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Response to Comments from the United States Environmental Protection Agency

Subject: Revised Final RI Report for SEAD-12
Seneca Army Depot
Romulus, New York

Comments Dated: July 19, 2002

Date of Comment Response: August 27, 2002

Response to Comments:

The conclusion paragraph of Response 1 indicates that no further assessment is warranted; however Section 7.7.2 Disposal Pit C, page 7-45 indicates that further evaluation of the toxicity of zinc is warranted. Therefore, this response needs to be modified to be consistent with the document.

Response: The conclusion paragraph of Response 1 reads "For the compounds with the site concentrations consistent with the background concentrations, the Army proposes that no additional assessment is needed...". As zinc was identified as a COC for the Disposal Pit C area and its concentrations are not consistent with background, further evaluation of the toxicity of zinc is warranted. Based on the above discussion, the statement in the comment response is not contradictory to the statement presented in Section 7.7.2.

Response to Specific Comments - Ecological:

Comment 1: Tables M.106 and M.107 should provide background calculations for all inorganics, rather than just a selected subset.

Response 1: As discussed with EPA (see an email attached in Appendix N), background information was used to support the Army's management decision to either end the risk assessment process or to continue on to a BERA after Step 3.2 of the ERA (refining contaminants of COC). The background information was not used in Step 3.2 to eliminate COCs. Therefore, HQs posed by the background concentrations were only calculated for the COCs identified in Step 3.2 (as presented in Section 7.6). Calculations of HQs for other inorganics are not necessary for the risk management process and therefore are not presented in the RI report.

It should be noted that the previous Tables M.106 and M.107 have been renumbered as Tables M.110 and M.111, respectively.

Comment 4: See specific comments; the actual table using the revised BAF should be provided, rather than just the summary information.

Response 4: Agreed. Tables showing the calculations of the alternate HQs based on the revised soil-to-plant uptake factor and/or BAF have been included in Appendix M (Tables M. 106 through M.109). It should be noted that the previous Tables M.106 through M.111 have been renumbered as Tables M.110 through M.115. Sections 7.6 and 7.7 have been revised to reflect the change.

Document Specific Comments:

Comment 1: Section 7.6.1, page 7-35: It is unclear why in the discussion of inorganic bioavailability, DDT (an organic) is used as an example. This comparison should be removed from the metals discussion.

Response 1: Section 7.6.1 contains a discussion of the overall conservative evaluation of ecological risks in Steps 1 and 2 of the ERA to support ERA Step 3.2 (refining COCs) presented in Section 7.6. Although most of the COPCs evaluated in Step 3.2 are inorganics, some organics were also considered. For example, Aroclor-1254 was a COPC with HQs exceeding 1 for the shrew in the Disposal Pit A/B area and a detailed discussion was presented in Section 7.6.2.1. In addition, the example given for DDT was used only to illustrate that the assumption used in the SLERA for relative bioavailabilty (relative bioavailability of 1) was conservative. This statement applies not only to organics but also to inorganics. Therefore, the example given for DDT has been retained in Section 7.6.1 and the text has been revised to clarify that although most COPCs are inorganics, the example of DDT was used to illustrate the conservative evaluation of relative bioavailability in the SLERA, for both organics and inorganics.

Comment 2: Section 7.6.1, page 7-36, Impact to Habitat in the Overall Seneca Conservation/Recreation Area: It is inappropriate to discuss the acreage impacted under a Section which addresses refinement of COCs. This may be a risk management issue, but it is not a risk assessment issue, and should not be included in this part of the SLERA.

Response 2: Agreed. The discussion of the impact to habitat in the overall Seneca conservation/recreation area has been moved to the Risk Management Section (Section 7.7).

Comment 3: Section 7.6.2.1, page 7-38, Selenium: As noted in our December 2001 comments, calculations of the alternate HQs based on a soil-to-plant uptake factor of 0.016 and a soil-to-soil invertebrate factor of 0.2 should be provided in an attached table.

Response 3: Agreed. Tables showing the calculations of the alternate HQs based on a soil-to-plant uptake factor of 0.016 and a soil-to-soil invertebrate factor of 0.22 for selenium have been included in Appendix M (Tables M. 106 and M.107). It should be noted that the previous Tables M.106 and M.107 have been renumbered as Tables M.110 and M.111, respectively.

Comment 4: Section 7.6.2.1, page 7-39, Aroclor 1254: As noted in our December 2001 comments, calculations of the alternate HQs based on a BAF of 1.3 should be provided in an attached table.

Response 4: Agreed. Tables showing the calculations of the alternate HQs based on the revised BAF have been included in Appendix M (Tables M. 108 and M.109). It should be noted that the previous Tables M.108 and M.109 have been renumbered as Tables M.112 and M.113, respectively.

Comment 5: Tables 7-2 & 7-3: Although Tables 7-2 & 7-3 indicate they were revised on 2/11/02, the information they contain does not correlate with the information presented in the last paragraph of page 7-39. Specifically, the tables indicate that no COCs were retained while the document notes that iron, lead, nickel, vanadium, and zinc were retained as COCs for surface soils and mixed soils due to their elevated HQs for the vole and shrew. This must be corrected.

Response 5: The COC lists in Tables 7-2 and 7-3 are based on the risk management decision presented in Section 7.7. Therefore, the COCs are not the same as those identified in Section 7.6. The tables have been revised to present the COC lists from the COC refining step (Step 3.2 of ERA as presented in Section 7.6) and the lists of COCs that warrant further evaluation based on the risk management decision.

Comment 6: Section 7.6.2.2, page 7-40: As noted in December 2001 comments, calculations of alternate HQs based on a soil-to-plant uptake factor of 0.016 and a soil-to-soil invertebrate factor of 0.22 should be provided in an attached table. A discussion needs to be provided to justify the elimination of copper, silver, and cadmium from the COC list. All inorganics should be listed in the corresponding tables.

Response 6: Tables showing the calculations of the alternate HQs based on a soil-to-plant uptake factor of 0.016 and a soil-to-soil invertebrate factor of 0.22 for selenium have been included in Appendix M (Tables M. 106 and M.107). It should be noted that the previous Tables M.106 and M.107 have been renumbered as Tables M.110 and M.111, respectively.

It should be noted that silver was not selected as a COPC for the area designated as Disposal Pit C and therefore was not included in the screening-level risk characterization. Although cadmium was identified as a COPC in subsurface soil for this area, the calculated HQs for all the receptors are below 1. Therefore, silver and cadmium were not considered in the COC refining step. As stated in the concluding paragraph of Section 7.6.2.2, the rationale used for copper at Disposal Pit A/B can be applied to copper at Disposal Pit C; therefore, no detailed justification was repeated for copper.

The same rationales used for Disposal Pit A/B can be applied to the other inorganic COPCs at the area to conclude that these COPCs were not considered as COCs. As the approaches did not involve alternate HQ calculation, tables similar to the table used for selenium are not presented.

Comment 7: Tables 7-4 & 7-5: Tables 7-4 & 7-5 need to be revised (they are dated 11/8/01) so that the information they contain correlates with the information presented in the last paragraph of Section 7.6.2.2. Specifically, the tables indicate that no COCs were retained while the document notes that iron, lead, nickel, vanadium, and zinc were retained as COCs for surface soils and mixed soils. This must be corrected.

Response 7: The COC list in Tables 7-4 and 7-5 is based on the risk management decision presented in Section 7.7. Therefore, the COCs are not the same as those identified in Section 7.6. The tables have been revised to present the COC lists from the COC refining step (Step 3.2 of ERA as presented in Section 7.6) and the lists of COCs that warrant further evaluation based on the risk management decision.

Comment 8: Section 7.6.2.3, page 7-41: As noted in our December 2001 comments, calculations of the alternate HQs based on a soil-to-plant uptake factor of 0.016 and a soil-to-soil invertebrate factor of 0.22 should be provided in an attached table.

Response 8: Agreed. Tables showing the calculations of the alternate HQs based on a soil-to-plant uptake factor of 0.016 and a soil-to-soil invertebrate factor of 0.22 for selenium have been included in Appendix M (Tables M. 106 and M.107). It should be noted that the previous Tables M.106 and M.107 have been renumbered as Tables M.110 and M.111, respectively.

Comment 9: Tables 7-6 & 7-7: Tables 7-6 & 7-7 need to be revised (they are dated 11/8/01) so that the information they contain correlates with the information presented in the last paragraph of Section 7.6.2.3. Specifically, the tables indicate that no COCs were retained while the document notes that iron, nickel, vanadium, and zinc were retained as COCs for surface soils and mixed soils. This must be corrected. Further, it is unclear why lead is not addressed in these tables.

Response 9: The COC list in Tables 7-6 and 7-7 is based on the risk management decision presented in Section 7.7. Therefore, the COCs are not the same as those identified in Section 7.6. The tables have been revised to present the COC lists from the COC refining step (Step 3.2 of ERA as presented in Section 7.6) and the lists of COCs that warrant further evaluation based on the risk management decision.

Lead was not included in these tables because lead was not identified as a COPC either in surface soil or subsurface soil (Tables M.26 and M.27) for the area designated as Former Dry Waste Disposal Pit.

As a result, lead has not been included in the screening-level risk characterization for this area. Tables 7-6 and 7-7 present a summary of metals with ecological hazard quotients exceeding one for surface soil and subsurface soil, respectively. As lead has not been included in the screening-level risk characterization, lead was not listed in these tables.

Comment 10: Section 7.8 Summary, page 7-48: It should be noted that Table 7-9 does not contain calculated remedial goal criteria for zinc.

Response 10: Table 7-9 does contain calculated risk-based concentrations for zinc. The risk-based concentrations were back calculated from a HQ of 1 using the same assumptions adopted in the SLERA. These risk-based concentrations were calculated using NOAEL and LOAEL as TRVs, respectively and are listed under "NOAEL Criteria" and "LOAEL Criteria" in Table 7-9. Table 7-9 has been revised and both risk-based concentrations have been placed under "Risk-based Concentrations". It should be noted that as the assumptions used in the SLERA are generally very conservative; therefore, the calculated risk-based concentrations are for screening purposes only. Section 7.8 has been revised to reflect the above discussion.