U.S. ARMY ENGINEER DIVISION
HUNTSVILLE, ALABAMA

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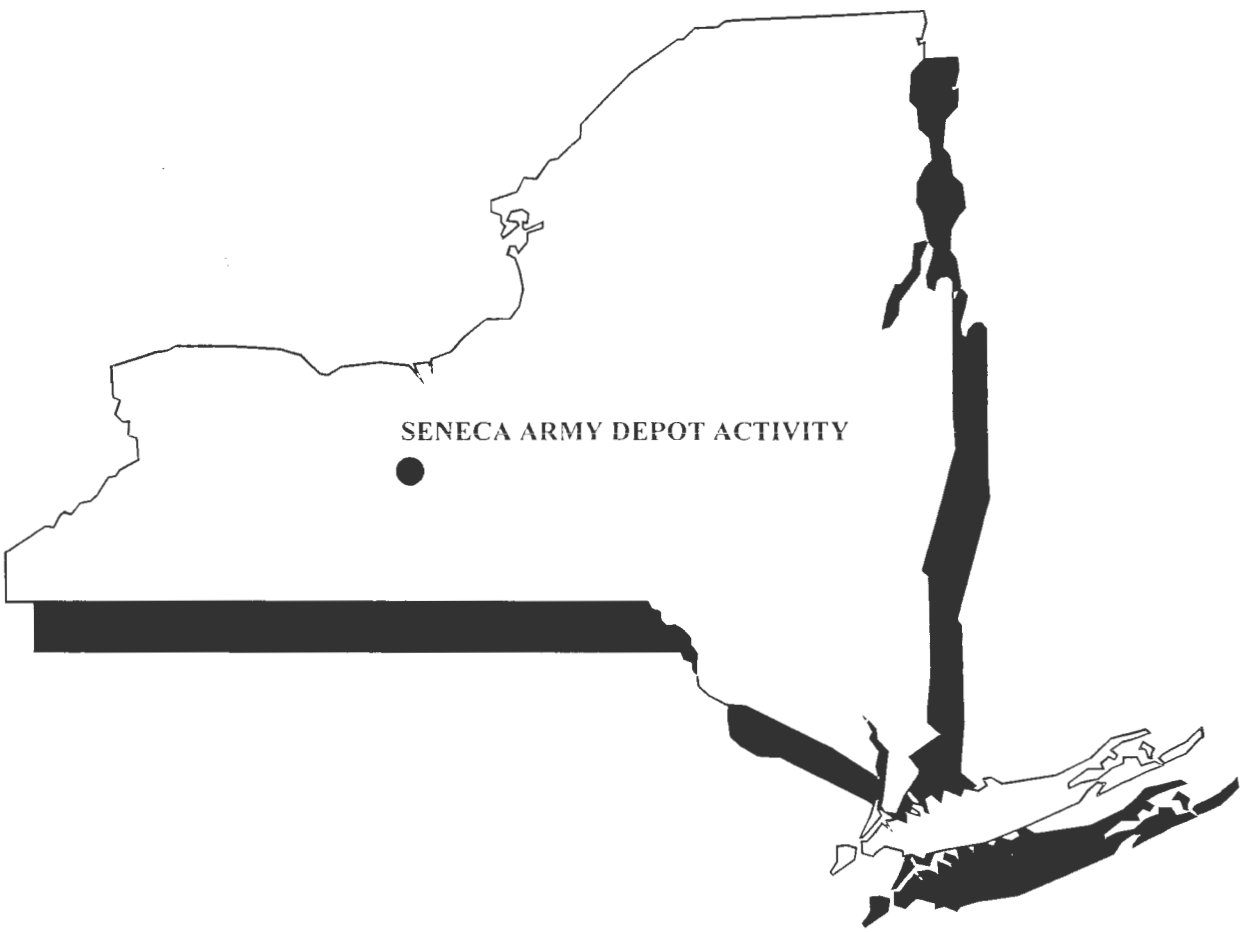


FINAL - APPENDIX B

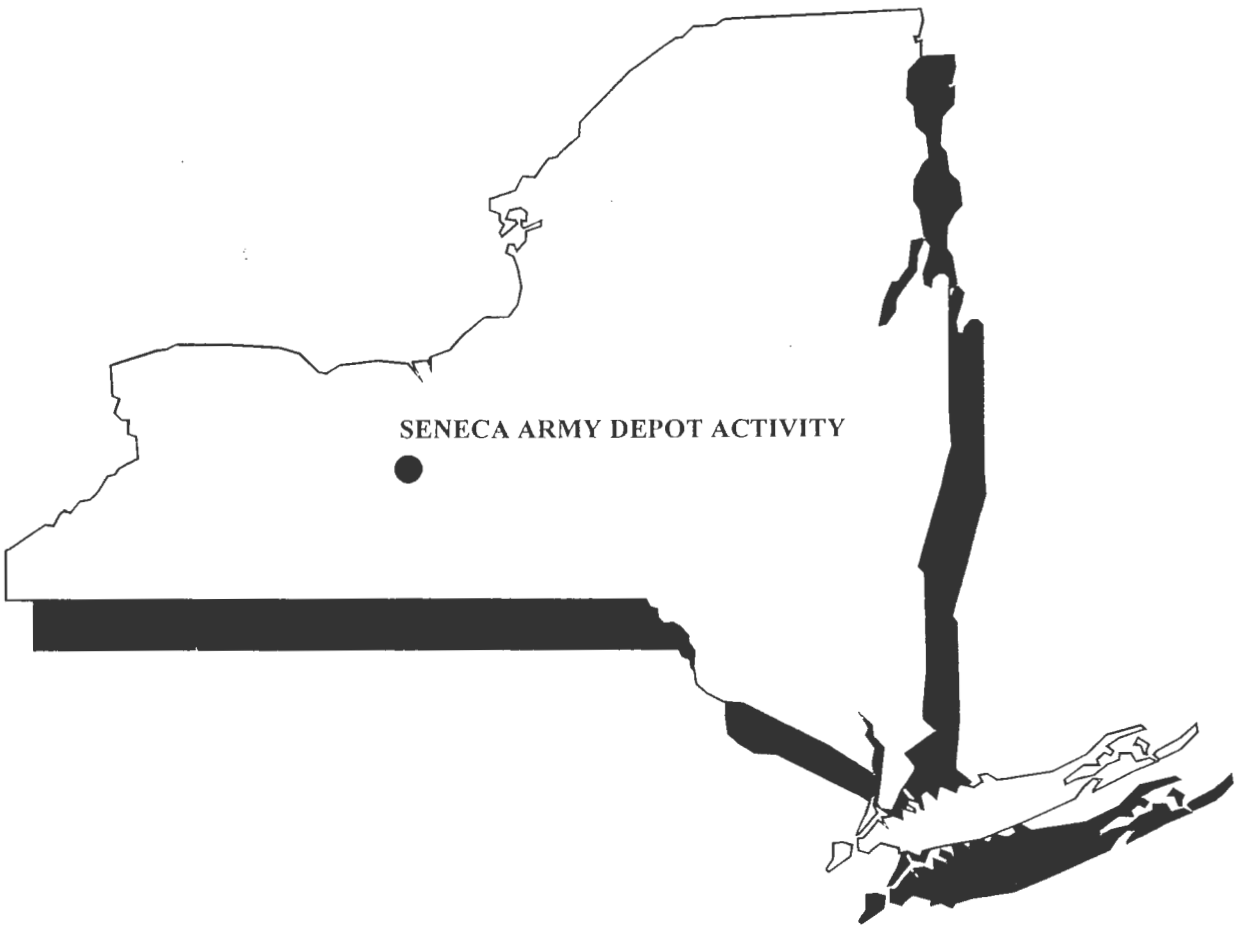
PROPOSED PLAN FOR
The ABANDONED DEACTIVATION FURNACE (SEAD-16) and the ACTIVE DEACTIVATION FURNACE (SEAD-17)

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

CONTRACT NO. DACA87-95-D-0031
DELIVERY ORDER 003

APRIL 2003

U.S. ARMY ENGINEER DIVISION
HUNTSVILLE, ALABAMA



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SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Appendix B

Prepared For:

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April 2003

Response to Comments from the New York State Departments of Environmental Conservation (NYSDEC) and Health (NYSDOH)

Subject: Draft Final Proposed Plan for the Abandoned Deactivation Furnace (SEAD-16) and the Active Deactivation Furnace (SEAD-17)
Seneca Army Depot
Romulus, New York

Comments Dated: November 14, 2002

Date of Comment Response: April 4, 2003

The New York State Departments of Environmental Conservation (NYSDEC) and Health (NYSDOH) have reviewed the above referenced document as well as the Army's responses to the NYSDEC's comments on the previous draft. Our comments follow:

Army's Response to NYSDEC Comments:

Comment 1: In the Army's response to General Comment #1, the Army states that "(R)esidential land use was only considered to compare the cost of remediating the sites for this land use versus the cost to implement restricted use on the sites." As requested in our January 4, 2001, February 21, 2001, and November 13, 2001 letters regarding this site, the description and comparison of the residential scenario should be brought into the main body of the Proposed Plan so a comparative analysis of the pros and cons can be performed for this alternative versus the other remedial alternatives presented in this Proposed Plan.

Although it is stated in the response that Figure 2 has been added to show areas of proposed remediation including the previous "hotspot" areas, the area around SS16-31 still is not included in Figure 2. Revision of Figure 2 is needed.

Response 1: Alternative 4P, was considered and evaluated against all of the nine criteria, not just cost, in order to satisfy the New York State requirement to evaluate the site at pre-disposal conditions. Future residential use was also considered in order to comply with Army guidance, which states that alternatives consistent with property use without restriction should be considered to compare life-cycle institutional control costs with more conservative cleanup alternatives (DAIM-BO, "Army Guidance for Using Institutional Controls in the CERCLA Process").

Alternative 4P is incorporated into the discussion of Section 8 (Summary of Remedial Alternatives) and Section 9 (Comparative Evaluation of Alternatives) of the Proposed Plan. The description of Alternative 4P and the discussion on the full evaluation of the nine criteria for that alternative, which is comparable to the comparison performed for all other alternatives in Section 6 of the FS, remains in Appendix A. It is impractical and it would seem unbalanced to move the 9-page discussion on

Alternative 4P found in Appendix A into the body of the document. However, analysis of Alternative 4P has been incorporated in the comparative analysis of all remedial alternatives.

The excavation area has been modified. The "hotspot" area around SS16–31 has been included in the revised excavation area based on the following rationale: Since the FS, risk-based cleanup goals (CUGs) for certain carcinogenic PAHs and metals (antimony, arsenic, cadmium, copper, mercury, thallium, and zinc) have been established. CUGs for PAHs were derived by following the same approach used at SEAD-59/71. PAH CUGs were derived using the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046: *Determination of Soil Cleanup Objectives and Cleanup Levels* method for establishing CUGs for carcinogens based on a future construction worker receptor (daycare facility use will be restricted), the most conservative receptor under the intended future use scenario (industrial). CUGs for metals were derived by back calculating concentrations of metals that, combined, would yield a non-carcinogenic risk less than 1. In order to account for the fact that each metal contaminant of concern (COC) is only a partial contributor to total risk, the post-remediation hazard index (HI) for each COC at SEAD-17 was normalized to reflect the magnitude of risk of one metal in comparison to the total risk from all the metals of concern. It should be noted that *post-remediation* assumes that all surface soil samples located within the boundary of the area delineated by concentrations of lead greater than 1250 mg/kg have been removed. The normalized HI was subsequently used as the acceptable risk value in the calculation to determine the CUGs for metals. The risk-based CUGs for PAHs and metals are presented in Table 1.

The CUG scenario of 1250 ppm for lead has been revised to include the derived CUGs for the other metals and PAHs. All locations that include concentrations that exceed these cleanup goals are included in the remedial area, and the remedial action is driven by compliance with the established cleanup goals. Consequently, the remedial area has expanded since the FS to include the corner area northwest of Building S-311, surrounding sample locations SB16-4 and SS16-31. The areas around SS16-35 and SS16-11 will also be remediated due to exceedances of PAH and metal CUGs. Based on available site data, the soil would be excavated to a depth of one foot, with the exception of the areas around SB16-2, SB16-4, and SB16-5, which would require excavation to a depth of 2-3 feet due to subsurface exceedances of cleanup goals. Available data at SEAD-17 indicates that there is no subsurface contamination. These excavations will be completed to the greatest extent possible without damaging or disturbing the railroad tracks. The Army requires that the future land user must have access to working railroad tracks in this area. The concept of "hotspots" no longer exists and has been removed from the text. Figures 2 and 3 have been revised to illustrate the extent of the remedial area.

Comment 2: Amendments to Excavation Areas: The Army's response to the state's request of remediating the surface soils contaminated with PAHs is unsatisfactory. The Army does not explain

why the requested areas of PAH contamination is only proposed to be "excavated to a depth of 12 inches and backfilled with clean soil." The proposal that "no confirmatory sampling will be conducted," at these hot spot removals is unsupported. As discussed in our January 4, 2001 and February 21, 2001 letters, PAH contamination needs to be thoroughly addressed as contaminants of concern with remedial clean-up levels determined and confirmed by sampling. We requested in our February 21, 2002 letter, that the spatial configuration be expanded to include "surface soil areas containing elevated levels of carcinogenic PAHs." As the PAH contamination is an expansion of the proposed areas of remediation, the extent of remediation should be expanded to include the areas represented by these soil samples, not merely the soil sample locations themselves.

Response 2: The Army has revised the areas of excavation at these sites based on risk based CUGs. The extent of contamination will be confirmed with post-remediation sampling. Based on available site data, the soil would be excavated to a depth of one foot, with the exception of the areas around SB16-2, SB16-4, and SB16-5, which would require excavation to a depth of 2-3 feet due to subsurface exceedances of cleanup goals. The excavation will be completed to the greatest extent possible without disturbing the railroad tracks. Available data at SEAD-17 indicates that there is no subsurface contamination. Tables A-1 and A-2 in Attachment A show the distribution of metal COC's in soil at depth at SEAD-16 and SEAD-17, respectively. As mentioned in the response to General Comment #1, risk-based CUGs for carcinogenic PAHs and metals (antimony, arsenic, cadmium, copper, mercury, thallium, and zinc) have been developed and are presented in Table 1. All locations that include concentrations that exceed the cleanup goals are included in the remedial area, and the remedial action is driven by compliance with the established cleanup goals. Consequently, the remedial area has expanded. Figures 2 and 3 have been revised to illustrate the extent of the remedial area. Confirmatory sampling will be conducted to ensure that the extent of contamination has been properly delineated.

Comment 3: Response to Specific Comment 1: Contrary to what is stated in the text, the title of this document has not been revised. Please remove "Superfund" from the title, as the term is not applicable to this site.

Response 3: Agreed. The title has been revised.

Comment 4: Response to Specific Comment 5: The Army's statement that "the goal of the remedial action is to have no residual contamination in soils above the clean up goals developed for the future industrial use scenario (lead concentration of 1250 mg/kg)," implies incorrectly that lead is the only contaminant of concern to be addressed by the proposed cleanup goal.

Response 4: The intent of the response was to express that the goal of the remedial action is to have no residual contamination in soils at a level that could pose a threat to human health or the environment under the future land use scenario. Risk-based cleanup goals have been developed for seven additional metals (antimony, arsenic, cadmium, copper, mercury, thallium, and zinc) and for carcinogenic PAHs whose NYSDEC TAGM 4046 values are human health based (benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, and dibenz(a,h)anthracene), presented in Table 1. As a result of the new CUGs for several COCs, the remedial area has expanded. The goal of the remedial action is to meet the cleanup goals; hence, residual contamination above the established cleanup goals is not expected at the sites, as shown in Tables 7 and 8.

Comment 5: Response to Specific Comment #6: The Army's response to State's comments is disconcerting. The Army states that "(A)fter remediation is completed at SEAD-16, the maximum concentrations of antimony, copper, lead, mercury, and thallium, are expected to be below the calculated concentrations determined to be protective of human health under an industrial scenario. Although the maximum concentration of zinc exceeds the clean up goal, the EPC for zinc is less than the clean up goal." For SEAD-17, the Army, for the most part, repeats the same explanation for cadmium in that the "post remediation EPC for cadmium is expected to be 2.45 mg/kg, which slightly exceeds the TAGM value." It appears that the Army does not plan on remediating to their proposed cleanup goals but rather to achieve an average contaminant concentration that is less than the proposed cleanup goal. If the Army does not plan on achieving their proposed cleanup goals, then the Army should revise their cleanup goals so that no residual contamination in soils exceeds the cleanup goals, not the 95% upper confidence limit of the arithmetic mean of on-site soil samples.

As stated in the past, we are concerned with the Army's back-calculating PRGs of a site with multiple contaminants because those levels that are left behind could potentially lead to an unacceptable risk. Please include an additional column to Tables 7 and 8 indicating the maximum level of each contaminant of concern expected to be left onsite under each remedial alternative.

Response 5: As previously stated in response to Comment #1, cleanup goals have been developed for other metals (antimony, arsenic, cadmium, copper, mercury, thallium, and zinc), shown in Table 1. Each individual sampling location's concentration (not a site average) will be compared to the cleanup goal for that constituent. In order to account for the fact that each metal COC is only a partial contributor to total risk, the post-remediation hazard index (HI) for each COC at SEAD-17 was normalized to reflect the magnitude of risk of one metal in comparison to the total risk from all the metals of concern. It should be noted that *post-remediation* assumes that all surface soil samples located within the boundary of the area delineated by concentrations of lead greater than 1250 mg/kg have been removed. The normalized HI was subsequently used as the acceptable risk value in the calculation to determine the CUGs for metals. The Army's selected remedial action will comply with

the cleanup goals for all COCs. No residual contamination above cleanup goals will be left onsite, as shown in Tables 7 and 8.

Comment 6: Response to Specific Comment 7: The Army states that it's their intention "to clean up soil to be protective of the environment in an industrial scenario. After completion of the remedial action at both sites, a Completion Report that will demonstrate that the remedial action is protective of human health and the environment, will be submitted." Please clarify what is meant by protective of the environment by an industrial scenario. Although the property may be deed restricted, but undeveloped for a significant period of time, there remains a potential for unacceptable wildlife exposure for species occupying that undeveloped property. Please include measurable remedial objectives to be discussed in the Completion Report that would ensure protection of the environment under an industrial scenario. If necessary, the Army should provide for temporary remedial measures until the property is developed.

Response 6: The planned future use of SEAD-16 and SEAD-17 is for industrial use. Therefore, the SEAD-16 and SEAD-17 area is of little value to the ecological community, and would not serve as a desirable habitat for this community. Risk from exposure to sediment/ditch soil assumes that the ditches are supporting aquatic life and that the receptor is continuously exposed. Site conditions at SEAD-16/17 suggest that usually there is no water in the ditches and that they do not support aquatic life. Due to the fact that it is not believed that the sediment/ditch soils pose a threat to the environment, ecological risk is not of concern at these sites. Most likely, ecological receptors will inhabit unaffected areas adjacent to the impacted areas of SEAD-16/17, thereby avoiding areas where minimal ecological risk exists.

General Comments:

Comment 7: The FFA states that "any remedial action selected, implemented and completed under this agreement will be protective of human health and the environment such that remediation of releases covered by this Agreement shall obviate the need for further corrective action under RCRA." Therefore, under the FFA, RCRA shall be considered an ARAR under CERCLA. At the June 12, 2002 BCT meeting, we agreed that RCRA closure of the SEAD-17 facility will be assumed under CERCLA, and RCRA closure would be accomplished by including the RCRA closure requirements, as outlined in a RCRA closure plan, to be referenced in the Proposed Plan and consequently the Record of Decision. The RCRA closure plan should be submitted to the RCRA closure staff for review and approval prior to issuance of the Record of Decision.

Response 7: Agreed. A RCRA closure plan may be submitted as part of the Record of Decision submittal. The closure plan will defer the cleanup to the CERCLA process and demonstrate how each RCRA closure requirement will be met during the CERCLA closure process.

Comment 8: As discussed in our July 16, 2002 teleconference regarding the typographical errors found in the SEAD-25 and SEAD-26 Draft Final Proposed Plan, several of those comments apply to this document as well. Please incorporate those corrections as necessary.

Response 8: Agreed. The text has been revised to eliminate typographical errors.

Comment 9: This document is rather difficult to read/comment on without section numbering. For instance, under "Summary of Remedial Alternatives" there are several subsections that refer to the beginning of the section, however, it is difficult to discern the location of the beginning of the section. It would be helpful for the Army to include section numbering to help differentiate the subsections from the sections.

Response 9: Agreed. The sections have been numbered.

Comment 10: The term "PRAP" appears many times throughout the document, and in each instance, it should be replaced with "Proposed Plan."

Response 10: Agreed. The text has been revised.

Comment 11: The capital cost range for Alternative 4, which ranges from $2,257,850 to $7,305,090, needs to be revised. One of the Army's main assumptions in the preliminary detail cost estimates, which is Appendix E of the FS, is that "it has been assumed that all material will fail the TCLP test and will require stabilization prior to off-site disposal." The assumption is poor because it assumes that the Army would leave hazardous waste (by definition) on-site under the industrial re-use alternative. The Army would not leave hazardous waste on-site and consequently would not propose an alternative (cleanup goal of 1250 ppm lead) that would leave hazardous waste on-site. Therefore the volume estimates should be revised to reflect that only the soils above 1250 ppm would fail TCLP. Given the disposal costs for $117/ton for that which fails TCLP and $31.50/ton for that which passes, the difference for remediating only material above 1250 ppm lead versus remediating all material above 400 ppm lead and other metals above TAGM (an estimated 15,537 tons) reduces the remedial cost estimate by $1,328,414. Consequently, the difference between the Army's preferred alternative of $2,960,000 and the unrestricted use scenario of $5,980,000 would be $3,020,000. Please revise the capital cost ranges appropriately.

Response 11: Agreed. The cost estimates have been revised. It is assumed that 100% of building material would require hazardous disposal, and that 15% of soils (surface soil, subsurface soil, and ditch soil) excavated under the 1250 mg/kg for lead and cleanup goals for metals and PAHs scenario, approximately 704 cubic yards, would require hazardous disposal. The remaining soil could be disposed in a non-hazardous Subtitle D facility. It is assumed that any additional soil excavated under a more conservative scenario would require non-hazardous disposal (i.e., under all cleanup goal scenarios, only 704 cubic yards of soils would require hazardous disposal). It should be noted that based on other sites at SEDA where total lead concentrations in soils were close to 1250 ppm and TCLP data were available, an assumption that 15% of the soils would be hazardous is a conservative estimate.

Costs for the following cleanup goal scenarios have been revised and are presented in Table 6: 1250 ppm lead + metals and PAH CUGs; 1000 ppm lead; 400 mg/kg lead; and 400 ppm lead + TAGMS (unrestricted use scenario). The revised capital costs of the Army's preferred alternative and the unrestricted use scenario are approximately $1,699,930 and $3,604,160, respectively.

Specific Comments:

Comment 12: Page 1, Purpose of Proposed Plan: A brief description of the Army's preferred remedy for this site should be included in this section.

Response 12: Agreed. The elements of the remedy have been more clearly outlined in the "Purpose of the Proposed Plan" section.

Comment 13: Page 2, Site Background: The statement that the SEAD-17 deactivation furnace "has been in the process of being permitted as a hazardous waste incinerator, under the provision of RCRA, but the RCRA permit was withdrawn by the Army when the Depot was listed for base closure in 1995," is misleading. The document should clarify that the SEAD-17 RCRA facility was operated under interim status and still needs to be closed out under RCRA. See general comments above.

Response 13: Agreed. The text has been revised accordingly.

Comment 14: Page 2, Remedial Investigation Summary: The first sentence seems to indicate that SEAD-16 and SEAD-17 are described in only 4 of the previous reports, and not the RI or the FS. Also, it is indicated from the text that the RI and FS are not part of the document repository. Please correct.

Response 14: Agreed. SEAD-16 and 17 have been described in four reports previous to the Remedial Investigation (RI) and Feasibility Study (FS), which are available to the public at the repository at SEDA. The text has been revised accordingly.

Comment 15: Page 3, SEAD-16, Soil: The first sentence introduces New York State Technical and Administrative Guidance Memorandum (TAGM) values without presenting appropriate definitions or perspective. Please expand.

Response 15: Agreed. NYSDEC provides Technical Administrative Guidance Memorandums (TAGMs), which are technical guidance publications that describe various processes and procedures recommended by NYSDEC for the investigation and remediation of hazardous waste sites. One TAGM, No. 4046: *Determination of Soil Cleanup Objectives and Cleanup Levels (January 1994)*, provides guideline values for soil cleanup limits at waste sites. This information has been added to the text.

Comment 16: Page 3, SEAD-16, Sediment: The last two sentences in this sub-section are irrelevant and should be removed from the text.

Response 16: Agreed. The two sentences have been removed from the text.

Comment 17: Page 4, SEAD-17, Soil: The Statement that "(L)ead was detected in all of the subsurface soil samples at concentrations that exceed its TAGM value," indicates that the Army hasn't delineated the extent of subsurface soil contamination. Also, the last sentence is irrelevant and should be removed from the text.

Response 17: The subsurface contamination has been defined and delineated. Available subsurface data at SEAD-17 indicated no subsurface contamination, as shown in Table A-2 in Attachment A. The excavation area has been delineated by the risk-based derived cleanup goals. The final delineation will occur with confirmatory sampling following the completion of the remediation action. Additionally, the Army recognizes that additional sampling for further delineation may be required in the ROD in the form of a Pre-Design Sampling Analysis Program. This work could further define excavation areas in support of the remedial design.

The last sentence has been removed.

Comment 18: Page 5, SEAD-17, Groundwater: The first sentence in this section stating that "the groundwater at SEAD-17 has not been significantly impacted by any chemical constituents," is contradicted by latter sentences, which reveal that two inorganic elements exceeded MCLs while two

other inorganics exceeded the NYSDEC AWQS Class GA Standard. Please reconcile. Also, this section should recognize that the best use for site groundwater now and in the future is as drinking water and that those standards apply.

Response 18: Agreed. The section has been revised to reflect that while there were a few groundwater exceedences of standards, these concentrations were only slightly greater that the action level. A groundwater use restriction will be imposed as a land use control, so the site water would be prohibited as a source of drinking water.

Comment 19: Page 5, Human Health Risk Assessment: Further explanation is needed why inhalation of dust in ambient air and dermal contact to on-site soils was evaluated for future industrial workers at SEAD-17 only, and inhalation of indoor air and dust and dermal contact to indoor dust was evaluated at SEAD-16 only. The baseline risk assessment should also include a residential land use scenario, although the anticipated reuse of the SEADs as industrial only, to satisfy the requirement to evaluate the site at baseline conditions.

Response 19: The pathways of ambient air and dermal contact to on-site soil were not evaluated for SEAD-16 since the future industrial worker would essentially be an office worker with negligible exposure to these pathways. It should be noted that the ambient air and dermal contact to on-site soil pathways did not cause unacceptable risk to more sensitive receptors like the day care child (as presented in the table below); hence, the likelihood of these exposure pathways causing risk for an office worker is minute. Inhalation of indoor dust and dermal contact to indoor dust were not evaluated at SEAD-17 since the structure at SEAD-17, Building 367, is not considered a standard building. Building 367 consists of the deactivation furnace, surrounded by a cinder block barrier, 10 to 12 feet tall, with openings in the barrier to allow for entrance and egress. There is no cover over the furnace. The furnace had been operated under an interim RCRA permit. The Army does not believe that there is contamination in the structure at SEAD-17; however, any issues that remain relating to risk at SEAD-17 will be dealt with during the RCRA closure process.

Pre-Remediation Risk at SEAD-16:

	Inhalation of Ambient Air		Dermal Contact to On-Site Soil	
	HI	Cancer Risk	HI	Cancer Risk
Daycare Center Child	8E-1	1E-10	4E-2	1E-7

The Army believes that it has sufficiently evaluated baseline conditions by assessing a pre-disposal scenario for unrestricted use, Alternative 4P. Residential cleanup goals of 400 ppm for lead and TAGMs for other metals were established in the FS and were evaluated under the pre-disposal alternative, Alternative 4P. The purpose of performing a risk assessment for a future resident would be to determine levels that would be protective of that receptor. Since cleanup goals protective of a

future resident have previously been developed and evaluated, the addition of a future resident to the risk assessment is not deemed necessary. Therefore, a baseline risk assessment for a future resident will not be added to the risk assessment.

Comment 20: Page 6, Human Health Risk Assessment. There should be an explanation as to why the "SEAD-16 industrial worker is assumed to work only indoors" while the "SEAD-17 worker is assumed to work only outdoors." The statement that "(L)ead was considered by comparing site data to levels established by USEPA and NYSDEC as protective," needs further clarification as to what the protection is being applied to and under which conditions.

Response 20: At SEAD-16, the industrial worker will only work inside as an office worker; the future worker is not expected to be exposed to risk through most outdoors pathways. At SEAD-17, exposure to indoor pathways was not assessed since Building 367 is not a fully enclosed structure. The Army does not believe that there is contamination in the structure at SEAD-17; however, any issues that remain regarding risk at SEAD-17 will be dealt with during the RCRA closure process.

Risk caused by lead was considered by comparing site data to the levels established by EPA based on "Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil" (EPA, December 1996) and "Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for Lead in Children" (EPA, February 1994), which reference levels that are protective of adults and children, respectively. These statements have been added to the text.

Comment 21: Page 7, Ecological Risk Assessment: As stated in the Department's February 21, 2001 letter to the Army regarding the Final FS, the "proposition that an ecological hazard quotient of less than 10 should be considered acceptable (protective of ecological receptor), "is not adequately supported" and "screening is performed at a hazard quotient level of 1; raising the screening level to 10 appears arbitrary." Therefore, the NYSDEC continues to disagree with the Army's conclusion regarding their ecological risk assessment.

Response 21: Acknowledged. The text will be revised to remove references that a HQ of less than 10 represents an acceptable level of risk. However, the Army does believe that there is negligible ecological risk at SEAD-16 or SEAD-17. It should be noted that a hazard quotient of 1 is not considered a measure of risk but a measure of the level of concern. At both sites, most COCs with HQs greater than one were due to exposure to sediment/ditch soil. Risk from exposure to sediment/ditch soil assumes that the ditches are supporting aquatic life and that the receptor is continuously exposed. Site conditions at SEAD-16/17 suggest that usually there is no water in the ditches and that they do not support aquatic life. Due to the fact that it is not believed that the

sediment/ditch soils pose a threat to the environment, ecological risk is not of concern at the sites. In addition, the assumptions and many of the toxicity values used in the ecological risk assessment were overly conservative and over represent site risk.

Comment 22: Page 7, Remedial Action Objectives: Under this section the Army states that "(A)nother reason for the consideration of a residential use is to comply with Army guidance, which states that alternatives consistent with property use without restriction should be considered to compare life-cycle institutional control costs with more conservative clean-up alternatives." However, the Army never performs a comparison of life-cycle institutional control costs in the evaluation of alternatives. Because the document is so ambiguous as to which institutional controls would be required for each specific alternative, it inhibits any possible comparison of life-cycle institutional control costs. The Army should clearly spell out the institutional controls that would be required for each alternative, and then compare the life-cycle costs for institutional controls with more conservative cleanup alternatives (i.e., unrestricted scenario).

Response 22: Agreed. Possible land use controls that would be required as a part of each remedial alternative have been added to the text. For the purpose of cost estimation, costs for these controls, such as signage, development of a deed restriction, and attorney's fees, have been incorporated into the cost estimates and are presented in the text. The revised annual O&M cost for restricted use scenarios is $81,510 (formerly $40,440). The unrestricted use scenario would not require any long-term land use controls, hence, the annual O&M costs are unchanged, estimated at $40,440.

Comment 23: Page 8, Remedial Action Objectives: The statement that "(L)ead was selected as the indicator metal for soil since the presence of lead is the most geographically dispersed over the site and by remediating lead contaminated soil, other compounds that contribute risk will also be remediated," is not adequately supported. Please provide a table/figure indicating the specific lead contamination levels comparative to the other contaminated levels proposed to be remediated by reaching the cleanup goal of 1250 ppm lead. The last sentence of this paragraph, stating that "(M)ost exceedances of these five metals are co-located with the lead exceedances," indicates that there would be metals contamination left on-site outside of the area that would be subject to the proposed cleanup goal of 1250 ppm lead. Please explain. Also, the Army does not present any remediation goals of the PAH or groundwater contamination as described on pages 3 through 5, respectively. Please reconcile.

Response 23: Acknowledged. The approach to defining the excavation area has been revised, as discussed in response to comment #1. To delineate the remedial area, initially the location of lead was mapped since it is the most geographically dispersed COC over the site. The extent of the remedial area was expanded by including any areas with samples that exceeded the metal and PAH

cleanup goals presented in Table 1. The Army will remediate to the cleanup goal scenario of soils containing lead greater than 1250 ppm or exceedances of PAH and metal cleanup goals that have been established.

Long-term monitoring for groundwater is proposed for SEAD-16 and SEAD-17. The text has been revised.

Comment 24: Page 8, Soil with Lead Concentration Exceeding 1250 mg/kg: The discussion on the proposed hot spot removal is not only lacking but also inappropriate. Not only does the Army not define what contaminants of concern would be addressed by the proposed hot spot removal, but they also do not state the cleanup goals to be achieved, or whether this hot spot removal is proposed for each alternative. The Army should define, in the description of alternatives, what contaminants are to be addressed and their respective cleanup goals. It is inappropriate for the Army to propose a hot spot removal in lieu of fully addressing the remediation of this area. The Army also needs to define the nature and extent of contamination that is being proposed for remediation of this area, instead of simply declaring a "hotspot removal." Also, is the Army proposing to perform a detailed risk assessment as part of the completion report? The definition of a completion report should be provided in the text.

Response 24: As stated in response to Comment #1, cleanup goals for PAHs and metals have been developed and, consequently, the remedial area has expanded. Therefore, the concept of "hotspots" no longer exists. All locations that include concentrations that exceed the cleanup goals are included in the remedial area, and the remedial action is driven by compliance with the established cleanup goals. It should be noted that all areas formerly referred to as "hot spots" are included in the revised remedial area based on exceedences of cleanup goals. Figures 2 and 3 have been revised to illustrate the extent of the remedial area.

A risk assessment will not be included as part of the completion report, since it is not a normal component of a completion report. Post remedial action sampling will confirm that there is no residual contamination remaining on-site.

Comment 25: Page 9, Soil with Lead Concentrations Exceeding 1000 mg/kg: The statement that "costs associated with the remediation of lead to a concentration of 1000 mg/kg was also estimated. This concentration level is associated with the New York State Department of Health (NYSDOH) guidelines for industrial use," should be revised to read that "(T)his concentration level was derived from past communications and agreement between the NYSDOH and the Army."

Response 25: Agreed. The text has been revised.

Comment 26: Page 9, Soil with Lead Concentration Exceeding 400 mg/kg + TAGM: The last sentence in this section is inappropriate and should be removed from the text.

Response 26: Agreed. The sentence has been removed from the text.

Comment 27: Page 10, SEAD-16 and SEAD-17 Remedial Alternatives: There are seven alternatives not six as stated. Alternative 4P is considered the seventh alternative.

Response 27: Agreed. The text has been revised.

Comment 28: Page 10, Alternative 2 – On-site Containment: Please expand on and explain how "(T)his alternative may also limit future land use."

Response 28: Agreed. This alternative may also limit future land use due to the inclusion of land use restrictions as an element of this remedy. Land use restrictions could include prohibiting disturbance of cover, excavation, etc. The text has been revised.

Comment 29: Page 11, Alternative 4P - Off-site Disposal: It is unclear whether the hot spot removal as outlined on page 8 would need to be performed for this alternative. Please clarify. Also, the last part of the first sentence, beginning with "even though" should be removed. Also, it is assumed that the institutional controls required for the residential scenario would be different from those that would be required under the industrial scenario, however this document does not clearly state the difference. The statement that ""(I)nstitutional controls, which are an element of this alternative, are discussed in the beginning of this section," should be removed and replaced with a discussion of the specific institutional controls proposed for this scenario.

Response 29: As stated in response to Comment #1, cleanup goals for PAHs and metals have been developed and, consequently, the remedial area has expanded. Therefore, the concept of "hotspots" no longer exists. All locations that include concentrations that exceed the cleanup goals are included in the remedial area, and the remedial action is driven by compliance with the established cleanup goals. Figures 2 and 3 have been revised to illustrate the extent of the remedial area.

The last part of the first sentence has been deleted, and the first sentence currently reads, "Alternative 4P addresses future unrestricted use of SEAD-16 and SEAD-17, which would restore the sites to the pre-disposal condition."

A discussion on common objectives of land use controls for all alternatives is presented upfront. Elements that are unique to each alternative are included as part of the detailed description of each alternative.

Comment 30: Page 11, Alternative 4, Off-site Disposal: The document should clarify if the "common fill" would be considered "clean" fill, and tested prior to backfilling. Also, the Proposed Plan should clarify that all soils failing TCLP will be handled as hazardous wastes for disposal purposes.

Response 30: Agreed. Clean backfill would be used and tested prior to backfilling. The text has been revised.

The Proposed Plan clarifies that soils failing TCLP will be handles as hazardous waste for disposal purposes.

Comment 31: Page 13, Detailed Analysis of Alternatives: The phrase "commercial use" is stated here and not anywhere else in the text. It is understood that the proposed future use of these sites is to be industrial use only, therefore please replace the phrase with more appropriate wording.

Response 31: The word "commercial" has been replaced with "industrial".

Comment 32: Page 14, Alternative 2: On-site Containment: It should be made clear in this section, and throughout the document, that additional sampling (i.e., pre-design sampling to define the extent of remediation) would be required, as stated in the Army's response to comments and in the list of elements of the preferred remedy.

Response 32: Agreed. Throughout the text, language is included to indicate that additional sampling (i.e., pre-design sampling to define the extent of remediation) would be required.

Comment 33: Page 15, Alternative 2: On-site Containment: The discussion on administrative feasibility of this alternatives, as with all of the alternatives presented in this Proposed Plan, does not discuss the implementability of institutional controls. It is the Department's understanding that the administrative feasibility of the implementation and enforcement of institutional controls at DOD facilities on the NPL is not favorable at this point. Please include a discussion. Also, community and state acceptance should be discussed under this alternative, and each of the other alternatives.

Response 33: It is the Army's understanding that EPA and the Department of Defense (DoD) have reached an understanding that requirements for implementation and enforcement of land use controls

will be detailed in the Remedial Design Plan. The discussion on land use controls in the Proposed Plan and ROD will be limited to the objectives and goals of the land use controls. The text has been revised to reflect this change.

State acceptance addresses technical and administrative concerns of the State with regard to remediation. NYSDEC is providing input during the preparation of this Proposed Plan, and their concurrence with the selected remedy will be included in the ROD. Community acceptance of the selected remedy will be evaluated following the public comment period and will be discussed in the Responsiveness Summary of the ROD. A discussion of community and state acceptance has been added under each alternative.

Comment 34: Page 16, Alternative 4, Off-site Disposal: The document states that "(A)t this time, it is anticipated that this remedial action will preclude the necessity of any additional remedial efforts at SEAD-16 and SEAD-17. However, if additional work is required in the future, this remedial action should not interfere in any way." If the Army is proposing Alternative 4 in that it will be protective of human health and the environment under an industrial scenario, these statements should be clarified. These statements are repeated on pages 17 and 18, and should be addressed in each instance as well.

Response 34: The Army find that this text leads to confusion and is not necessary. Therefore, the statements have been removed from the text.

Comment 35: Page 19, Overall Protection of Human Health and the Environment: This section does not address groundwater contamination with respect to protection of human health. Please address. This section should also discuss institutional controls and their relevance to protection of human health and the environment.

Response 35: Although the baseline risk assessment indicated that ingestion of groundwater did pose a risk to some receptors, which was caused by thallium, it is not believed that groundwater at the site poses a risk to human health. The Army questioned the thallium results used in the baseline risk assessment since thallium was not historically used in the vicinity of the site. The Army authorized an additional round of groundwater sampling in order to verify the presence of thallium. At SEAD-16, an additional sampling round for thallium was analyzed using furnace atomic absorption techniques, which has a lower detection limit for thallium (1.5 µg/L) and is not susceptible to aluminum interference. The original analytical method had a detection limit of 5 µg/L. The results demonstrated that thallium was not present in the groundwater, and prior results were likely due to laboratory errors from aluminum interference (the presence of aluminum in a sample can falsely elevate the reported concentration of thallium). In addition, the second round of sampling was

conducted using low flow techniques, which lowered reduced the turbidity of the samples. At other sites at SEDA, such as SEAD-13, low flow sampling has resulted in lower turbidity levels, which has corresponded to lower concentrations of metals. Turbidity data for the first round of sampling at SEAD-16/17 are not available. Since low flow sampling methods were not used during the first round, the turbidity levels of those samples were most likely high, which contributed to the reported elevated thallium concentrations. Accordingly, the Army believes that the thallium detections were attributed to the sample turbidity levels and analytical method. Therefore, groundwater does not pose a risk at SEAD-16. The only risk at SEAD-17 was for a day care center child (HI=1), which was also caused by ingestion of groundwater containing thallium. The additional round of groundwater sampling was not performed at SEAD-17. However, similar results to those at SEAD-16 would be expected. The elevated thallium may have been caused by high turbidity in the samples.

Land use controls aid in the protection of human health and the environment by limiting access to the site and preventing the use of groundwater as drinking water. The previous sentence has been added to the text.

Comment 36: Page 19, Compliance with ARARs: The document should point out that although there are no chemical specific ARARs for soil in New York State, NYSDEC TAGM 4046 are To Be Considered (TBCs). Also, although the Army does not expect there to be exceedances of ARARs for groundwater in the future, the Army should perform groundwater monitoring to confirm this notion.

Response 36: Agreed. NYSDEC TAGM 4046 are TBCs. The Army will perform groundwater monitoring to confirm compliance with ARARs. The text has been revised.

Comment 37: Page 20, Long-Term Effectiveness and Permanence: The NYSDEC disagrees with the Army's opinion that "(A)lternative 6 is the most effective in eliminating the long-term threats because soil washing segregates the coarse and fine factions of the soil." Alternative 4P should be the most effective in eliminating long-term threats because it involves excavating and removing the greatest amount of contamination form the site to a level that is protective for unrestricted use. Also, this section should include a discussion on institutional controls, and their role in relation to long-term effectiveness and permanence. Also, the term "EPC" is introduced without introduction and it is not located in the glossary.

Response 37: Agreed. Alternatives 2, 4, 4P, and 6 all demonstrate long-term effectiveness because they rely on disposal, containment, and treatment to reduce the hazardous constituents in the soils and ditch soils. Alternative 4P is the most effective in eliminating long-term threats since it would involve excavation and removal of contaminants, which is required in order to allow unrestricted use.

All alternatives would require temporary groundwater use restrictions until ARARs are achieved. Alternatives 2, 4, and 6 would require permanent land use controls restricting the site to industrial use only, with no daycare facility.

A discussion on the long-term effectiveness and permanence of land use controls has been added. The Army believes that land use controls are effective and permanent if monitored and enforced until such restrictions can be removed.

The term EPC, exposure point concentration, has been added to the glossary and defined in the text at its first reference on page 8.

Comment 38: Page 21, Implementability: This section should include a discussion of institutional controls and the ease, or lack thereof, of implementing all the alternatives that include this remedial element.

Response 38: It is the Army's understanding that EPA and DoD have reached an understanding that requirements for implementation and enforcement of land use controls will be detailed in the Remedial Design. The discussion on land use controls in the Proposed Plan and ROD will be limited to the objectives and goals of the land use controls. The text has been revised to reflect this change.

Comment 39: Page 21, Cost: This section states that "(A)dministrative costs include the costs for restricting future land use to non-residential." Does the Army intend on restricting this site for use as a daycare facility, or a conservation/recreation area? The term "non-residential" is too broad and should be clarified.

Response 39: The selected remedy will include language that only allows industrial use of the site. Additionally, use of the site as a daycare center will be restricted. The text has been revised to clarify this point.

Comment 40: Page 22, Preferred Alternative:

a) The first bullet of the remedial elements calls for "conducting additional sampling as part of the pre-design sampling program to further delineate the areas of excavation." This bullet should also call for the delineation of the area subject to institutional controls that is not suitable for unrestricted use due to residual contamination.
b) The third bullet should not specify a maximum excavation depth of ditch soil when there is a proposed cleanup goal of 1250 ppm lead.
c) The fifth bullet proposes excavating surface soils greater than 1250 ppm lead but does not address the subsurface soils. Please address.

d) As stated in Specific Comment 18, the text needs to indicate what contaminants the hotspot remediation is addressing.

e) The Army stated on Page 8 that a Completion Report would be submitted after the remedial actions have been completed, therefore the army should include this in the bulletized list.

f) The statement that Alternative 4 "is a cost effective, readily available alternative that does not require any long-term maintenance" should include a discussion of institutional controls, and the maintenance of such.

g) The statement that "(U)ntil the groundwater at the site meets MCL and GA standards, land use controls will be a part of the remedy," is false. Institutional controls, such as deed restrictions for industrial use only, etc. will be part of the remedy even after groundwater achieves ARARs. Please correct.

h) The last paragraph references a deed, but does not state that deed restrictions would be implemented as an institutional control. Please correct. Please note that for any deed restriction which may be instituted to ensure that this remedy is adequately protective of human health and the environment, a clause should be included compelling the property owner to annually certify to the New York State Department of Environmental Conservation that the deed restriction is in place, and that the use of the property is consistent with that restriction.

i) Also, under the bulleted items, please revise the statement "(C)onducting annual soil sampling in Kendaia Creek at four locations," to read (C)onducting annual sediment sampling in Kendaia Creek."

Response 40:

a) Agreed. The Army will also use the pre-design sampling and analysis information to delineate the area where land use restrictions will be required

b) Agreed. Excavation will continue until cleanup goals are achieved.

c) At SEAD-16, there are three locations (the area around SB16-2, SB16-4, and SB16-5) that would required subsurface excavation. This information has been added to the text. At SEAD-17 there is no identifiable soil exceeding the proposed cleanup goals in the subsurface. Table 3B indicates that 2 out of 10 samples exceeded the TAGM, however those samples were collected from the surface (0-2 feet).

d) As described in detail in previous responses, cleanup goals have been established for antimony, arsenic, cadmium, copper, mercury, thallium, zinc, and PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, and dibenz(a,h)anthracene). All excavation will continue until these CUGs have been achieved. The text has been revised.

e) Agreed. A bullet has been added that includes the submission of a Completion Report as an element of the remedy.

f) The text has been revised to reflect that Alternative 4 would also require maintenance of land use controls, such as fences and signs.

g) Agreed. There will be a temporary groundwater use restriction until groundwater concentration levels meet MCL and GA standards. Land use controls will be a permanent part of the remedy to restrict the site for industrial use only and to prevent site use for a daycare facility. The text has been revised.

h) It is the Army's understanding that EPA and DoD have reached an understanding that requirements for implementation and enforcement of land use controls will be detailed in the Remedial Design. The discussion on land use controls in the Proposed Plan and ROD will be limited to the objectives and goals of the land use controls. The text has been revised to reflect this change.

i) Agreed. The text has been revised.

Comment 41: Glossary: Under the BRAC definition it states that "(B)ase closure is in the process of being performed." It is the Department's understanding that the base has already been closed. If this is the case, then the definition should be corrected. NYSDEC is incorrectly defined as the "New York State Department of Environmental Protection." Under TAGM, the last sentence should be removed from the text.

Response 41: Agreed. The glossary has been revised.

Comment 42: Table 1A, 1B, 1D, and 2A: No footnote is provided for "n-nitrosodiphenylamine[1]".

Response 42: Agreed. The footnote has been deleted from all tables. It should be noted that the tables have been renumbered as Table 2A, 2B, 2D, and 3A.

Comment 43: Table 1D and 4D: These tables should define "action level."

Response 43: Agreed. The action level was NYSDEC sediment criteria, based on site specific total organic carbon (TOC) data. This information has been added to the tables. It should be noted that these tables have been renumbered Table 2D and 3D.

Comment 44: Table 1E: The values in the "average" and "frequency of detection" columns are the same. Please revise the "average" column to reflect a number not a percentage.

Response 44: Agreed. The table has been revised. It should be noted that the table has been renumbered Table 2E.

Comment 45: Table 3: This table should include PAH contamination (See Comment 2).

Response 45: Agreed. CUGs for carcinogenic PAHs whose NYSDEC TAGM 4046 values are human health based (benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, and dibenz(a,h)anthracene) have been developed and are presented in the table. It should be noted that this table has been renumbered as Table 1.

Comment 46: Tables 4 and 5: To be consistent with the text, all alternatives presented on these tables should indicate whether institutional controls would be required for each alternative.

Response 46: Agreed. The tables have been revised.

Comment 47: Table 6: This table should indicate the maintenance costs for institutional controls in the Annual O&M Costs column.

Response 47: Agreed. The maintenance costs for institutional controls will be included in the annual O&M costs (refer to comment #22). A note will be added to Table 6 to reflect this revision.

Comment 48: Tables 7 and 8: EPCs should be removed from these tables.

Response 48: Agreed. The remedial action will comply with the stated cleanup goals; therefore, no residual contamination exceeding cleanup goals is expected. Tables 7 and 8 have been revised and the EPCs have been removed from the tables.

Comment 49: As a suggestion, revising the tables by reducing the number of significant figures would make the tables more user-friendly.

Response 49: Agreed. The tables have been revised.

Comment 50: Appendix A: On page 2 it states that drainage ditch soils "would be removed to an approximate depth of 12 inches." In the Preferred alternatives section of the Proposed Plan it calls for removing ditch soils to a one foot depth. Please explain how the cleanup goals of 1250 ppm lead and 400 ppm lead and other metals to TAGM would result in the same depth of ditch soil to be remediated when clearly in the cost calculations it is estimated that the 400 ppm cleanup goal requires 3 times the amount of ditch soil to be remediated compared to the 1250 ppm cleanup goal. Please reconcile.

The last statement under Long-Term Effectiveness and Permanence should include a discussion of groundwater use restrictions.

Under Implementability, the statement "interaction with NYSDEC and EPA" should be removed from the text. Coordination with the regulatory agencies should not be included in the administrative feasibility discussion.

Response 50: a) Disagree. Although the depth of excavation of ditch soil is identical for both alternatives, the area of excavation is significantly larger for Alternative 4P. The area of ditch soil to be excavated under a cleanup goal of 1250 ppm lead was estimated at 7420 SF, which results in a volume of 275 CY. In Alternative 4P under a cleanup goal of 400 ppm lead and TAGM for other metals, the area of ditch soil to be excavated was approximated at 14,370 SF, which results in a volume of 532 CY. Therefore, Alternative 4P would require that approximately 2 times greater volume of ditch soil be excavated than under Alternative 4.

b) Agreed. All alternatives would require temporary groundwater use restrictions until ARARs are achieved. Alternatives 2, 4, and 6 would require permanent land use controls restricting residential use and land use as a daycare facility. Once groundwater ARARs are achieved, Alternative 4P would be permanent.

c) Agreed. The text has been revised.

TABLE A-1
Distribution of Metals in Soil at SEAD-16
SEAD-16/17
Seneca Army Depot Activity

		Proposed CUGs for Final Proposed Plan (mg/kg) [1]	DEPTHS									
			0-.2		0-.2 (DUP)		1'-2'		2'-4'		6'-12'	
SB16-1	Arsenic	22	5	J					3.3	J	6.3	J
	Cadmium	14	0.36						0.07	U	0.19	
	Copper	331	19	J					23.6	J	66.4	
	Lead	1250 [3]	21.9	j					12.6	J	309	
	Mercury	0.5	0.1	J					0.4	U	0.48	
	Thallium	2.6	1.8						0.94	U	0.85	
	Zinc	773	99.8						54.8		119	
SB16-2*	Arsenic	22	*SS16-3 is				6.9	J				
	Cadmium	14	nearby				0.45					
	Copper	331					206	J				
	Lead	1250 [3]					791	J				
	Mercury	0.5					**1.9**	**J**				
	Thallium	2.6					0.91					
	Zinc	773					183					
SB16-3	Arsenic	22	4	J	3.8	J						
	Cadmium	14	0.06	U	0.06	U						
	Copper	331	35.6	J	33	J						
	Lead	1250 [3]	65.9	J	51.7	J						
	Mercury	0.5	0.05	U	0.04	J						
	Thallium	2.6	0.82	U	0.79	U						
	Zinc	773	84.5		79.8							
SB16-4*	Arsenic	22	3	J					5.2	J		
	Cadmium	14	0.18						0.06			
	Copper	331	39.7	J					16.4	J		
	lead	1250 [3]	193	J					21.4	J		
	Mercury	0.54	0.51	J					0.04	J		
	Thallium	2.6	0.72						0.87	U		
	Zinc	773	90.4						89.2			
SB16-5*	Arsenic	22					6.9	J	5	J		
	Cadmium	14					0.09		0.09			
	Copper	331					**736**	**J**	26.6	J		
	lead	1250 [3]					**35400**	**J**	61.6	J		
	Mercury	0.5					0.54	J	0.03	U		
	Thallium	2.6					**88.2**		0.85	U		
	Zinc	773					165		70.9			

* Location included in area to be remediated to a depth of 1 ft (except SB16-4 and SB16-5 which are being excavated to 3 ft. and SB16-2 which is being excavated to 2 ft.).

bold Indicates that the concentration exceeds the risk-based CUGs

1. Soil criteria are human health based cleanup goals derived under the industrial scenario for the day-care child receptor. The CUG value is normalized according to the post-remediation HQ distribution for a day-care child receptor.
2. The cleanup goal value is based on the NYSDEC TAGM 4046, which is site background collected for SEDA, and was adopted since the risk-based value 0.7 was below background.
3. This value was selected as the clean up goal for lead in accordance with the publication "Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil" (USEPA, December 1996). Refer to the Remedial Action Objectives section in the PRAP for a more detailed discussion.

TABLE A-2
Distribution of Metals in Soil at SEAD-17
SEAD-16/17
Seneca Army Depot Activity

		Proposed CUGs for Final Proposed Plan (mg/kg) [1]	DEPTHS							
			0-.2		2'-4'		2'-4' (DUP)		4'-6'	
SB17-1	Arsenic	21.5	4.6		5.2				3.4	
	Cadmium	14.4	0.73	U	0.74	U			0.56	
	Copper	331	46.4		26.9				20	
	Lead	1250 [3]	266		11.4	J			7.5	J
	Mercury	0.54	0.05	J	0.06	J			0.03	UJ
	Zinc	773	93.4		80.2				57.1	
SB17-2*	Arsenic	21.5	5.2		6.9		6.3			
	Cadmium	14.4	2.8		0.74	U	0.6	U		
	Copper	331	85.1		18.5		21.5			
	Lead	1250 [3]	686		13		11.2			
	Mercury	0.54	0.04	U	0.04	J	0.04	J		
	Zinc	773	172		63		76.7			
SB17-3	Arsenic	21.5	4.1		5.4					
	Cadmium	14.4	0.43	U	0.74	U				
	Copper	331	25.9		26.9					
	Lead	1250 [3]	24.6	J	21.2	J				
	Mercury	0.54	0.06	J	0.04	J				
	Zinc	773	69.7		69					
SB17-4*	Arsenic	21.5	4.9		5.7					
	Cadmium	14.4	0.43		0.38	U				
	Copper	331	24		22.7					
	Lead	1250 [3]	12	J	11.7	J				
	Mercury	0.54	0.04	U	0.03	J				
	Zinc	773	64.2		85.1					

* Location included in area to be remediated to a depth of 1 ft.

bold Indicates that the concentration exceeds the risk-based CUGs

1. Soil criteria are human health based cleanup goals derived under the industrial scenario for the day-care child receptor. The CUG value is normalized according to the post-remediation HQ distribution for a day-care child receptor.
2. The cleanup goal value is based on the NYSDEC TAGM 4046, which is site background collected for SEDA, and was adopted since the risk-based value 0.7 was below background.
3. This value was selected as the clean up goal for lead in accordance with the publication "Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil" (USEPA, December 1996). Refer to the Remedial Action Objectives section in the PRAP for a more detailed discussion.

Response to Comments from the U.S. Environmental Protection Agency

Subject: Draft Final PRAP for SEAD-16 & 17
Seneca Army Depot
Romulus, New York

Comments Dated: October 29, 2002

Date of Comment Response: April 4, 2003

General Comments:

Comment 1: Page 1, 2nd Column, last ¶: Please update the address to receive comments and include your e-mail address.

Response 1: The mailing address has been updated. The Army requests that all comments be formally submitted to the Army in writing.

Comment 2: Page 4, 1st Column, 1st ¶, 2nd Sentence: Reference is made to groundwater background concentrations. Please provide a table with groundwater background concentration values.

Response 2: In the past the Army has not included this information in a Proposed Plan and does not see the relevance in including this information. Please refer to Table 6-2E in the RI for the groundwater background data.

Comment 3: Page 5, 1st Column, 2nd ¶, last Sentence: Confirm that thallium was also not detected at SEAD-17 by the additional groundwater sampling as discussed under SEAD-16 on page 4. Repeat last paragraph of the referenced groundwater discussion (regarding additional round of sampling) for SEAD-16 (page 4) as a new paragraph at the end of the Groundwater section under SEAD-17.

Response 3: The additional round of groundwater sampling was not performed at SEAD-17. However, similar results to those at SEAD-16 would be expected. For SEAD-16, the additional sampling round was analyzed using graphite furnace atomic absorption techniques, which has a lower detection limit for thallium (1.5 µg/L) and is not susceptible to aluminum interference. The original analytical method had a detection limit of 5 µg/L. The analytical results indicated that thallium was not detected in any of the on-site monitoring wells at SEAD-16, and it was concluded that thallium is not a COC in groundwater at SEAD-16. The additional groundwater sampling was conducted using low flow sampling techniques. At other sites, such as SEAD-13 (see attached), low flow sampling has resulted in lower turbidity levels, which has corresponded to lower concentrations of metals. Turbidity data for the first round of sampling at SEAD-16/17 are not available. Since low flow sampling method's were not used during the first round of sampling, the turbidity levels of those

samples were most likely high, which contributed to the reported elevated thallium concentrations. Accordingly, the Army believes that the thallium detections at SEAD-17 were attributed to the sample turbidity levels and analytical method. Thallium is not considered a parameter that is present in the groundwater. The text has been revised.

Comment 4: Page 8, 1st Column, 1st ¶, last 2 Bullets: Please delete the last two bullet items (RAOs) as, few if any, of the alternatives seem to address migration or restoration of media as bulleted. Add a new bullet describing the prevention of future exposure by institutional controls and groundwater monitoring until MCLs are met.

Response 4: Agreed. The text has been revised.

Comment 5: Page 8, 2nd Column, 3rd ¶, 2nd Sentence: Please provide the background HQ calculations or reference document with the calculations.

Response 5: Agreed. The text has been revised to include reference to the Remedial Investigation for SEAD-12, Table M.111 in Appendix M, which presents the background HQs for the short-tailed shrew, which is a similar receptor to a deer mouse.

Comment 6: Page 9, Summary of Remedial Alternatives: Please include language for institutional controls and Five-Year Reviews to each of the applicable remedies. Institutional controls should include restriction of land use to non-residential and groundwater use until MCLs are met.

Response 6: Agreed. Since all alternatives (except Alternative 4P) would result in contaminants remaining at the site that are above levels that allow unlimited use and unrestricted exposure, land use controls and five-year reviews would be required in order to attain remedial action objectives. All sites, including Alternative 4P, would require a groundwater use restriction until groundwater ARARs are achieved. Five-year reviews would be required to evaluate whether the response actions remain protective of public health and the environment. The text has been revised.

Comment 7: Page 15, Alternative 4 & 6, Cost Range: Please provide an explanation as to why there is a cost range under the Capital Cost and the Present Worth Cost for Alternatives 4 and 6.

Response 7: The range in costs is due to a range of cleanup goals evaluated for cost under each alternative (1250 mg/kg lead, 1000 mg/kg lead, 400 mg/kg lead, and 400 mg/kg lead + TAGMs).

Comment 8: Page 20, 1st Column, last ¶: Please provide an explanation as to why there may be post-remediation exceedances of TAGM values (e.g., will still be protective with restriction to industrial use).

Response 8: It should be noted that since the FS, risk-based cleanup goals (CUGs) for certain carcinogenic PAHs and metals (antimony, arsenic, cadmium, copper, mercury, thallium, and zinc) have been established. CUGs for PAHs were derived by following the same approach used at SEAD-59/71. PAH CUGs were derived using the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046: *Determination of Soil Cleanup Objectives and Cleanup Levels* method for establishing CUGs for carcinogens based on a future construction worker receptor (daycare facility use will be restricted), the most conservative receptor under the intended future use scenario (industrial). CUGs for metals were derived by back calculating concentrations of metals that, combined, would yield a non-carcinogenic risk less than 1. In order to account for the fact that each metal constituent of concern (COC) is only a partial contributor to total risk, the post-remediation hazard index (HI) for each COC at SEAD-17 was normalized to reflect the magnitude of risk of one metal in comparison to the total risk from all the metals of concern. It should be noted that *post-remediation* assumes that all surface soil samples located within the boundary of the area delineated by concentrations of lead greater than 1250 mg/kg have been removed. The normalized HI was subsequently used as the acceptable risk value in the calculation to determine the CUGs for metals. The risk-based CUGs for PAHs and metals are presented in Table 1.

The remedial action will comply with the cleanup goals, shown in the revised Table 1. Tables 7 and 8 present the maximum level of each COC that is expected to remain on-site once the remedial action is complete. The text has been revised to reflect that there will be no post-remediation exceedances of the cleanup goals.

Response to Comments From New York State Department of Environmental Conservation

Subject: Draft Proposed Remedial Action Plan (PRAP) for SEAD-16 and 17
Seneca Army Depot
Romulus, New York

Comments Dated: November 13, 2001

Date of Comment Response: May 14, 2002

General Comments:

It is not clear if the proposed remedy will leave the site for unrestricted use or not. The Proposed Plan should be specific in defining all the components of a proposed remedy. This includes institutional controls.. If the Army is intending on leaving residual contamination above acceptable levels for unrestricted use, institutional controls will be necessary to prevent unacceptable human exposures. This Proposed Plan must include the definition and description of the specific institutional controls envisioned. The geographic extent and the specific restrictions (i.e., residential, childcare facility, etc.) of the institutional controls must be included in the Proposed Plan and the subsequent Record of Decision. In addition, institutional controls should be compared to the evaluation criteria just as any other component of a remedial alternative. At least one unrestricted use alternative should be brought forth into the detailed analysis of alternatives to present a full comparison of the advantages and disadvantages of a range of alternatives, from unrestricted use to a restricted use scenario that requires institutional controls and long-term monitoring. The comparative analysis of institutional controls, including cost, implementability, and administrative feasibility needs to be addressed in this Proposed Plan.

Since groundwater contamination is not addressed by this remedy, some type of institutional control limiting groundwater usage must be included in addition to the proposed long-term groundwater monitoring.

The State requests the following spatial amendments be made to excavation areas for Alternative 4 (Off- Site disposal):

1. SEAD 16: The present spatial configuration of the excavation area does not include surface soil areas containing elevated levels of carcinogenic PAHs (up to 1,159 mg/kg). The inclusion of the following soil sampling areas in the final excavation are is requested: SS 16-1; SS 16-31; SS16-35; and SB16-4.

2. SEAD 17: As stated on page 8 of the draft Proposed Plan for concentrations of metals in soil, "...results indicate that metal concentrations of 18 mg/kg, 359 mg/kg, 539 mg/kg, 2.69 mg/kg

for antimony, copper, zinc, mercury and thallium respectively, will not pose unacceptable risks for the future industrial use scenario...Therefore, the delineated area for lead cleanup...has been examined to include areas with concentrations exceeding the above-mentioned levels for the future industrial use scenario." These values were calculated based upon the maximum metal concentrations that would be protective of a day-care/residential child in an industrial and residential use scenario. However, when comparing the metals concentration pattern to the proposed delineated area to be excavated, the delineated area does not include all areas which metal concentrations exceed the above values. The soil sample from area SS17-10 contains 52 mg/kg antimony and 546 mg/kg copper and therefore must be included in the area of excavation.

This draft lacks data tables identifying contaminants of concern, corresponding concentrations, proposed cleanup standards and concentrations of contaminants proposed to be left on-site. This information need to be clearly presented in the revised Proposed Plan.

Response: Several changes have been made to the document in response to this comment. Data tables identifying the contaminants of concern and their concentrations and cleanup goals have been added to the report. In addition, the elements of the remedy have been more clearly outlined in the "Preferred Alternative" section. Figures 2 and 3 have been added to show the areas of remediation for the remedial action at both sites. Responses to additional points made above follow:

Future Use

The remedial action objectives for SEADs-16 and 17 were based upon the intended future land use, which is industrial use for both sites. Residential land use was only considered to compare the cost of remediating the sites for this land use versus the cost to implement restricted use on the sites. The goal of the remedial action is to prevent ingestion of and dermal contact with soils and ditch soils with lead concentrations above 1,250 mg/kg, which is based on the future industrial use scenario. The text has been revised to clearly state that the proposed remedy is for future industrial land use. The elements of the remedy have been more clearly outlined in the *Preferred Alternative* section.

Institutional Controls

Text explaining the use of institutional controls has been added to the sections entitled *Summary of Remedial Alternatives* and *Preferred Alternative*. The use of institutional controls may include access control, land use restrictions, and the restriction of groundwater use. The land use controls are intended to prevent the use of groundwater as drinking water as long as the concentrations in the water are greater than GA or MCL standards. The report considers clean up for industrial use and makes reference to the future use of the property being industrial, which, by definition, will

necessitate the imposition of a land use restriction. Institutional controls will be part of the overall remedial strategy to restrict exposure to those activities involving industrial use. Upon land transfer, language will be included in the deed that would require the continued use and maintenance of the land use controls.

Institutional controls have been addressed in the cost estimates for all alternatives to cover semi-annual groundwater monitoring.

Detailed Analysis

The evaluation of an unrestricted land use alternative under the Alternative 4, Off-Site Disposal, has been conducted and will be added to the PRAP as Appendix A. For unrestricted land use, lead concentrations of 400 mg/kg + TAGM have been evaluated. The 400 mg/kg level of lead in soil is the EPA recommended level for residential use.

Groundwater

Groundwater use restrictions will be required until the groundwater monitoring shows that the concentrations of contaminants of concern have decreased to below the GA or MCL criteria. This statement has been added to the text in the institutional controls discussion.

Groundwater is not considered to be a media of concern because the results of the risk assessment showed no risk to future receptors. In addition, four of the metals that were detected at concentrations exceeding the groundwater criteria were also detected in background groundwater samples.

Amendments to Excavation Areas

Additional locations for removal will only be incorporated to the extent that the railroad tracks are not disrupted. The area between the northwest corner of Building S-311 and the railroad tracks has been added as an area of hotspot removal. This area includes the soil sampling locations SS16-1 and SB16-4. The soil sampling locations, SS16-35 and SS16-31, will be removed as hotspots at locations adjacent to the railroad tracks. The areas will be excavated to a depth of 12 inches and backfilled with clean soil. No confirmatory sampling will be conducted.

The area around soil sampling location SS17-10 has been added as a hot spot removal location. The area will be excavated to a depth of 12 inches and backfilled with clean soil. No confirmatory sampling will be conducted.

Specific Comments:

Comment 1: Please remove "Superfund" from the title. The Army is a responsible party as defined in Section 107 of CERCLA therefore the term "Superfund" is not applicable to this site.

Response: Agreed. The title has been revised.

Comment 2: Page 1, Purpose of Proposed Plan: In the third sentence, please remove the phrase "with support from" and replace it with more appropriate wording such as "in cooperation with." The USEPA and NYSDEC entered into the Federal Facilities Agreement as equal entities therefore the regulatory agencies are not "support" agencies as otherwise indicated.

Response: Agreed. The text has been revised.

Comment 3: Page 2, Site Background: The last sentence of the third paragraph states that "access to the site is restricted because the site is located in the ammunition storage area." It is the Department's understanding that there is no ammunition being stored on-site. If that is the case, then the Army should denote that the site is located in the "former" ammunition storage area.

Response 3: Agreed. The word "former" has been added to the text.

Comment 4: Page 5, Additional Information on SEAD-25 and SEAD-26 Human Health Risk Assessment: The statement "the decision to perform a remedial action will be based upon the intended land use scenario" should be removed from the text. The decision to perform a remedial action should be based upon a remedial investigation/feasibility study that includes a detailed analysis of remedial alternatives, not simply on the basis of the intended land use scenario.

Response: This comment does not apply to the SEAD-16 and 17 PRAP, but the SEAD-25 and 26 PRAP. The referenced statement is not found in the SEAD-16 and 17 PRAP.

Comment 5: Page 7, Remedial Action Objectives: The statement that "the selection of lead as a cleanup goal is a result of discussion between the Army, USEPA, and NYSDEC," is inappropriate, incorrect and should be removed from the text. Please refer to the general comments section of the NYSDEC's February 21, 2001 letter which states that "the FS does not clearly demonstrate if or how using a cleanup goal for lead will affect the other contaminants. The level of contaminants to be remediated or left untreated onsite should be evaluated and discussed for each alternative to provide a better perspective during the comparative analysis for each cleanup goal. Without such a discussion

it is difficult to support the Army's conclusion that the remedies evaluated are protective of human health."

Response 5: Acknowledged. The phrase has been removed from the text.

Lead was used as the indicator compound for determining the volume of soil to be remediated because lead was the most widespread metal of concern in soil. Four levels of protection for lead have been considered. These levels include 1250 mg/kg, 1000 mg/kg, 400 mg/kg, and 400 mg/kg + TAGM. In addition to lead, cleanup goals were calculated for antimony, copper, mercury thallium, and zinc for the industrial and residential scenarios. These cleanup goals were included in the four clean-up scenarios.

Results of the calculation indicate that metal concentrations of 18 mg/kg, 359 mg/kg, 539 mg/kg, 2.69 mg/kg, and 3.59 mg/kg for antimony, copper, zinc, mercury, and thallium, respectively, will not pose unacceptable risks for the future industrial use scenario. Therefore, the areas of soil to be remediated for lead cleanup concentrations of 1,250 and 1,000 mg/kg also include areas with concentrations exceeding the above-mentioned levels for the future industrial use scenario.

Results of the calculation indicate that metal concentrations of 12.8 mg/kg, 256 mg/kg, 385 mg/kg, 1.92 mg/kg, and 2.56 mg/kg for antimony, copper, zinc, mercury, and thallium, respectively, will not pose unacceptable risks for the future residential use scenario. Therefore, the areas of soil to be remediated for a lead cleanup concentration of 400 mg/kg also include areas with concentrations exceeding the above-mentioned levels for the future residential use scenario.

A discussion on residual contamination has been added to the text under the *Long-Term Effectiveness and Permanence* section under Evaluation of Alternatives. The goal of the remedial action is to have no residual contamination in soils above the clean up goals developed for the future industrial use scenario (lead concentration of 1250 mg/kg). The limits of excavation were established with the aim of achieving this objective. A table has been added to the PRAP presenting the clean up goals for soil for the future industrial use scenario.

After remediation is completed at SEAD-16, the maximum concentrations of antimony, copper, lead, mercury, and thallium, are expected to be below the calculated concentrations determined to be protective of human health under an industrial scenario. Although the maximum concentration of zinc exceeds the clean up goal, the EPC for zinc is below the clean up goal.

After remediation is completed at SEAD-17, the maximum concentrations of lead and the five metals, antimony, copper, mercury, thallium, and zinc, are expected to be below the calculated concentrations determined to be protective of human health under an industrial scenario.

Comment 6: Page 8, Soil with Lead Concentration Exceeding 1250 mg/kg: It states that the cleanup goal of 1250 mg/kg of lead "is likely to be result in residual levels of lead at the site that are protective of all receptors in a residential scenario." However, other metals "such as arsenic and cadmium, exceeded the EPCs outside the proposed lead cleanup areas." The draft needs to clarify that lead is not the only contaminant of concern at this site and discuss the post-remedial action levels remaining on-site of other contaminants under various alternatives.

Response 6: As stated in the response to Comment 5, lead was used as the indicator compound for determining the volume of soil to be remediated because lead was the most widespread metal of concern in the soil. However, cleanup goals were also calculated for antimony, copper, mercury, thallium, and zinc. The areas of remediation were established based on the values derived for the future industrial use scenario. This information was already provided in the section titled *Remedial Action Objectives*. A sentence has been added to that section stating that cleanup goals were also derived for the five metals.

The goal of each remedial action alternative is to have no residual contamination in soils above the clean up goals developed for the future industrial use scenario. As presented in the response to Comment 5, the cleanup goal is 1250 mg/kg for lead and the cleanup goal is 18 mg/kg, 359 mg/kg, 539 mg/kg, 2.69 mg/kg, and 3.59 mg/kg for antimony, copper, zinc, mercury, and thallium, respectively. The text of the PRAP states that the alternatives were developed based on the proposed cleanup level of 1250 mg/kg for lead.

Tables A-1 and **A-2,** which present the post-remediation EPCs and maximum concentrations of antimony, copper, mercury, thallium, and zinc at each site, will be added to the PRAP as Tables 7 and 8. After the remediation is complete, the EPC values of these metals are expected to be below the calculated concentrations determined to be protective of human health under an industrial scenario. The post-remedial EPCs for arsenic and cadmium were also calculated for SEAD-17. The EPC for arsenic is less than the TAGM and the EPC for cadmium slightly exceeds the TAGM value.

After remediation is completed at SEAD-16, the maximum concentrations of antimony, copper, lead, mercury, and thallium, are expected to be below the calculated concentrations determined to be protective of human health under an industrial scenario. Although the maximum concentration of zinc exceeds the clean up goal, the EPC for zinc is less than the clean up goal.

After remediation is completed at SEAD-17, the maximum concentrations of lead and the five metals, antimony, copper, mercury, thallium, and zinc, are expected to be less than the calculated concentrations determined to be protective of human health under an industrial scenario.

After remediation at SEAD-16, the only expected exceedance of TAGMs for arsenic or cadmium is one hit of arsenic at a concentration of 9.9 mg/kg, which only slightly the TAGM value of 8.2 mg/kg.

The post-remedial concentrations of arsenic and cadmium were considered at SEAD-17. After remediation, only one detection of arsenic, 8.9 mg/kg, slightly exceeds the TAGM value of 8.2 mg/kg. For cadmium, there are expected to be eight exceedences of the TAGM, but seven of these detections are less than twice of the TAGM value. The maximum concentration of cadmium is expected to be 5.6 mg/kg. However, the post-remediation EPC for cadmium is expected to be 2.45 mg/kg, which only slightly exceeds the TAGM value.

The information discussed above has been added to the text in the *Long-Term Effectiveness and Permanence* section under *Evaluation of Alternatives*. It should be noted that only the intended future land use, industrial use, will be considered in the PRAP; consequently, discussion of analysis relating to a residential scenario has been removed from the document.

Comment 7: Page 8, with Lead Concentration Exceeding 1250 mg/kg: The statement "and the future land use of the site is intended to be industrial, therefore, in general, the proposed soil cleanup goal of 1250 mg/kg will be protective of the environment," needs to be clarified. Is it the Army's contention that the soil cleanup objective is protective of the environment in an industrial setting only? Also, on page 2-12 of the FS it states that "a post remediation ecological risk assessment will be conducted to ensure the remediation plan is protective of the environment." However, the Proposed Plan does not address this.

Response 7: It is the Army's intent to clean up soil to be protective of the environment in an industrial setting. After completion of the remedial action at both sites, a Completion Report that will demonstrate that the remedial action is protective of human health and the environment, will be submitted. A post remediation ecological risk assessment will not be conducted. A statement that describes the submittal of a Completion Report has been added to the referenced paragraph.

Comment 8: Page 8, Soil with Lead Concentration Exceeding 400 mg/kg: The draft states that to comply with NYS regulations to "restore the site to pre-disposal conditions, to the extent feasible and authorized by law" the Army calculated the "costs associated with the remediation of lead to pre-disposal (or residential) conditions." As stated by the NYSDEC numerous times over the years, at least one unrestricted use alternative should be brought forth into the detailed analysis of alternatives. A simple cost comparison is not sufficient to present a full comparison of the advantages and disadvantages of a range of alternatives, from unrestricted use to a restricted use scenario that requires institutional controls and long-term monitoring.

The statement that "the decision to accept the residential use scenario clean-up goal would be considered if the cost comparison showed that the cost to achieve lower cleanup level was affordable, in the opinion of the Department of Defense" is not satisfactory.

Response 8: Acknowledged. The evaluation of unrestricted land use under Alternative 4, Off-Site Disposal, will be evaluated against the nine criteria and will be submitted as Appendix A to the PRAP. For unrestricted land use, lead concentrations of 400 mg/kg + TAGM will be the cleanup goals. The 400 mg/kg level of lead in soil is the EPA recommended level for residential use.

Comment 9: Page 9, Alternative 2- On-site Containment: It states that "regrading of the site and installation of institutional controls... will be required" for Alternative 2, however there is no mention of institutional controls in the detailed analysis of alternatives. See General Comments above. The draft also states "(T)his alternative may also limit the future land use." Does this imply that the land use will have to be restricted? The Proposed Plan should clarify this.

Response 9: As stated above, a discussion of institutional controls has been added to the description of the remedial alternatives. The PRAP considers clean up for the future industrial use scenario, which will necessitate the imposition of a land use restriction.

Comment 10: Page 12, Alternative 2: On-site Containment: The draft states that "Alternative 2 will leave contaminated soil in place" and "it may restrict future use of the land," however there is no discussion of institutional controls. The Proposed Plan needs to be clear on whether the site will need to be restricted or not. See General Comments and Specific Comment #10 above.

Response 10: As stated in the response to the General Comment, the use of institutional controls including access control, land use restrictions, and the restriction of groundwater use, has been added to the section titled *Summary of Remedial Alternatives*. The report considers clean up for industrial use and makes reference to the future use of the property being industrial, which, by definition, will necessitate the imposition of a land use restriction. Institutional controls will be part of the overall remedial strategy to restrict exposure to those activities involving industrial use. Upon land transfer, language will be included in the deed that would require the continued use and maintenance of the land use controls.

Comment 11: Page 13, Alternative 4: Off-site Disposal: The statement that "the remediation areas have already been initially delineated" needs to be clarified. As stated in the NYSDEC's February 21, 2001 letter to the Army concerning the FS, it is our opinion that "the estimate of quantities to be remediated cannot justifiably be made when the remediation limit is largely undefined." The Army's July 31, 2001 response to comments stated that "(A)dditional sampling has been planned as part of a

pre-design sampling program to further delineate the areas." The Army needs to add language to the Proposed Plan explaining the extent and purpose of this pre-design sampling.

Response 11: Agreed. An additional sampling program will be conducted as part of a pre-design sampling program to define the perimeter of the area of excavation. This sampling program has been added to the bulleted items in the *Preferred Alternative* section.

Comment 12: Page 16. Compliance With ARARs: The draft states that "exceedance of ARARs will not be expected in the future, even without any action, according to modeling results presented in FS." However, there is no discussion or presentation in the FS regarding modeling results and future groundwater conditions.

Response 12: Agreed. The text has been revised to indicate that the Fate and Transport model, which was originally run for the RI Report, was rerun for the FS Report. A discussion of the model and the results are presented in Section 1.4 (Fate and Transport) of the FS Report. The fate and transport model consisted of a conceptual site model, water balance calculation, and the VLEACH model. A detailed discussion of the numerical models and their applications and assumptions is presented in the RI Report.

The fate and transport model was rerun for the FS Report using site specific information. The results suggested that the metals in the on-site soil tend to strongly bind to soil instead of partitioning into the water. For SEAD-16, the results of the model indicate that groundwater concentrations of copper, arsenic, mercury, and cadmium will not increase or exceed the respective groundwater standard in 100,000 years.

For SEAD-17, the results of the model indicate that groundwater concentrations of lead, copper, antimony, zinc, silver, and cadmium will not exceed the respective groundwater standard for 100,000 years.

Comment 13: Page 18. State Acceptance: After the phrase "State comments received on" please insert the following: "the RI report, FS report and."

Response: Agreed. The text has been revised.

TABLE A-1
SEAD-16 RESIDUAL CONTAMINATION
Proposed Remedial Action Plan for SEAD-16/17
Seneca Army Depot

	Max Concentration to be Protective of Human Health [1] (mg/kg)	EPCs [2] (mg/kg)	Max Hit (mg/kg)	TAGM 4046 (mg/kg)
	Industrial Use Day Care Child	Post Remediation	Post Remediation	
Antimony	18.0	4.78	17.1	5.9
Copper	359	69.8	204	33
Mercury	2.69	0.350	1.2	0.1
Thallium	3.59	0.920	1.8	0.7
Zinc	539	133	1270	110

Notes:

1. The maximum concentrations to be protective of human health under an industrial use scenario were calculated in Table 2-3 in the Final FS, February 2001.
2. The EPC values were determined by selecting the lower value of either the max concentration or the calculated 95% UCL of the mean for the surface soil samples that were not located in the area included in the proposed remedial action.

TABLE A-2
SEAD-17 RESIDUAL CONTAMINATION
Proposed Remedial Action Plan for SEAD-16/17
Seneca Army Depot

	Max Concentration to be Protective of Human Health [1] (mg/kg)	EPCs [2] (mg/kg)	Max Hit (mg/kg)	TAGM 4046 (mg/kg)
	Industrial Use Day Care Child	Post Remediation	Post Remediation	
Antimony	18.0	5.00	5.0	5.9
Arsenic	NA	5.90	8.9	8.2
Cadmium	NA	2.5	5.6	2.3
Copper	359	83.4	182	33
Mercury	2.69	0.150	1.00	0.1
Thallium	3.59	0.686	1.50	0.7
Zinc	539	230	488	110

Notes:

1. The maximum concentrations to be protective of human health under an industrial use scenario were calculated in Table 2-3 in the Final FS, February 2001.
2. The EPC values were determined by selecting the lower value of either the max concentration or the calculated 95% UCL of the mean for the surface soil samples that were not located in the area included in the proposed remedial action.

NA - Not Applicable: values were not determined for this constituent.

Response to Comments From United States Environmental Protection Agency

Subject: Draft Proposed Remedial Action Plan (PRAP) for SEAD-16 and 17
Seneca Army Depot
Romulus, New York

Comments Dated: March 7, 2002

Date of Comment Response: May 14, 2002

General Comments:

Comment 1: Page 1: Purpose of Proposed Plan, 1st Column, ¶1
Clarify the meaning of the word "Active" within the name of SEAD-17 in light of the closure status of Seneca, which is not an active facility anymore. Also, clarify the role of the Corps versus the Army (i.e., who is responsible to sign and implement the Record of Decision [ROD]).

Response 1: Agreed. A discussion has been added to the Site Background section on page 2 stating that the SEAD-17 furnace has been inactive since 1989 due to RCRA permitting issues. The existing deactivation furnace at SEAD-17 had been in the process of being permitted as a hazardous waste incinerator, under the provisions of RCRA, but the RCRA permit was withdrawn by the Army when the Depot was listed for base closure in 1995.

The Army is responsible for signing and implementing the Record of Decision. Reference to the U.S.Army Corps of Engineers (USACOE) has been removed from the document.

Comment 2: Page 1: Purpose of Proposed Plan, 2nd Column, Last ¶
Please provide an electronic mail address to receive comments via the internet.

Response 2: Disagree. The Army requests that all comments be formally submitted to the Army in writing.

Comment 3: Page 2: Site Background, 1st Column, ¶2 & 3
Provide a describe how each of these two sites were used (i.e., what kind of deactivation occurred, processes, etc.).

Response 3: Agreed. Text has been added describing the process of deactivation of small arms munitions at the sites.

Comment 4: Page 2: Site Background, 1st Column, ¶4
NPL means National Priorities List, not National Priority List as usually spelled out by the Army.

Response 4: Agreed. The text has been revised.

Comment 5: Remedial Investigation Summary, 2nd Column
Please provide the State's approval date for the Final Closure Report for the Underground Storage Tanks Removal of 1994. In addition, please indicate if the four referenced documents are available to the public as part of the Site's Administrative Record.

Response 5: The tanks were unregistered. During the removal of the tanks, there was no evidence of leaks. The report was not submitted to NYSDEC.

The four referenced documents are available to the public and are located at the Seneca Army Depot Activity. This information has been added to the first paragraph of the referenced section.

Comment 6: Page 3: Groundwater for SEAD-16
This section indicate that the source of inorganics exceedances is not likely to be SEAD-16. However, nothing is said of what is being done to determine any other possible sources or to determine if it is due to natural occurrence.

Response: Agreed. The text is misleading. The concentrations of aluminum, manganese, iron, and sodium in the site groundwater are similar to concentrations found in groundwater from background locations and are most likely naturally occurring. The sentence has been reworded to the following: "The site mean concentrations for aluminum, manganese, iron, and sodium are not statistically different from their background concentrations."

Comment 7: Page 3 & 4: SEAD-16 & 17
Please provide concentration values, ranges and maximums, for all the investigated media.

Response: Agreed. Tables have been added to the report.

Comment 8: Page 4: SEAD-17, Groundwater
This section only list MCLs as the criteria for contaminants evaluation in this media. Please include NYSDEC AWQS Class GA criteria and its respective evaluation.

Response: Agreed. The text has been revised.

Comment 9: Page 5 & 6: Summary of Site Risk, Human Health Risk Assessment

The reviewer found no discussion of the future land reuse expected for these sites. Is there any potential for future residential redevelopment? Furthermore, if future land use was only evaluated for industrial scenario, Institutional Controls (ICs) and 5-Year Reviews are required.

Response: Agreed. Text has been added to the section titled *Remedial Action Objectives* designating the future land use as industrial. A discussion of Institutional Controls has been added to the section titled *Summary of Remedial Alternatives*. A discussion of the 5-Year Review has been added to the *Preferred Alternative* section.

Comment 10: Page 7: Remedial Action Objectives, 2nd Column, ¶1
Remedial action objectives need further discussion, especially the groundwater component seems to have been omitted from the document.

Response: Agreed. A discussion of the remedial action objectives for groundwater, soil in the ditches, and building debris has been added to the PRAP.

Groundwater is not considered to be a media of concern because the results of the risk assessment showed no risk to future receptors. In addition, four of the metals that were detected at concentrations exceeding the groundwater criteria were also detected in background groundwater samples.

Comment 11: Page 7: Remedial Action Objectives, 2nd Column, last ¶
The word "residential" should be stricken out of this sentence.

Response : Agreed. The wording is incorrect. However, this sentence as well as related text discussing residual risk for the future residential use scenario have been removed from the document.

Comment 12: Page 8: 1st Column, ¶2, 2nd sentence
There seems to be confusion between exposure scenarios and receptor groups. Please clarify which scenario and receptor group were used to estimate the levels of inorganics proposed to be removed.

Response 12: Acknowledged. Two sets of maximum metals concentrations were calculated. One set was for the future industrial use scenario with the daycare child as the receptor. The second set was for the residential scenario using the child as the receptor. The discussion of the residential use scenario has been removed from the referenced paragraph, which describes the calculated clean up goals for the industrial scenario.

Comment 13: Page 8: 1st Column, ¶3, 2nd sentence

NYSDEC TAGM values are human health-based values, unsuitable to assess environmental conditions for ecological purposes. Please provide accepted ecological-based criteria as presented in the FS.

Response 13: Agreed. The paragraph has been revised to state that site background concentrations were also used to calculate ecological hazard quotients.

Comment 14: Page 9: Summary of Remedial Alternatives, 1st Column, after ¶1
Discussion of groundwater impact and remediation (i.e., treatment, monitoring. restrictions, etc.) are lacking throughout the entire document, specially under this section and the Evaluation of Alternatives section. In additional, institutional controls (ICs) and 5-year reviews are required for each of the alternatives presented within this document.

Clarify the type of treatment meant by "off-site treatment" throughout this section.

Response 14: Acknowledged. A discussion on the remedial action objective for groundwater has been added to the section titled *Remedial Action Objectives*. Groundwater is not considered to be a media of concern because the results of the risk assessment showed no risk to future receptors. In addition, four of the metals that were detected at concentrations exceeding the groundwater criteria were also detected in the background groundwater samples. The groundwater will be monitored on a semi-annual basis at both sites and institutional controls may be used to restrict usage of groundwater for drinking.

As stated in the Response to Comment 9, a discussion on institutional controls has been added to the PRAP. A discussion of the 5-year review requirement has been added to the *Preferred Alternative* section.

Off-site treatment may include soil stabilization, which involves mixing an additive such as cement, quick lime, flyash, pozzolans, or a proprietary agent with the soil. This information has been added to the text.

Comment 15: Figure 3
The copy submitted is not readable.

Response: The figure has been revised to be more readable.

Response to Comments From U.S. Army Corps of Engineers

Subject: Draft Proposed Remedial Action Plan (PRAP) for SEAD-16 and 17
Seneca Army Depot
Romulus, New York

Comments Dated: December 26, 2001

Date of Comment Response: April 7, 2002

Comments from Jim Peterson, Cost Engineering:

Comment 1: Please identify source of applicable cost information. Cost back up should be furnished in order to perform a review.

Response 1: The cost back up is provided in the Final Feasibility Study Report for SEAD-16 and 17 (Revised July 2001). A footnote has been added to Table 3, Detail Cost Estimates.

Comments from Sandy Frye, Compliance:

Comment 1: ARAR Issues ? The brief discussion on Compliance with ARARs on page 16 needs to be more specific. For example, stating the CWA is an ARAR is far too broad of a statement to make regarding ARARs for this project. The CWA covers a myriad of areas of compliance. In this document, the specific requirements of the CWA the contractor/Corps feels are germane need to listed. Are CWA requirements regulating storm water discharge at construction sites exceeding 1 acre in size the actual ARARs? Are substantive portions of the CWA pertaining to point source discharges applicable or relevant and appropriate? Or, is the contractor referring to AWQC standards? Past experience has shown that poorly identified ARARs in the ROD can come back to haunt a facility in the future. It is strongly recommended that the specific sections of the CWA the contractor feels are ARARs should be identified and any numeric standards listed. If this identification cannot be done, then perhaps the CWA is not an ARAR after all. ARARs should have been specifically identified in the FS. If not, it is unclear how the alternatives could have been adequately evaluated and a remedial action recommendation made. The ARAR evaluation required for the FS should be presented here in the Proposed Plan.

EPCRA is not an ARAR for this project. EPCRA contains no substantive requirements that would apply to any of the hazardous substances found on the site. It is an entirely administrative regulation and has no requirements that would be applicable or relevant and appropriate for this project. It should be deleted as an ARAR. [Note: EPCRA is not legally enforceable at any Federal facility. Compliance with EPCRA at Federal facilities is mandated by EO 13148 and not law. Because it is

not a legally enforceable standard, it does not meet the definition of an ARAR and should not be listed as such.]

NEPA is not an ARAR. CERCLA constitutes the functional equivalent of NEPA and therefore NEPA is not required at sites undergoing CERCLA response actions. DoD Instruction 4715.9, Enclosure 2, paragraph E.1.1.5 specifically states that the procedural requirements for preparation of documentation to meet the statutory requirements for remediation and/or restoration projects undertaken under CERCLA are substantially the same as prescribed under NEPA. It also states that components are not required to prepare separate NEPA documents for CERCLA actions. NEPA should be deleted as an ARAR.

Response 1: A revised list of ARARs has been added to the PRAP as Appendix A. The revised list refers to Section 404 of the Clean Water Act (CWA) as a Potential Federal Location-Specific ARAR. In addition, the NPDES Permitting Requirements for Discharge of Treatment System Effluent; Effluent Guidelines for Organic Chemicals, Plastics, and Synthetic Fibers; and Discharge to POTW are referenced as sections of the CWA that are Potential Federal Action-Specific ARARs. The EPCRA has been removed from the ARAR list.

Comment 2: Page 6 of the Proposed Plan indicates that there was no unacceptable risk posed at SEAD 17 except to a future child care center child. As this is NOT a reasonably foreseeable use for SEAD 17, it is totally unclear as to why valuable and increasingly rare DOD restoration dollars would be spent to remediate the site. In order to avoid giving the appearance of ?we don?t know what we are doing? it would be prudent to include the real driving force behind the decision to remediate the site. If political pressure is being applied or EPA and/or the State will not accept any other alternative, it should be stated clearly in the document. This will ensure that this information will be available for any future evaluations/assessments that might be done at the site regarding the logic used in the selection of the remedy.

Response 2: Evaluation of the day care child in the human health risk assessment was requested by the EPA based on the fact that other day care centers had been present at SEDA. The human health risk assessment indicates that indoor dust, soil, and groundwater at SEAD-16 present a risk to the future industrial worker, future day care child, and future day care center worker. In addition, the human health risk assessment indicates that ingestion of on-site soil presents a risk to the future day care child at SEAD-17.

Maximum soil concentrations of antimony, copper, mercury, thallium, and zinc were calculated for the two most conservative receptors, a day care child in an industrial scenario and a residential child.

For the future industrial use scenario, most locations with concentrations of metals exceeding the calculated clean up goals are co-located with the areas having lead exceedances of 1250 mg/kg.

The Army proposed a cleanup level for lead of 1250 mg/kg, which was derived from an EPA publication that suggested a range of lead cleanup levels (750 ppm to 1750 ppm) which may result in an acceptable residual risk under an industrial scenario. This concentration is protective of receptors in an industrial future use scenario, but not for a day care center child. Although a day care scenario was evaluated in the human health risk assessment, it is not the Army's intent to use the property for a day care center. Deed restrictions will be placed on both sites restricting day care centers.

Comments from Laura L. Tate, Chemical Engineer:

Comment 1: EPA 540-F-98-054 Presumptive Remedy for Metals-in-Soil Sites
"The presumptive remedy for principal threat metals-in-soil waste that is targeted for treatment is:
Reclamation/Recovery (when feasible) –
....Immobilization - ....

The presumptive remedy for low-level threat metals-in-soil waste that is not targeted for treatment is: Containment - ..." Neither containment nor immobilization was adequately considered in this FS/PP.

Response 1: Alternative 2 is the on-site containment alternative. Alternative 4, Off-Site Disposal, includes stabilization of soils with metal concentrations exceeding the TCLP criteria. Both alternatives underwent detailed analysis with respect to overall protection of human health and the environment; ARAR compliance; long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost. Refer to the Final Feasibility Study Report for details of the analysis and description of alternatives.

Comment 2: Evaluation of excavation and off-site disposal vs the presumptive remedies is contained in the appendices to the aforementioned document. Soil washing is ranked sufficiently above off-site disposal to justify a more detailed comparison.

Response 2: Soil washing was one of the alternatives that underwent detailed analysis, however, because soil washing was determined to be the most expensive option, it was not selected as the preferred option.