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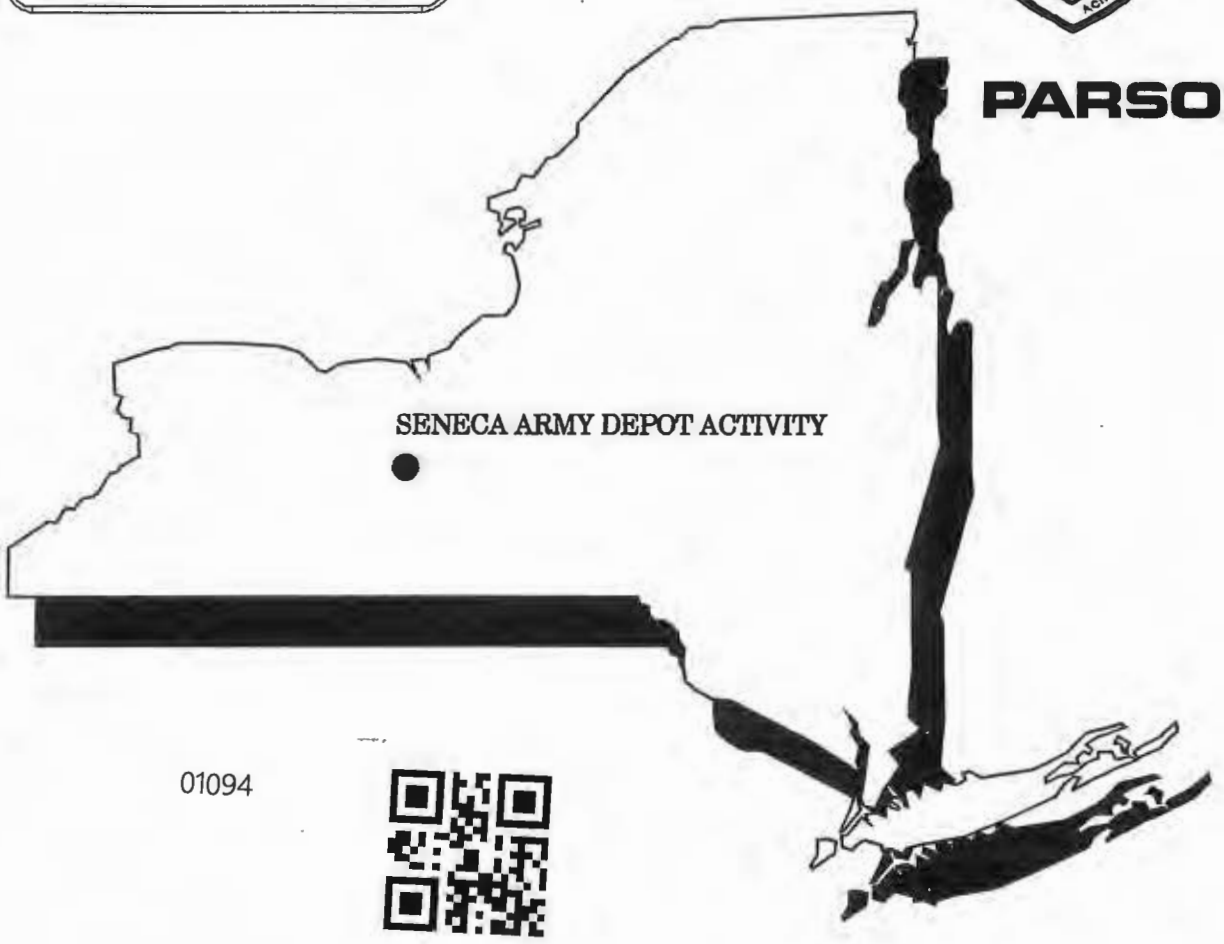

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RCRA CLOSURE PLANS

Building 307, Hazardous Waste Container Storage Facility
Building 301, PCB Transformer Storage Building

SENECA ARMY DEPOT ACTIVITY (SEDA)

DECEMBER 2002

RCRA Closure Plans
Building 307, Hazardous Waste Container Storage Facility
Building 301, PCB Transformer Storage Building

Prepared for:

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Romulus, New York

and

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TABLE OF CONTENTS

RCRA CLOSURE PLANS

TABLE OF CONTENTS

RCRA CLOSURE PLANS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Appendix ID	Title of Appendix
A	Rinsate Sample Collection Protocol
B	Wipe Sample Procedure
C	Closure Costs, Building 307 and Building 301

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

Parsons Engineering Science, Inc. (Parsons), on behalf of the US Army, has prepared two closure plans for two Resource Conservation and Recovery Act (RCRA) units located at the Seneca Army Depot Activity (SEDA) in Romulus, New York. As part of the Base Realignment and Closure (BRAC) requirements and requirements identified for treatment, storage and disposal units that have been used for hazardous wastes, theses RCRA units will be closed. The RCRA units discussed in this document are as follows:

- Building 307 – Hazardous Waste Container Storage Facility (SEAD-1)
- Building 301 – PCB Transformer Storage Building (SEAD-2)

Four other RCRA-regulated units are located at the SEDA. These include:

- Building 803 – Mixed Waste Storage Building (SEAD-72)
- Ammunition Peculiar Equipment (APE) 1236 Deactivation Furnace (SEAD-17)
- Open Burn Area (SEAD-23)
- Open Detonation Area (SEAD-45)

At present, it is the US Army's intention to proceed with closure for the latter four RCRA units under continuing Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) actions that are proceeding at the Depot. Therefore, closure plans for these four latter RCRA units are not provided in this document.

Within Sections 2 and 3 of this document, a list of steps, which will need to be completed to achieve closure under RCRA for Building 307 (SEAD-1) and Building 301 (SEAD-2), is provided. Tentative schedules are also provided. The proposed RCRA closure work will be performed in accordance with the Title 6 New York Code of Rules and Regulations (6 NYCRR) Subpart 373-3, Interim Status Standards for Owners and Operators of Hazardous Waste Facilities (New York State Department of Environmental Conservation (NYSDEC), March 15, 2002). Additionally, other appropriate State of New York and Environmental Protection Agency (EPA) guidance will be complied with, as appropriate. It is Parsons understanding that the State of New York Department of Environmental Conservation has been granted primacy by EPA for the closure of RCRA units within the state.

1.2 ORGANIZATION OF DOCUMENT

Section 1.0 provides an introduction to this report. **Section 2.0** presents the closure plan for Building 307 (SEAD-1), the Hazardous Waste Container Storage Facility. **Section 3.0** presents the closure plan for Building 301 (SEAD-2), the PCB Transformer Storage Building. **Sections 2.0** and **3.0** each contain subsections that provide a brief description and overview of the individual RCRA units (i.e., SEAD-1 and SEAD-2), and their respective operational history, state the closure performance standard for the facility, and present the closure plan for the units. Within the closure plan, details of the maximum inventory are provide as are the details of how the closure will be performed, the anticipated schedule for the closure effort, and the estimated cost. The provided schedules assume that both of these facilities will be closed beginning in the spring of 2003.

2.0 CLOSURE PLAN for the HAZARDOUS WASTE CONTAINER STORAGE FACILITY, BUILDING 307 (SEAD-1)

2.1 GENERAL FACILITY DESCRIPTION AND OVERVIEW OF HISTORIC OPERATIONS

Building 307 is located in the eastern portion of SEDA, approximately 3,500 feet southwest of the Depot's main entry gate off New York State Highway, Route 96. The Army constructed Building 307 in 1981. Building 307 was used for storage of hazardous waste generated throughout the Depot prior to their shipment offsite for disposal. Hazardous wastes stored within Building 307 have historically included spent solvents, still bottoms from 1,1,1-trichloroethene vapor degreasers, sludge from oil/grease separations, cleaning compounds, paper filters from paint spray booths, and spent battery acids. Most wastes stored within the building were stored in new 55-gallon drums, but occasionally small amounts of hazardous waste were stored in 5-gallon pails.

Building 307 measures 40-feet wide by 50-feet long and its sides and roof are of corrugated metal construction. The corrugated metal structure sits on a six-inch thick monolithic, reinforced concrete slab floor that is surrounded by an integral component, six-inch concrete curb. The floor of the building is sealed to prevent seepage in the event that materials were spilled onto the concrete floor. Other than the portion of the floor that is covered by the access/egress ramp, the monolithic floor of the building is not sloped nor does it contain any collection sumps or drains. The roof of the building is constructed of corrugated zinc-coated steel with single sheets extending from the center ridge of the building to the outer edges. Passive ventilation is provided within the structure via the opening at the top of the walls to prevent heat and chemical fume buildup. The only entrance into the building is through a sliding corrugated-steel door located on the south side of the building. A 10-foot wide concrete access/egress ramp extends 10 feet beyond the exterior of the building and 8 feet into the building's interior. A plan view of the building is shown on **Figure 2-1**.

Historically, subsequent to the delivery of hazardous waste to Building 307, the 55-gallon drums were staged on wooden pallets and clearly labeled by type (i.e., flammable solid, corrosive liquid, etc.) of waste contained. The wastes were then segregated within the building by waste type. An aisle separated individual waste types. The maximum storage capacity of Building 307 is 300, 55-gallon drums or 16,500 gallons of material. The quantity of individual classes (i.e., waste solvents, corrosive liquids, PCBs, etc.) of waste present in the building at any given time was closely monitored and regulated. Once transported to the building, the hazardous waste was stored until disposal contracts with approved and licensed, off-site treatment, storage, and disposal facilities (TSDFs) were procured and they were removed from the building.

On December 30, 1991, the Army submitted a 6 NYCRR Part 373 Part A & Part B Permit Application

for Building 307 – Hazardous Waste Storage Facility. The permit was submitted as a requirement to continue to operate this hazardous waste container storage facility. The NYSDEC reviewed the Army's permit application for the Depot but did not approve it. As such, operations at Building 307, and other RCRA-regulated facilities at the Depot, continued to operate under Interim Status. In 1995, the Department of Defense (DoD) nominated SEDA as a facility for Base Realignment and Closure (BRAC), and Congress approved this nomination. Subsequent to being listed under BRAC 1995, the Army withdrew its RCRA Part B permit application for the Depot. Thus, Building 307 has continued to operate under Interim Status.

The Army reports that there was one spill of PCB containing oil within Building 307 that occurred in April of 1991. This spill involved approximately 45 gallons of material and was contained within the monolithic concrete floor and curb of Building 307. The Army reported this spill to the NYSDEC (Spill Number 9100900) and cleaned-up using a speedy-dri adsorbent followed by a soap and water wash of the floor. Recovered adsorbent and liquids were containerized and disposed of off-site as hazardous waste. The NYSDEC indicated that no further action was needed once the cleanup was completed.

The Army intends to close Building 307 beginning in early April 2003. It is expected that the closure of this facility will be completed by mid to late August 2003. A schedule of the planned closure activities is provided in **Figure 2-2**.

2.2 CLOSURE PERFORMANCE STANDARD

RCRA regulations basically present two closure options for regulated units: clean closure (i.e., removal of contamination), or closure as a landfill (i.e., containment and long-term maintenance of the contamination that is left in place). The closure plan for Building 307, the Hazardous Waste Container Storage Facility (SEAD-1) has been developed to achieve clean closure. A systematic approach will be followed such that the area used for hazardous waste storage will be suitably decontaminated to eliminate or minimize the need for further maintenance, threats to human health and the environment, and the release of hazardous constituents to groundwater, surface waters, or the atmosphere. The Army will not need to close the containment unit in accordance with requirements of a landfill. If the Army finds that its clean closure goal is non-achievable, this closure plan will be modified in accordance with the requirements of 6 NYCRR § 373-3.7(h).

2.3 CLOSURE PLAN

The following section outlines the procedures to be followed to close Building 307, the Hazardous Waste Container Storage Facility (SEAD-1) in accordance with the requirements of 6 NYCRR Part 373-3.7, the Closure Performance Standard.

2.3.1 Maximum Inventory

Building 307 currently sits empty of any hazardous waste. The last previous shipment of hazardous waste was removed from the Depot in March 2002. Between 1994 and 2001, approximately 225,000 pounds of hazardous waste was temporarily stage in Building 307 pending off-site disposal at licensed TSDFs. Detail of the types of wastes contained during this period is provided in **Table 2-1**. The maximum inventory of hazardous wastes ever stored at Building 307 during its active life is estimated as approximately 120, 55-gallon drums or approximately 6,600 gallons. An estimated breakdown of the maximum inventories content is provided in **Table 2-2**.

The Army has conducted an inspection of all historic satellite hazardous waste accumulation areas and buildings at the Depot. The results of this inspection indicate that hazardous wastes are not present at any of the historic satellite accumulation areas and are not stored in Building 307. At present the only materials that are contained in Building 307 include furniture and unused, empty 55-gallon drums and 85-gallon overpacks that remain from previous operations. Additionally, current Army activities at the Depot produce very little, if any, new hazardous waste, and when the Army generates new hazardous waste, it is managed in accordance with prevailing RCRA requirements and shipped off-site in less than 90 days.

Two days prior to the initiation of closure activities at Building 307, a meeting will be held between the Army and the disposal contractor. At this time, a thorough inspection of Building 307 will be performed to (1) verify that no hazardous waste remains at the facility; (2) ascertain the condition of any residual empty drums and overpacks stored in the building; and (3) review the contractor's responsibilities in conforming with all aspects of the closure plan, including waste manifesting, spill prevention, and safety.

2.3.2 Removal of Hazardous Waste Inventory

Any remaining hazardous waste inventory stored in Building 307 will be removed during a planned one- or two-day event. A team of professional hazardous waste removal technicians will travel to the Depot and conduct the removal of any remaining hazardous waste inventory identified. Necessary licensed, hazardous waste transport vehicles will be staged in close proximity to Building 307 for the duration of the transfer and loading operations. Access and egress paths between the transport vehicles and the building will be clearly marked and cordoned off to limit unnecessary vehicular and pedestrian traffic throughout the period of the transfer and loading operations.

Personnel performing the transfer and loading operations will wear acid/solvent resistant overalls, head and eye protection, chemical resistant gloves and boots, and be provided full-face respirators fitted with organic vapor and acid gas filter cartridges. Use of respiratory protective equipment is not currently anticipated during the removal and transfer operation; thus this equipment will be available to each

member of the removal team as a safety precaution. Additionally, backup health and safety equipment (e.g., adsorbent materials and pads, neutralization chemicals, eyewash stations, first-aid kits, emergency evacuation air packs or self-contained breathing apparatus, drum overpacks, etc.) will be staged in close proximity of the building for the duration of the removal and decontamination operation as a safeguard in the event that they are needed.

Prior to their movement, all drums containing hazardous waste will be re-inspected to ensure that their contents are clearly and legibly identified, and that all bungs and caps are securely fastened. Additionally, the exterior of all drums will be re-inspected for evidence of corrosion, blistering paint, or leakage, and any drum identified as being improperly marked or of poor quality will receive necessary attention prior to any movement from the building. All drums to be included in a shipment will also be clearly listed on the hazardous waste manifest that will accompany the shipment from the Depot to the designated TSDFs.

All drums will be removed from the Building 307 storage area on their respective pallets using a forklift truck. Once removed from Building 307, the drums will be moved directly to, and loaded on, one of the staged hazardous waste transport vehicles. Drums containing incompatible wastes will be removed separately from the storage facility and placed on the transport vehicle for shipment to the off-site facility for disposal. As is appropriate, incompatible hazardous wastes will be segregated as they are placed onto the transport trucks. As the drums are moved, their identity will be cross-checked against the manifest to ensure that all drums are properly organized.

Any empty drums stored in the storage area will also be removed and transported off-site for disposal or recycle, separately. The Army, or their designated agent, will supervise the transfer of hazardous waste and empty drums to ensure compliance with all aspects of safety plans and approved closure techniques.

Drums containing hazardous liquids and sludges will be transported to a permitted and approved secure off-site facility for treatment or disposal. Empty drums will preferably be transferred to an approved drum reconditioning facility, or crushed/shredded and disposed of off-site in a secure land burial facility.

After the removal of any stored hazardous wastes and empty drums, the Army or its designated agent, and the disposal contractor will inspect all interior building floors and walls, and the exterior building access/egress ramp's surface for evidence of leakage or spillage. If visible evidence of leaks is identified, the disposal contractor will use appropriate absorbent compounds to contain and clean up any spilled liquids. Solid materials will be swept up and placed in Department of Transportation (DOT) -approved, steel 55-gallon drums. Stains observed on the building's interior walls or floors or the exterior ramp's surface will be noted on a building plan and marked, and will receive extra attention during the planned decontamination sequence and subsequent confirmational sampling event.

In the event that an accident (e.g., spill) occurs during the transfer of hazardous wastes from Building 307 to the transport truck, the area surrounding the spill will immediately be cordoned off, and necessary containment measures will be implemented to contain and minimize the extent of the event. Recoverable liquid will be captured and transferred to suitable containment drums, while solid hazardous wastes or adsorbent materials will be swept or scrapped up and added to other containment drums. These drums will then be re-inventoried and added to the planned shipment.

Samples from the area where the spill event occurred will then be collected and these samples will be analyzed to document the extent of the impact to the area.

Disposable personal protective equipment worn by workers will be collected and placed in drums for subsequent disposal as a hazardous waste at a permitted and approved off-site disposal site. Reusable personnel protective equipment will be decontaminated at the end of each day, and all wash and rinse solutions and adsorbent materials will be collected and containerized for disposal off-site as hazardous waste.

2.3.3 Decontamination of Building

All personnel involved in the building decontamination process will wear Tyvek® disposable coveralls, head and eye protection, chemical-resistant gloves and boots, and full-face respirators fitted with organic vapor and acid gas filter cartridges.

Once emptied, the Building 307 storage area will be decontaminated. A recent Army inspection of the building indicates that there is visible evidence of water-staining at several locations on the floor of the building. No visible water-staining was noted to exist on the walls of the building. Additionally, the Army's inspection also indicated that there is no visible evidence of any organic or oily stains on either the floor or the walls of Building 307. As was indicated above, the location of visible stains remaining once the building has been emptied of all equipment will be annotated on a building map for future reference during decontamination process confirmational sampling.

At this time, the Army's plan is to decontaminate the building using a detergent and water washing and potable water rinsing process. If evidence of organic or oily stains is noted once the remaining empty drums and furniture are removed, more aggressive levels of decontamination may be applied to determine if noted stains can be removed. At this stage, limited volumes of a solvent (e.g., hexane) may be used in the attempt to remove any noted oily or organic-based stain. If a solvent is used, the extent of its use will be closely monitored to ensure that it is not spread beyond the bounds of the containment area. All applied solvent will be recovered by absorption onto a rag, cloth or other suitable absorption media. All solvent wetted rags, cloth or media will be recovered and placed into a drum for transport to a designated disposal facility for disposal as a hazardous waste.

All surfaces will then be swept clean, and debris will be recovered and placed into one or more DOT-approved 55-gallon drums for subsequent transport under manifest to a hazardous waste TSDF. Once preliminary decontamination steps (stain removal and sweeping) are completed, the walls of Building 307 will be hand-washed using a detergent and water solution followed by clear water rinses. High-pressure washers will not be used on the walls because the bottoms of the walls are located exterior of the containment structure of Building 307. Polyethylene sheeting will be placed under the walls during the wash and rinse cycles to capture excessive quantities of waste water and this water will be added to other water volumes recovered during the washing of the floors. All interior floor surfaces of Building 307 will be decontaminated using a high-pressure detergent and water wash, followed by a minimum of three clear water rinses using a high-pressure hose. During each of the wash and rinse cycles, the doorway will be sealed to prevent the spread of wash and rinse waters beyond the inside of the building and the containment area.

Wastewater generated during the wash and rinse cycles will be collected in the containment area of Building 307 and pumped into DOT-approved 55-gallon drums or a bulk tank (preferred alternative) pending sampling and analysis, and transport off-site, under manifest (if necessary), for treatment and disposal.

Temporary containment structures will be constructed around three sides of the building's exterior access/egress ramp, and then this structure will be decontaminated using the same detergent, water wash, and rinse cycle that is proposed for the building's interior floor and walls. If this operation is performed before the interior of the building is decontaminated, the fourth edge of the access/egress ramp will not require a containment barrier, as waste liquids can be allowed to drain back into the building where they will be collected within the building's integral containment structure.

All pumps, hoses, containers and equipment used during the proposed decontamination operations in Building 307 will be decontaminated after its use by triple flushing/rinsing all exposed or wetted surfaces, followed by the capture and containerization of the recovered flush/rinse solution. If there is any residual doubt as to the degree of decontamination achieved for any piece of equipment, the equipment will be disposed of as a hazardous waste.

Disposable personnel protective equipment worn by workers will be collected and placed in drums for subsequent disposal as a hazardous waste at a permitted and approved, off-site disposal site. Reusable personnel protective equipment will be decontaminated at the end of each day, and all wash and rinse solutions and adsorbent materials will be collected and containerized for disposal off-site as hazardous waste.

2.3.4 Confirmatory Sampling

Subsequent to the completion of the decontamination process, samples will be collected to confirm the degree of decontamination achieved. Confirmational sampling will include the collection of aqueous samples in accordance with the State of New York's "Rinsate Sample Collection Protocol," and the collection of wipe samples in accordance with procedures that are specified under the Toxic Substance Control Act regulations [40 Code of Federal Regulations (CFR) § 761.123]. A copy of NYSDEC's Rinsate Sample Collection Protocol is attached to this work plan as **Appendix A**. A copy of the proposed wipe sampling protocol is attached to this work plan as **Appendix B**. Rinsate samples will only be collected from areas that are generally flat and "horizontal" (i.e., floors and ramps) where damming techniques can be effectively implemented. Wipe samples will be collected from horizontal and vertical surfaces.

Rinsate Samples

Rinsate samples will be analyzed for Target Compound List (TCL) volatile organic and semivolatile organic compounds, and Target Analyte List (TAL) metals. All sample analyses will be conducted by a laboratory that is certified by the New York State Department of Health (NYSDOH), and will be performed in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (Third Edition (November 1986), as amended by Updates: I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), III (December 1996), and IIIA (April 1998), and later approved revisions), hereinafter referred to as "SW-846"; Appendix 19 of 6NYCRR Part 371; or an equivalent method approved by the NYSDEC. A list of the proposed sample preparation and analysis methods that will be used during this program is provided as **Table 2-3**. A discussion of sample data analysis is provided in **Section 2.3.7** below.

A minimum of 17 rinsate samples, plus additional quality assurance and quality control (QA/QC) samples will be collected from the flat "horizontal" surfaces (i.e., ramps and contained floor) of Building 307. The location of 14 of the 17 proposed rinsate samples will be selected using a randomized grid approach; the remaining three will be placed using biased techniques to favor locations that were identified as being stained prior the beginning or end of the decontamination process. Under the sample placement selection process, a minimum of two rinsate samples will be collected from the area of external entrance ramp (size of 100 square feet – ft^2); a minimum of two samples will be collected from the area of the internal access ramp (size of 80 ft^2); and a minimum of 10 additional samples will be collected from the curbed area of Building 307 (size 2,000 ft^2 - 100 ft^2 (ramp) = 1,900 ft^2). As was noted above, the three remaining samples will placed based on staining bias. Adjustments to the proposed scheme will be made as necessary based on consultations with the NYSDEC representative observing the closure process.

To place the random samples, each "horizontal" surface will be divided into 100 equally sized areas, and a random number generation process will be used to select the location where the confirmation sample will be centered. Under this arrangement, each grid sector on the containment floor would measure approximately 4 feet by 5 feet, while grid sectors on the internal ramp would measure roughly 0.8 feet by 1 foot, and grid sectors on the exterior ramp would measure 1 foot by 1 foot.

All rinsate samples will be collected from sampling areas that conform to NYSDEC's recommended 400 square inch surface area (i.e., 20 inches by 20 inches). As such, any random sample identified on one of the ramp surfaces will overlap adjacent internal ramp grid sectors. Thus, in this case, the placement of the sampling area template would be adjusted to ensure that the random selected grid sectors is placed as one of the four corners of the designated sampling areas with the remainder of the designated sampling area being located fully within the bounds of the ramp. During this process, placement would be biased to ensure to the extent possible that the designated sampling area overlapped identified areas of staining.

With respect to the containment floor, NYSDEC's recommended sampling area does not exceed the proposed grid surface identified for the containment floor (i.e., approximately 4 foot by 5 foot), so in this case, the primary criteria used for the placement of the sampling area would be that the location of the southeastern corner (i.e., lower left corner) of the sampling area would be defined by selecting two additional random numbers between 00 and 99. Thus, generally, if the numbers 00 and 50 were selected during the second random numbering sequence, the lower left corner of the sampling square would be placed at the halfway point of the southern baseline of the sampling grid. This placement technique will not work within the last line of grid sectors that are located along the northern end of the containment floor area space as the sampling area would extend beyond the edge of the containment floor for any location that is within 20 inches of the wall, so in this case the location of the northeastern corner of the sampling area would be defined by the two digit random number.

Under all of the placement criteria used, successive rinsate sampling areas selected that overlapped an area sampled previously would be moved to avoid overlap. New sampling locations would be reselected based on a random numbering selection process. An example of the proposed sample selection process for the containment area floor is displayed in **Figure 2-3**. The random number sequence used to identify the proposed sampling locations is provided in **Table 2-4**.

PCB Wipe Samples

Wipe samples will be analyzed for TCL polychlorinated biphenyls (PCBs) only. All sample analyses will be conducted by a laboratory that is certified by the NYSDOH, and will be performed in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, Appendix 19 of 6NYCRR Part 371; or an equivalent method approved by the NYSDEC, as referenced above. A list of the proposed sample preparation and analysis methods that will be used during this

program is provided as **Table 2-3**. A discussion of sample data analysis is provided in **Section 2.3.7,** below.

Thirty-seven wipe samples, plus additional QA/QC samples will be collected from locations on the interior walls and floor of Building 307. Samples that would have ended up beyond the bounds of the building walls per placement criteria defined in the EPA's guidance manual "Field Manual for Grid Sampling of PCB Spill Sites to Verify Clean-up" (EPA-560/5-86-017) will be relocated to the top of the wall to ensure maximum coverage for the wall surfaces. A diagram of the proposed surface wipe samples is provided as **Figure 2-4**. An additional three wipe samples will be randomly sited from the area of the ramp that is external of Building 307 and characterized for PCBs. Combined, this results in a total of 40 wipe samples being collected from Building 307 for PCBs which is the maximum stipulated under 40 CFR § 761.130(c). Final placement of the wipe samples will be confirmed after consultation with NYSDEC's field observer at the site.

All wipe samples will be collected from sampling areas that conform to TSCA's recommended 100 square centimeter surface area. The procedure for the collection of these samples is provided in **Appendix B**.

2.3.5 Grounds Surrounding Building 307

No records of historic spills or releases of chemical materials exterior to Building 307 exist in the Army's operational record for the Depot or Building 307. As was noted in **Section 2.1** above, a spill of PCB oil did occur inside of Building 307 on April 23, 1991. However, this spill was contained within the building's containment structure, cleaned up, and closed out by NYSDEC. Therefore, surface soil contamination associated with, or attributable to, historic operations conducted at this building is not expected. Nevertheless, surface soil samples will be collected and analyzed to determine if evidence of possible hazardous material release exists in the shallow soils surrounding the building.

Initially, a minimum of 11 shallow surface soil samples, plus necessary QA/QC samples, will be collected from the soil exterior of Building 307. Five samples are proposed for the front of the building where historic access and egress activities have occurred. The first of these five samples will be located approximately midway between the front left edge of the building and the front, left edge of the access/egress ramp into the building. The second sample will be placed at a roughly equivalent location midway between the front right edges of the containment building and the access/egress ramp. Two additional shallow soil samples will be placed immediately adjacent to the mid-point of the left and right edge of the exterior access/egress ramp, while the last proposed shallow soil sample will be placed at the mid-point of the front edge of the exterior access/egress ramp.

Two additional shallow soil samples are also proposed for each of the remaining three exterior walls of

Building 307. These additional six shallow soil samples will be roughly placed so that they divide each face into thirds. The actual location of all 11 shallow soil samples will be adjusted based on field observations at the time of sampling. A schematic showing the proposed location of shallow soil samples is presented in **Figure 2-5**.

Each shallow soil sample will be recovered from the top two or three inches of soil that underlies any vegetative cover (e.g., grass). Each sample will be collected at a location that is no more than two feet beyond the edge of the building. The final location of each soil sample collected will be biased towards areas that exhibit visible signs of vegetative stress or soil staining.

Each of the collected soil samples will be analyzed to determine concentrations of TCL volatile and semivolatile organic compounds, and PCB compounds, and TAL metals. A description of applicable sample preparation and sample analysis procedures that will be used is provided in **Table 2-3**. Analytical results will be used to document whether evidence of a possible release of hazardous materials exists around the building. A discussion of sample data analysis is provided in **Section 2.3.7** below.

If the results of the preliminary soil sampling suggest that a release of hazardous materials has occurred from Building 307 to the surrounding environment, the Army will prepare and submit a plan for subsequent actions that will be performed to further evaluate the extent of the contamination present. Possible additional actions that may be required if exterior shallow soil contaminated is identified include:

- Collection and analysis of additional samples of the soil, groundwater, surface water and sediment (as applicable);
- Excavation and replacement of contaminated soil (if identified);
- Demolition and disposal of Building 307;
- Implementation of run-on and run-off controls;
- Long-term groundwater monitoring programs;
- Installation of contaminated groundwater containment or treatment systems; or
- Closure of the site as a landfill.

Specific details of any follow-up program proposed for the area of Building 307, if required, will be documented and submitted to the NYSDEC and the EPA for review and approval before it is implemented.

In the event a spill occurs during the closure of Building 307, samples of affected media (soil, sediment,

etc.) will be collected immediately after spill containment and clean-up activities are completed. At least one sample will be collected from the center, and around each side of the perimeter, of the affected area and these samples will be analyzed for TCL volatile, semivolatile, and PCB compounds, as well as TAL metals. Analysis of data resulting from these samples is discussed in **Section 2.3.7**, below.

2.3.6 Decontamination Water and Solutions

All waste wash water, rinse water and equipment flush/rinse water will be captured, recovered, pumped into a storage tank, sampled, and transported off-site for ultimate treatment and disposal. Recovered detergent/water wastewater will be initially handled as hazardous wastes. Once all decontamination operations are completed, samples will be collected from each tank and these samples will be analyzed for TCL volatile organic, semivolatile organics, PCBs and TAL metals according to procedures identified in **Table 2.3**. Analytical results from the analysis of decontamination waters and solutions will be reviewed to determine the appropriate disposal method for the rinse waters. If necessary, rinse waters will be handled as hazardous wastes; however, if the results indicate that the rinse water is free of contamination it will be disposed at a wastewater treatment plant.

2.3.7 Data Analysis

Rinsate Samples

Analytical results from rinsate samples collected during the closure of Building 307 will be reviewed and compared to New York State Water Quality Standards for Class GA groundwater (6 NYCRR § 703.5) to assess whether evidence of residual contamination exists and to determine how the water will be disposed (e.g., hazardous waste or disposed at wastewater treatment plant). Results of the analyses will be provided to and reviewed with NYSDEC to confirm that clean closure of the building has been achieved. If results of the water analyses indicate that concentrations of contaminants are still present in the wastewater after the initial wash and three rinse cycles, the Army will either:

- Perform a second round of washing and three rinses and collect new samples of the resulting liquids for chemical analysis and review; or
- Prepare and submit a plan for the closure of Building 307 as a "landfill."

The former of these two alternatives will most likely be selected if the sample results indicate that the concentrations of identified contaminants found in the rinse waters are decreasing with successive rinse cycles. Such a finding would suggest that the decontamination process is working, but has not yet been completed. Subsequent data evaluations would proceed in a similar manner.

The latter of these two alternatives would be selected if a review of the available rinse water data

indicated that the concentrations of the identified contaminants were not decreasing and that high levels of "leachable" contamination were present in the walls and floor of the building. If closure as a "landfill" were selected, additional plans would also be required for the exploration of the soil and groundwater underlying and surrounding the structure to verify whether a release of hazardous waste or materials had occurred to the environment.

PCB Surface Wipes

Analytical results from the PCB wipe samples collected during the closure of Building 307 will be reviewed and compared to the 10 ug/100 cm^2 decontamination standard for non-porous surfaces to assess whether evidence of residual contamination exists and to determine how the water will be disposed (e.g., hazardous waste or disposed at wastewater treatment plant). Results of the analyses will be provided to and reviewed with NYSDEC to confirm that clean closure of the building has been achieved. If results of the wipe sample analyses indicate that concentrations of PCBs are still present after the initial wash and three rinse cycles, the Army will either:

- Perform a double wash and rinse decontamination of the building using a decontamination performance-based organic decontamination fluid (PODF – e.g., kerosene, hydrocarbon terpene, diesel fuel, or mixture of terpene hydrocarbons and terpene alcohols) and collect new wipe samples for chemical analysis and review; or

- Prepare and submit a plan for the closure of Building 307 as a "landfill."

The former of these two alternatives will most likely be selected if the wipe sample results indicate that the concentrations of PCBs found on the surface of the building are close to the 10 ug/100 cm^2 performance criteria. Subsequent data evaluations would proceed in a similar manner.

The latter of these two alternatives would be selected if a review of the available PCB wipe data indicated that the concentrations were not decreasing and that high levels of PCB contamination were present in the walls and floor of the building. If closure as a "landfill" were selected, additional plans would also be required for the exploration of the soil and groundwater underlying and surrounding the structure to verify whether a release of hazardous waste or materials had occurred to the environment.

Soil

Analytical results from the soil samples surrounding Building 307 will be reviewed to assess the whether evidence possible releases exist surrounding the building. Data from the analysis of soil samples will be reviewed with personnel of the NYSDEC personnel to confirm that evidence of releases of hazardous materials does not exist.

If analytical results for the shallow soil samples indicate that signs of contamination exist exterior of the building, alternative plans will be prepared and submitted for approval describing further investigations that will be performed to delineate the possible extent of the identified contamination. Future site investigations would most probably include the collection of surface and subsurface soil samples and groundwater samples, and if necessary, surface water and sediment locations. Proposed sample locations would include locations in the immediate vicinity and downgradient of the release to delineate the extent of the apparent release.

As has been indicated, the Army's goal for Building 307 is to achieve clean closure. Thus, if analytical data indicates that it is necessary, soil removal will be conducted, and subsequent confirmational sampling and analyses will be completed to document that surrounding soil has not been impacted by the release of hazardous wastes or materials. If the Army's goal is not achievable, the closure plan for Building 307 will be modified to comply with requirements specified for closure, and post-closure, of containment buildings as a "landfill."

Decontamination Water and Solutions

Analytical results from rinse water samples collected during the closure of Building 307 will be reviewed to assess whether evidence of residual contamination exists and to determine how the water will be disposed (e.g., hazardous waste or disposed at wastewater treatment plant). Results of the analyses will be provided to and reviewed with NYSDEC to confirm that clean closure of the building has been achieved. If results of the water analyses indicate that concentrations of contaminants are still present in the wastewater after the initial wash and three rinse cycles, the Army will either:

- Perform a second round of washing and three rinses and collect new samples of the resulting liquids for chemical analysis and review; or
- Prepare and submit a plan for the closure of Building 307 as a "landfill."

The former of these two alternatives will most likely be selected if the sample results indicate that the concentrations of identified contaminants found in the rinse waters are decreasing with successive rinse cycles. Such a finding would suggest that the decontamination process is working, but has not yet been completed. Subsequent data evaluations would proceed in a similar manner.

The latter of these two alternatives would be selected if a review of the available rinse water data indicated that the concentrations of the identified contaminants were not decreasing and that high levels of "leachable" contamination were present in the walls and floor of the building. If closure as a "landfill" were selected, additional plans would also be required for the exploration of the soil and groundwater underlying and surrounding the structure to verify whether a release of hazardous waste or materials had occurred to the environment.

2.3 8 Schedule

The Army plans to begin closure of Building 307 in the spring of 2003 (approximately April 9, 2003). The anticipated schedule for closure of this facility is depicted in **Figure 2-2**. As shown, closure and certification of the closure of Building 307 is expected to be completed within 150 days of the Army's notification of its intention to close the Hazardous Waste Container Storage Facility.

2.3.9 Closure Costs

An estimate of the costs to close Building 307, the Hazardous Waste Container Storage Facility has been developed using MCACES. Costs projected for this activity have been derived based on the Army retaining a third-party consultant to oversee the proposed closure of Building 307 and to collect the necessary samples for analysis, and a third-party organization being retained to complete all of the required decontamination and hazardous waste removal operations. All decontamination wastes will be shipped off-site for disposal at a licensed TSDF.

The estimated cost for closing Building 307 is approximately $73,000. This cost is exclusive of the removal and disposal of any residual drummed quantities of hazardous waste other than wastes generated during the proposed decontamination process. Details of this estimate are summarized in **Table 2-5**. Should a second round of decontamination prove to be necessary, due to the determination that levels of PCBs above the 10 ug/100 cm^2 criteria level remain, an additional estimated cost of $131,500 may be required.

As was indicated in **Section 2.3.1**, Building 307 currently sits empty. All hazardous waste generation operations previously conducted by the Army at the Depot have ceased, and no waste hazardous waste inventory remains. As is indicated in **Section 2.3.1**, the Army plans to conduct a survey of the Depot to verify that all drummed hazardous waste has been removed from the site prior to the closure of Building 307. If drummed hazardous waste is identified, it will be moved to Building 307 prior to the initiation of closure activities, and then this material will be removed from Building 307 as part of the overall closure process. The additional costs of disposing of the maximum quantity of hazardous waste ever stored at Building 307 as one operation is independently estimated as approximately $75,150. Details of this estimate are also summarized in **Table 2-5**.

Details of both estimates are provided in **Appendix C** of this closure plan.

TABLE 2-1
Building 307 - Total Hazardous Waste Stored (calendar years 1994-2001)

Seneca Army Depot Activity – Romulus New York

EPA waste code(s)	Total pounds	EPA waste code(s)	Total pounds
B002	189		
D001	36,376	D001, D002	3,475
D001, D007, D008, D009	444	D001, D008	13,239
D001, D011, D103, D002, D088	21	D001,D013	94
D001, D018	8,915	D001, F002, D035	596
D001, F003	1,402	D001, F005	76
D001, U002	257		
D002	100,550	D002, D006	1,100
D002, D007	66	D002, D008	1,605
D003	34		
D005	340		
D006	102	D006, D007, D008	3,400
D006, D008	1,806	D006, D007, D009	2,834
D007	1,154	D007, D008	731
D007, D011	422		
D008	10,357	D008, U072	7
D009	38	D009, U151	51
D016	5,696		
D018	7,480		
D026	690		
D039, U080	225		
D040	12,806		
D103	18		
F002	68		
F003	2,672		
P001	3		
U122	15		
U220	9,944		
U226	296	U226, D001, D002	20
U228	18		

TABLE 2-2

BUILDING 307 - MAXIMUM ANTICIPATED WASTE INVENTORY AT CLOSURE

SENECA ARMY DEPOT ACTIVITY – ROMULUS, NEW YORK

EPA/DEC ID #	Description	Estimated Hazard	Inventory at Closure (Drums)
Building 307			
D001	Spent Stoddard Solvent Paper Paint Filters Lacquer Thinning Liquid	Ignitable	25 5
D002	Cleaning Compound	Corrosive	25
D005	Deactivation Furnace Dust	TCLP Toxic	8
D008	Battery Acid Sludge from Oil/Grease Separators	TCLP Toxic	3 3
F002	Methylene Chloride	Toxic	4
F003	Acetone and Toluene Wipes	Toxic	2
F005	Mixed Solvents Rags with Solvents (F002, F003)	Toxic, Ignitible	4 25
B001	PCB Oil	Toxic	1
B002	PCB Hydraulic Fluid	Toxic	3
B003	PCB Hydraulic Fluid	Toxic	2
B007	Other PCB Contaminated Materials Still Bottoms from 1,1,1-Trichloroethane Vapor Degreasers	Toxic Toxic	5 4

TABLE 2-3
SAMPLE PREPARATION AND ANALYSIS PROCEDURES - BUILDING 307

SENECA ARMY DEPOT ACTIVITY – ROMULUS, NEW YORK

PARAMETER	PREPARATION*	ANALYSIS
TCL Volatiles	Method 5030/5035 as appropriate	Method 8260B
TCL Semi-Volatiles	Method 3510/3640 as appropriate	Method 8270C
TCL PCBs	Method 3510/3520/3540/3541 as appropriate	Method 8082
TAL Metals	Method 3010/3015/3020 as appropriate	Method 6010B and 7XXX series as appropriate

Table 2-4

Example of Random Number Selection Process

Seneca Army Depot Activity – Romulus, New York

Grid Cell ID	Starting Coordinates	
49 – Rejected Ramp	62	86
50 – Accepted	8	98
11 – Accepted	90	5
77 – Accepted	8	95
73 – Accepted	54	76
05 – Accepted	40	7
50 – Accepted	16	2
65 – Accepted	18	9
35 – Accepted	34	65
42 – Accepted	4	7
27 – Accepted	22	57
00 – Accepted	98	1

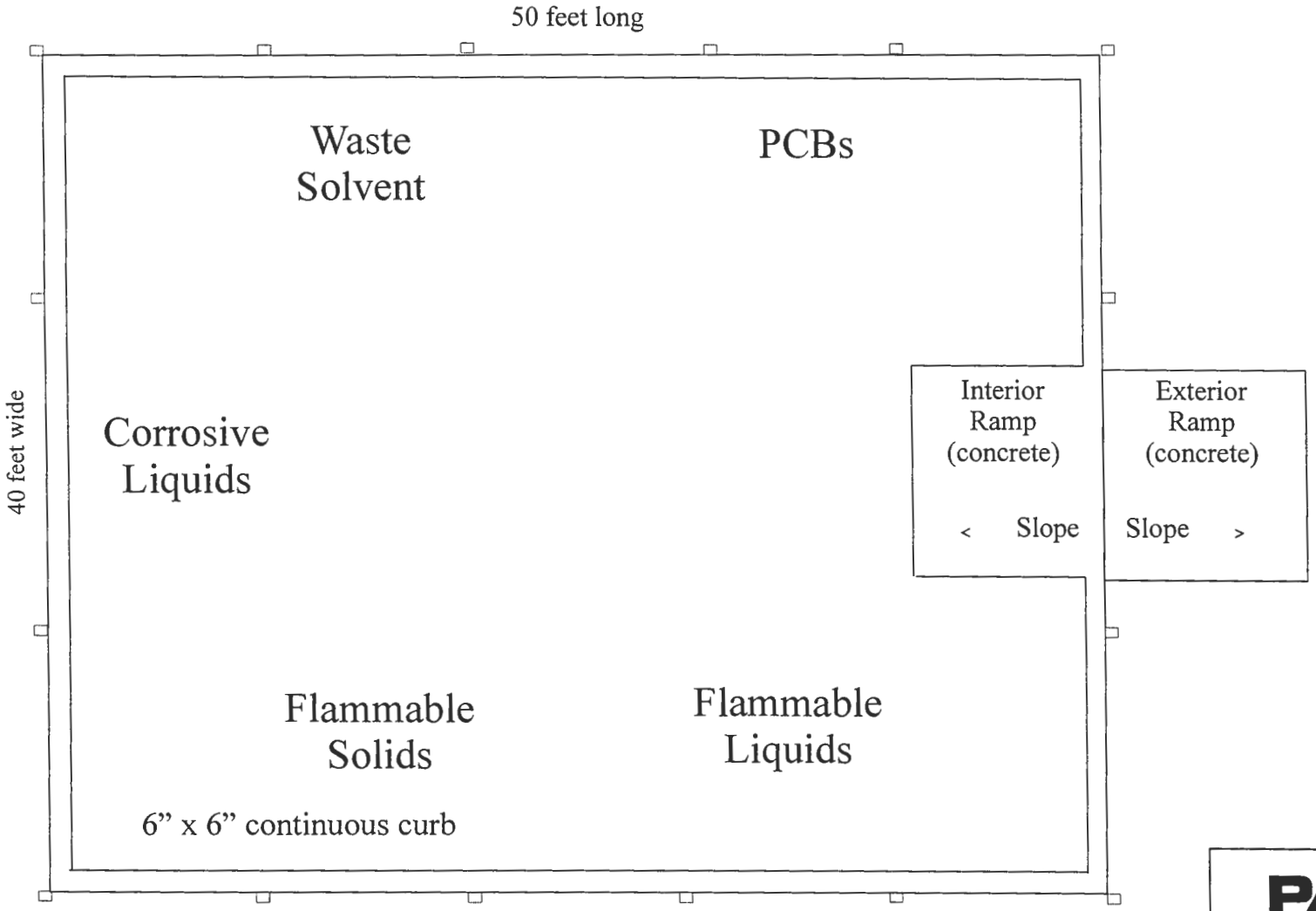
TABLE 2-5
EXPECTED CLOSURE COSTS - BUILDING 307

SENECA ARMY DEPOT ACTIVITY – ROMULUS, NEW YORK

Closure Activity	**Estimated Costs (Dollars)**
33.15 Decontamination	$ 10,630
33.17 Decontamination Waste Disposal	$ 7,400
33.20 Sample Collection and Analysis	$39,030
33.22 Closure Certification	$ 12,400
33.26 Project Management/Procurement	$ 3,400
Total	**$72,860**

Aggressive Closure Activity – Optional	**Estimated Costs (Dollars)**
33.36 PCB Decontamination	$ 67,740
33.40 Post PCB Decontamination Sampling	$39,510
33.22 PCB Closure Certification	$ 12,400
33.26 Project Management/Procurement	$ 11,800
Total	**$131,450**

Optional	
33.10 Dispose Hazardous Waste Inventory	**$75,140**



Building 307
Hazardous Waste Container Storage

PARSONS

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
RCRA CLOSURE PLAN

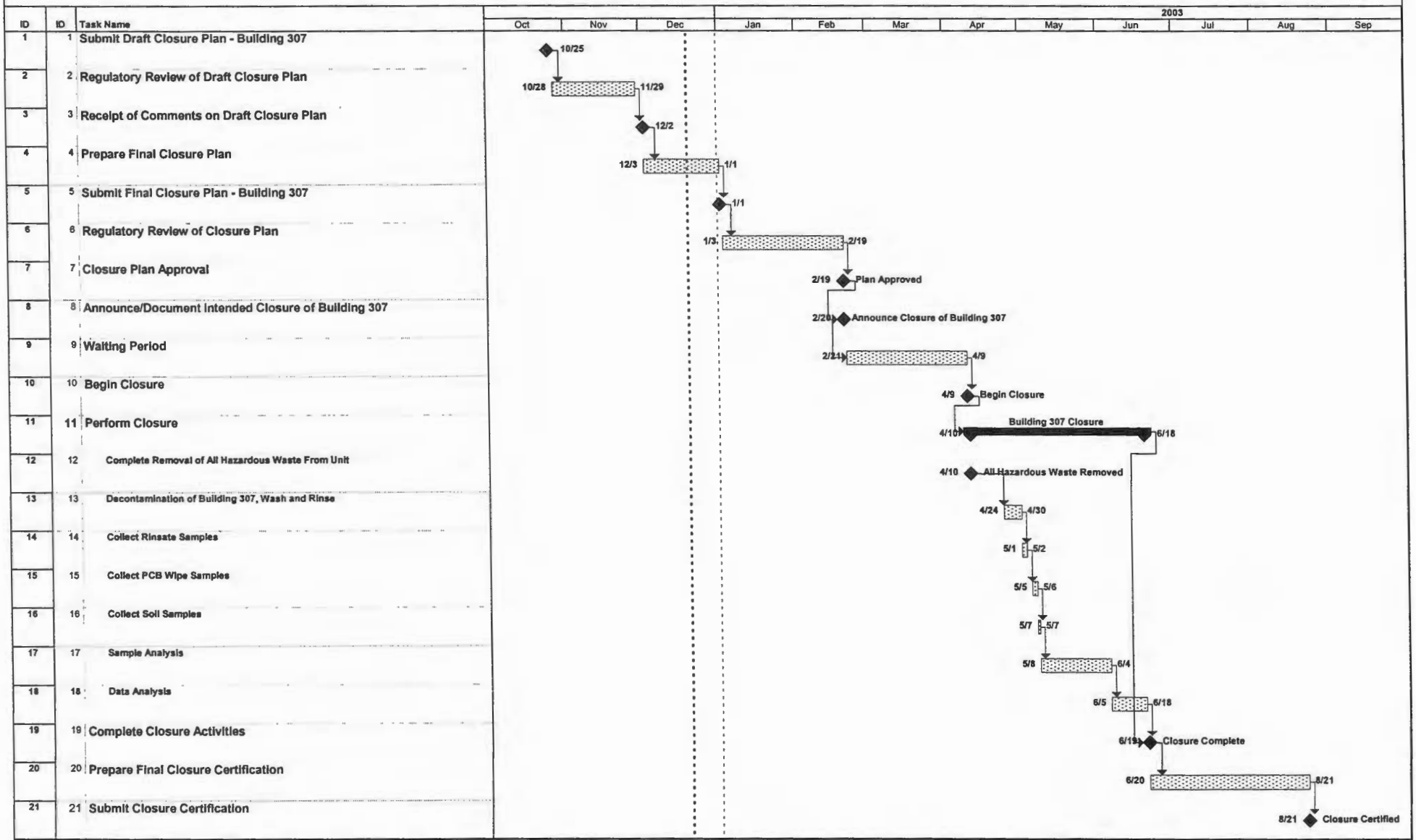
DEPT.	DWG NO.
ENVIRONMENTAL ENGINEERING	739263-01004

FIGURE 2-1
Building 307 Layout
Hazardous Waste Container
Storage Facility

SCALE	DATE
	DECEMBER 2002

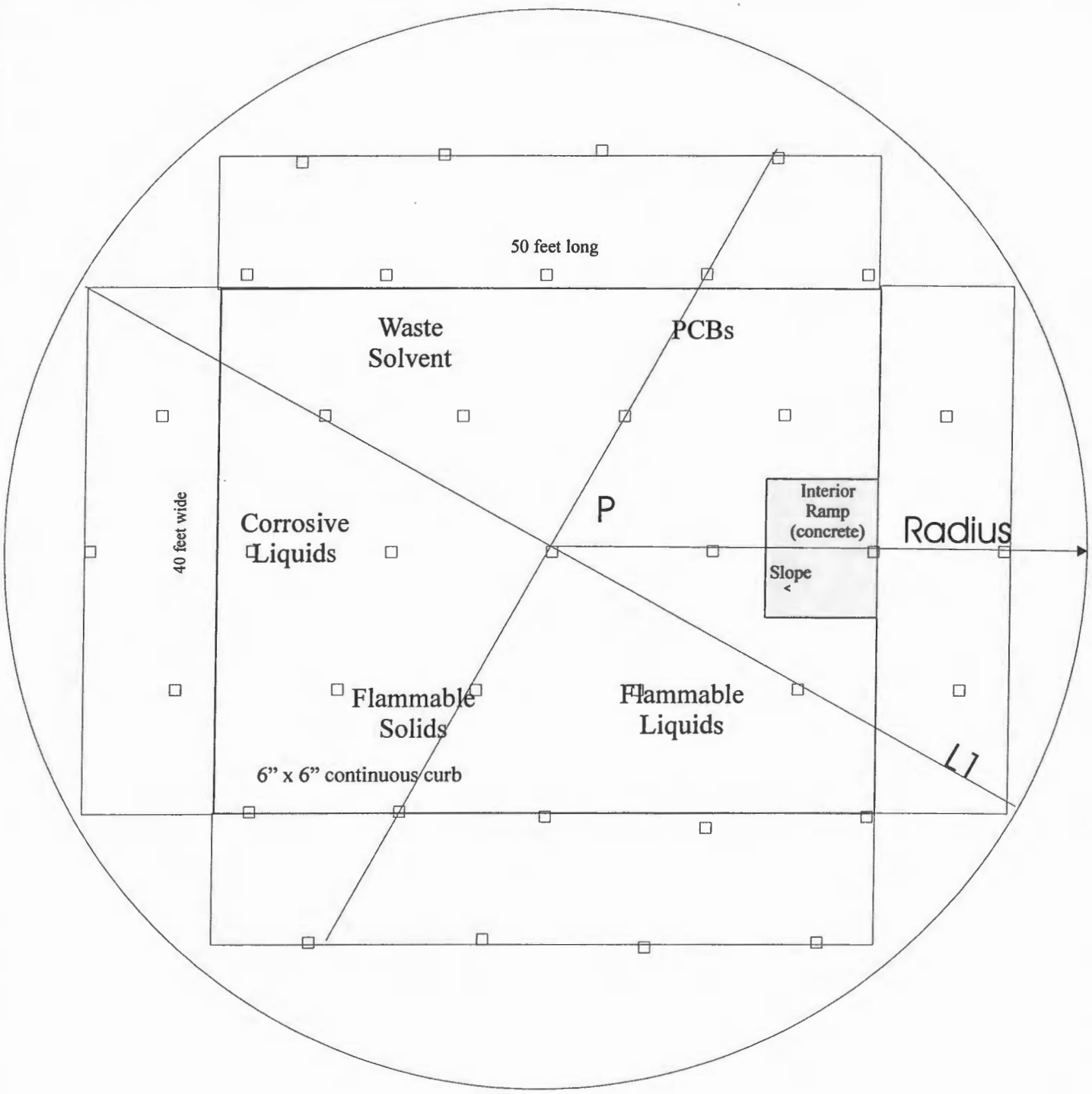
FIGURE 2-2
CLOSURE SCHEDULE - BUILDING 307
Hazardous Waste Container Sorage Facility

Seneca Army Depot Activity - Romulus, New York



Project: Figure2_1
Date: 12/20/02

Task | Milestone | Rolled Up Task | Rolled Up Progress | External Tasks | Group By Summary
Progress | Summary | Rolled Up Milestone | Split | Project Summary



□ Proposed Wipe Sample Location

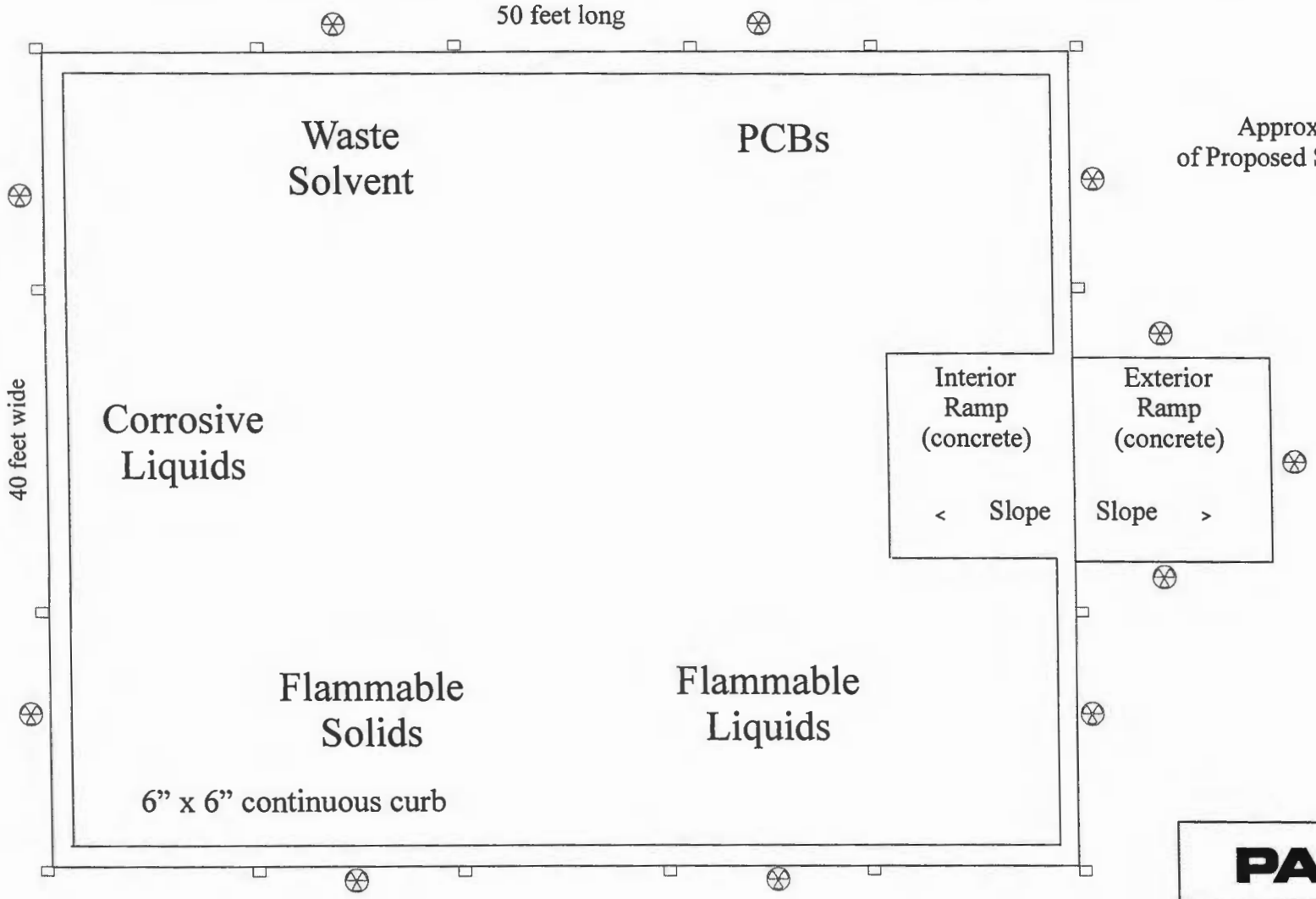
PARSONS

SENECA ARMY DEPOT ACTIVITY
RCRA CLOSURE PLAN

ENVIRONMENTAL ENGINEERING | DWG NO. 739263-01004

FIGURE 2-4
Building 307
PCB Wipe Sample Grid Layout

SCALE | DATE DECEMBER 2002



Building 307
Hazardous Waste Container Storage

PARSONS

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
RCRA CLOSURE PLAN

DEPT.	DWG NO.
ENVIRONMENTAL ENGINEERING	739263-01004

FIGURE 2-5
Building 307 Layout
Hazardous Waste Container
Storage Facility

SCALE	DATE
	DECEMBER 2002

3.0 CLOSURE PLAN FOR THE POLYCHLORINATED BIPHENYL (PCB) TRANSFORMER STORAGE BUILDING, BUILDING 301 (SEAD-2)

3.1 GENERAL FACILITY DESCRIPTION AND OVERVIEW OF HISTORIC OPERATIONS

Building 301 is located in the east central portion of SEDA, approximately 6,000 feet west, southwest of the Depot's main entry gate off New York State Highway, Route 96. The building is located near the munitions igloo storage area, on land whose future land use is designated as the site of planned industrial development.

The Army constructed Building 301 in 1942. The building was upgraded in 1986 to meet hazardous waste storage requirements conforming to RCRA (Title 40 Code of Federal Regulations – CFR Part 264, Subpart 175; 6 NYCRR § 373-2.9; and 6 NYCRR § 373-3.30). The Army has used Building 301 as a PCB Storage Facility since approximately 1980.

The exterior dimensions of Building 301 are 35 feet 4 inches long by 23 feet 4 inches wide, and the main structure is bounded partially on two sides (east and west), and completely on a third side (i.e., north) by a raised loading dock or platform that measures 6 feet 4 inches in width. The raised loading platform ramps to ground surface on the western side of the building, and a stairway provides transition from the ground to the raised loading dock halfway along the eastern side of the building. No raised loading dock exists along the southern face of the building. A schematic diagram of the building is shown in **Figure 3-1**.

Access to the building from the loading dock is provided through either of two 8-foot by 8-foot overhead doors; one access door is located on the northern side of the building while the second is located on the eastern side of the building. When Building 301 was initially constructed, it did not include provisions for secondary containment within the building. As such, the original elevation of the loading dock and the floor inside of the building were equivalent. This design inadequacy was corrected in 1986 during the Building 301 Upgrade Program. As part of this program, access/egress ramps were installed outside of both doors (north and east sides), and inside the building on the north side of the building. Additionally, a new 6-inch thick, monolithic concrete slab floor and elevated curb structure (i.e., 6-inch thick curbs completely surrounding the floor slab with their top set 6 inches above the top of the new floor slab) were added to the building. The ramps placed along the northern side of the remodeled building provided wheeled-device (e.g., dolly, appliance truck, barrel truck) access and egress to the inside of the building, while maintaining the integrity of the secondary containment established by the monolithic floor/curb structure. Once the improvements were completed, the estimated secondary containment volume available within Building 301 was estimated at approximately 2,500 gallons.

As part of the 1986 Building 301 Upgrade Program, surface soil samples were collected from each of the exterior corners of the building and analyzed to determine total PCB content. The results of this sampling show that each of the four samples contained less than 1 part per million (ppm) of total PCBs.

The roof and walls of Building 301 were designed to prevent precipitation from entering and accumulating inside the building. A roof constructed of pre-cast concrete planks supported by steel trusses covers the building. A gravel and tar coating cover the concrete planks. The roof is slightly pitched to promote precipitation runoff.

The exterior walls are 12-foot high and made of 12-inch thick scored tile. Ventilation in the building is passive as there is no electrical service currently in place at the building.

Building 301 was used for the storage of materials associated with unserviceable transformers or other electrical equipment that are known, or suspected, to contain PCBs. Linemen delivered the decommissioned units to the building, where they were stored pending sampling. These materials are the property of the Defense Reutilization and Marketing Office (DRMO).

Subsequent to their delivery to Building 301, the delivered equipment was inspected, and if it was found to be leaking, it was placed into an overpack drum and surrounded by absorbent material. All leakage from the unit was then captured via application of absorbent that is swept-up, containerized in a drum or suitable receptacle, and sent to Building 307 (SEAD-1), the Hazardous Waste Container Storage Facility, for storage pending disposal. Units not found to be leaking at the time of their initial delivery to Building 301 were placed on pallets and stored pending subsequent sampling of the fluid and determination of the concentration of PCBs contained.

Units found to contain PCB concentrations above 50 parts per million (ppm) were drained, and the drained fluid was captured and transported to Building 307 (SEAD-1, the Hazardous Waste Container Storage Facility) for storage pending disposal. Units containing a PCB concentration of less than 50 ppm were stored in Building 301 pending their final disposal by the Army DRMO.

Once transported to Building 301, the storage containers were stored until disposal contracts are procured for their removal from the building. While the Depot was active, the Facility Environmental Engineer (FEE) and personnel of the fire department conducted regular weekly inspections of the Hazardous Waste Storage facility; since the termination of the Depot's mission, only the FEE makes the inspections. The results of these inspections indicate that there is no evidence of historic release within the building and that the building appears to be in good structural condition. The average storage time for PCB-containing equipment at Building 301 is approximately seven months.

3.2 CLOSURE PERFORMANCE STANDARD

RCRA regulations present two closure options for regulated units: clean closure (i.e., removal of contamination), or closure as a landfill (i.e., containment and long-term maintenance of the contamination that is left in place). The closure plan for Building 301, the PCB Transformer Storage Building (SEAD-2) has been developed to achieve clean closure. A systematic approach will be followed such that the area used for PCB transformer and component storage will be suitably decontaminated to eliminate or minimize the need for further maintenance, threats to human health and the environment, and the release of hazardous constituents to groundwater, surface waters, or the atmosphere. The Army will not need to close the containment unit in accordance with requirements of a landfill. If the Army finds that its clean closure goal is non-achievable, this closure plan will be modified in accordance with the requirements of 6 NYCRR § 373-3.7(h) and § 373-3.30(c)(2).

3.3 CLOSURE PLAN

The following section outlines the procedures to be followed to close Building 301, the PCB Transformer Storage Building (SEAD-2) in accordance with the requirements of Title 6 NYCRR Part 373-3.7(b), the Closure Performance Standard, and Title 6 NYCRR Part 373-3.30(c) Closure and Post-Closure Care (Containment Buildings).

3.3.1 Maximum Inventory

Building 301 currently sits empty of any waste containing or previously containing PCBs. The last previous shipment of PCB containing wastes was removed from the Depot in 1998. The maximum inventory of hazardous wastes ever stored at Building 301 during its active life is estimated as approximately 50 drums of PCB contaminated articles and 10 PCB containing articles. An estimated breakdown of the maximum inventory content is provided in **Table 3-1**.

The Army has performed an inventory of locations where transformers and other PCB containing wastes have historically originated at the Depot. Transformers still exist at the Depot, but their PCB content is known and none of them are currently known to be leaking. Continuing inspection and maintenance of the remaining transformers has been turned over to the New York State Electric & Gas Corporation (NYSEG). All other historic operations known to generate PCB containing wastes have ceased and all residual PCB wastes from these sites have been removed. These steps ensure that inactive transformers that may contain hazardous concentrations of PCBs do not remain on-site. At present the only materials that are contained in Building 301 include furniture and unused, empty 55-gallon drums and 85-gallon overpacks that remain from previous operations.

Two days prior to the scheduled removal of all materials from Building 301, a meeting will be held between the Army and the selected disposal contractor. At this time, a thorough inspection of the storage

areas will be performed to (1) verify that no PCB containing wastes remain at the Depot unless it is under the control and inspection of NYSEG; (2) ascertain the condition of all residual furniture and drums that are stored in Building 301; and (3) review the contractor's responsibilities in conforming with all aspects of the closure plan, including waste manifesting, spill prevention, and safety.

3.3.2 Removal of Hazardous Waste Inventory

Any remaining waste inventory remaining in Building 301, the PCB Transformer Storage Building will be removed during a planned one- or two-day event. A team of professional hazardous waste removal technicians will travel to the Depot and conduct the planned removal of the remaining hazardous waste inventory. Necessary licensed, hazardous waste transport vehicles will be staged in close proximity to Building 301 for the duration of the transfer and loading operations. Access and egress paths between the transport vehicles and the building will be clearly marked and cordoned off to limit unnecessary vehicular and pedestrian traffic throughout the period of the transfer and loading operations.

Personnel performing the transfer and loading operations will wear acid/solvent resistant overalls, head and eye protection, chemical resistant gloves and boots, and be provided full-face respirators fitted with organic vapor and acid gas filter cartridges. Use of respiratory protective equipment is not currently anticipated during the removal and transfer operation; thus this equipment will be available to each member of the removal team as a safety precaution. Additionally, backup health and safety equipment (e.g., adsorbent materials and pads, neutralization chemicals, eyewash stations, first-aid kits, emergency evacuation air packs or self-contained breathing apparatus, drum overpacks, etc.) will be staged in close proximity of the building for the duration of the removal and decontamination operation as a safeguard in the event that they are needed.

Prior to their movement, all drums containing PCB contaminated articles and all transformers will be re-inspected to ensure that their contents are clearly and legibly identified, and that any sealing bungs and caps are securely fastened. Additionally, the exterior of all drums and transformers will be re-inspected for evidence of corrosion, blistering paint, or leakage, and any container identified as being improperly marked or of poor quality will receive necessary attention prior to any movement from the building. All containers to be included in a shipment will also be clearly listed on the hazardous waste manifest that will accompany the shipment from the Depot to the designated TSDF.

All articles will be removed from the Building 301 storage area on their respective pallets using a forklift truck. Once removed from Building 301, the articles will be moved directly to, and loaded on, one of the staged hazardous waste transport vehicles. As each article is moved, their identity will be cross-checked against the manifest to ensure that articles are recovered and properly organized.

Any empty drums stored in the storage area will also be removed and transported off-site for disposal or

recycle, separately. The Army, or their designated agent, will supervise the transfer of all PCB containing articles and transformers to ensure compliance with all aspects of safety plans and approved closure techniques.

Articles and drums containing PCB liquids and sludges will be transported to a permitted and approved secure off-site facility for treatment or disposal. Empty drums will preferably be transferred to an approved drum reconditioning facility, or crushed/shredded and disposed of off-site in a secure land burial facility.

After the removal of all stored PCB articles, the Army or its designated agent, and the disposal contractor will inspect all interior building floors and walls, and the exterior building access/egress ramp's surface for evidence of leakage or spillage. If visible evidence of leaks is identified, the disposal contractor will use appropriate absorbent compounds to contain and clean up any spilled liquids. Solid materials will be swept up and placed in DOT-approved, steel 55-gallon drums. Stains observed on the building's interior walls or floors or the exterior ramp's surface will be noted and marked, and will receive extra attention during the planned decontamination sequences.

In the event that an accident (e.g., spill) occurs during the transfer of hazardous wastes from Building 301 to the transport truck, the area surrounding the spill will immediately be cordoned off, and necessary containment measures will be implemented to contain and minimize the extent of the event. Recoverable liquid will be captured and transferred to suitable containment drums, while solid hazardous wastes or adsorbent materials will be swept or scrapped up and added to other containment drums. These drums will then be re-inventoried and added to the planned shipment.

Samples from the area where the spill event occurred will then collected and these samples will be analyzed to document the extent of the impact to the area. Additional discussions of sampling and analysis are provided below.

Disposable personal protective equipment worn by workers will be collected and placed in drums for subsequent disposal as a hazardous waste at a permitted and approved, off-site disposal site. Reusable personnel protective equipment will be decontaminated at the end of each day, and all wash and rinse solutions and adsorbent materials will be collected and containerized for disposal off-site as hazardous waste.

3.3.3 Decontamination of Building

All personnel involved in the building decontamination process will wear Tyvek® disposable coveralls, head and eye protection, chemical-resistant gloves and boots, and full-face respirators fitted with organic vapor and acid gas filter cartridges.

A preliminary sampling grid for exposed non-porous surfaces at Building 301 was developed in accordance with procedures identified in EPA's guidance manual "Field Manual for Grid Sampling of PCB Spill Sites to Verify Clean-up" (EPA-560/5-86-017). Based on the EPA's guidance procedures, 37 preliminary sampling locations were identified and placed. The preliminary layout is displayed in **Figure 3-4**, and as may be seen from a review of this figure, 17 of the proposed sampling locations are located beyond the bounds of the non-porous surfaces. The locations exterior to the non-porous surfaces will be addressed under the soil sampling activities discussed below in **Section 3.3.5**. Therefore, the Army proposes to collect 20 wipe samples, plus additional QA/QC samples from locations on the non-porous walls and floors of Building 307. A diagram of the proposed surface wipe samples is provided as **Figure 3-4**. Final placement of the wipe samples will be confirmed after consultation with NYSDEC's field observer at the site.

All wipe samples will be collected from sampling areas that conform to TSCA's recommended 100 square centimeter surface area. The procedure for the collection of these samples is provided in **Appendix B**.

3.3.5 Grounds Surrounding Building 301

No records of historic spills or releases of chemical materials exist in the Army's operational record for the Depot or Building 301. Therefore, surface soil contamination associated with or attributable to historic operations conducted at this building is not expected. Nevertheless, surface soil samples will be collected and analyzed to determine if evidence of possible hazardous material release exists in the shallow soils surrounding the building.

Initially, a minimum of 11 shallow surface soil samples, plus necessary QA/QC samples, will be collected from the soil exterior of Building 301. Three samples are proposed for the north side; one will be place on the ground just beyond the downward edge of the access ramp into Building 301, while the remaining two will be placed to either side of the ramp just beyond the edge of the receiving dock. Two shallow soil samples will be collected from the west side, at locations exterior of the ramp that slopes to the south. Two shallow soil samples will be collected from the south side; one just beyond the downward edge of the ramp, and the other part way along the southern face of the building. Four samples will be placed on the eastern side; one just beyond the edge of the access stairs, one just beyond the edge of the access ramp and two others at locations along the eastern face.

Each shallow soil sample will be recovered from the top two or three inches of soil that underlies any vegetative cover (e.g., grass). Each sample will be collected at a location that is no more than two feet beyond the edge of the building. The final location of each soil sample collected will be biased towards areas that exhibit visible signs of vegetative stress or soil staining. A schematic showing the proposed location of shallow soil samples is presented in **Figure 3-5**.

Each of the collected soil samples will be analyzed to determine concentrations of TCL volatile and semivolatile organic compounds, and PCB compounds, and TAL metals. A description of applicable sample preparation and sample analysis procedures that will be used is provided in **Table 3-2.** Analytical results will be used to document whether evidence of a possible release of hazardous materials exists around the building. A discussion of sample data analysis is provided in **Section 3.3.7** below.

If the results of the preliminary soil sampling suggest that a release of hazardous materials has occurred from Building 301 to the surrounding environment, the Army will prepare and submit a plan for subsequent actions that will be performed to further evaluate the extent of the contamination present. Possible additional actions that may be required if exterior shallow soil contaminated is identified include:

- Collection and analysis of additional samples of the soil, groundwater, surface water and sediment (as applicable);
- Excavation and replacement of contaminated soil (if identified);
- Demolition and disposal of Building 301;
- Implementation of run-on and run-off controls;
- Long-term groundwater monitoring programs;
- Installation of contaminated groundwater containment or treatment systems; or
- Closure of the site as a landfill.

Specific details of any follow-up program proposed for the area of Building 301, if required, will be documented and submitted to the NYSDEC and the EPA for review and approval before it is implemented.

3.3.6 Decontamination Water and Solutions

All waste wash water, rinse water and equipment flush/rinse water will be captured, recovered, pumped into a storage tank, sampled, and transported off-site for ultimate treatment and disposal. Recovered detergent/water wastewater will be initially handled as hazardous wastes. Once all decontamination operations are completed, samples will be collected from each tank and these samples will be analyzed for TCL volatile organic, semivolatile organics, PCBs and TAL metals according to procedures identified in **Table 3-2.** Analytical results from the analysis of decontamination waters and solutions will be reviewed to determine the appropriate disposal method for the rinse waters. If necessary, rinse waters will be handled as hazardous wastes; however, if the results indicate that the rinse water is free of

contamination it will be disposed at a wastewater treatment plant.

3.3.7 Data Analysis

Rinsate Samples

Analytical results from rinsate samples collected during the closure of Building 301 will be reviewed and compared to New York State Water Quality Standards for Class GA groundwater (6 NYCRR § 703.5) to assess whether evidence of residual contamination exists and to determine how the water will be disposed (e.g., hazardous waste or disposed at wastewater treatment plant). Results of the analyses will be provided to and reviewed with NYSDEC to confirm that clean closure of the building has been achieved. If results of the water analyses indicate that concentrations of contaminants are still present in the wastewater after the initial wash and three rinse cycles, the Army will either:

- Perform a second round of washing and three rinses and collect new samples of the resulting liquids for chemical analysis and review; or
- Prepare and submit a plan for the closure of Building 301 as a "landfill."

The former of these two alternatives will most likely be selected if the sample results indicate that the concentrations of identified contaminants found in the rinse waters are decreasing with successive rinse cycles. Such a finding would suggest that the decontamination process is working, but has not yet been completed. Subsequent data evaluations would proceed in a similar manner.

The latter of these two alternatives would be selected if a review of the available rinse water data indicated that the concentrations of the identified contaminants were not decreasing and that high levels of "leachable" contamination were present in the walls and floor of the building. If closure as a "landfill" were selected, additional plans would also be required for the exploration of the soil and groundwater underlying and surrounding the structure to verify whether a release of hazardous waste or materials had occurred to the environment.

PCB Surface Wipes

Analytical results from the PCB wipe samples collected during the closure of Building 301 will be reviewed and compared to the 10 ug/100 cm^2 decontamination standard for non-porous surfaces to assess whether evidence of residual contamination exists and to determine how the water will be disposed (e.g., hazardous waste or disposed at wastewater treatment plant). Results of the analyses will be provided to and reviewed with NYSDEC to confirm that clean closure of the building has been achieved. If results of the wipe sample analyses indicate that concentrations of PCBs are still present after the initial wash and three rinse cycles, the Army will either:

- Perform a double wash and rinse decontamination of the building using a decontamination performance-based organic decontamination fluid (PODF – e.g., kerosene, hydrocarbon terpene, diesel fuel, or mixture of terpene hydrocarbons and terpene alcohols) and collect new wipe samples for chemical analysis and review; or

- Prepare and submit a plan for the closure of Building 301 as a "landfill."

The former of these two alternatives will most likely be selected if the wipe sample results indicate that the concentrations of PCBs found on the surface of the building are close to the 10 ug/100 cm^2 performance criteria. Subsequent data evaluations would proceed in a similar manner.

The latter of these two alternatives would be selected if a review of the available PCB wipe data indicated that the concentrations were not decreasing and that high levels of PCB contamination were present in the walls and floor of the building. If closure as a "landfill" were selected, additional plans would also be required for the exploration of the soil and groundwater underlying and surrounding the structure to verify whether a release of hazardous waste or materials had occurred to the environment.

Soil

Analytical results from the soil samples surrounding Building 301 will be reviewed to assess the whether evidence possible releases exist surrounding the building. Data from the analysis of soil samples will be reviewed with personnel of the NYSDEC personnel to confirm that evidence of releases of hazardous materials does not exist.

If analytical results for the shallow soil samples indicate that signs of contamination exist exterior of the building, alternative plans will be prepared and submitted for approval describing further investigations that will be performed to delineate the possible extent of the identified contamination. Future site investigations would most probably include the collection of surface and subsurface soil samples and groundwater samples, and if necessary, surface water and sediment locations. Proposed sample locations would include locations in the immediate vicinity and downgradient of the release to delineate the extent of the apparent release.

As has been indicated, the Army's goal for Building 301 is to achieve clean closure. Thus, if analytical data indicates that it is necessary, soil removal will be conducted, and subsequent confirmational sampling and analyses will be completed to document that surrounding soil has not been impacted by the release of hazardous wastes or materials. If the Army's goal is not achievable, the closure plan for Building 307 will be modified to comply with requirements specified for closure, and post-closure, of containment buildings as a "landfill."

Decontamination Water and Solutions

Analytical results from rinse water samples collected during the closure of Building 301 will be reviewed to assess whether evidence of residual contamination exists and to determine how the water will be disposed (e.g., hazardous waste or disposed at wastewater treatment plant). Results of the analyses will be provided to and reviewed with NYSDEC to confirm that clean closure of the building has been achieved. If results of the water analyses indicate that concentrations of contaminants are still present in the wastewater after the initial wash and three rinse cycles, the Army will either:

- Perform a second round of washing and three rinses and collect new samples of the resulting liquids for chemical analysis and review; or
- Prepare and submit a plan for the closure of Building 301 as a "landfill."

The former of these two alternatives will most likely be selected if the sample results indicate that the concentrations of identified contaminants found in the rinse waters are decreasing with successive rinse cycles. Such a finding would suggest that the decontamination process is working, but has not yet been completed. Subsequent data evaluations would proceed in a similar manner.

The latter of these two alternatives would be selected if a review of the available rinse water data indicated that the concentrations of the identified contaminants were not decreasing and that high levels of "leachable" contamination were present in the walls and floor of the building. If closure as a "landfill" were selected, additional plans would also be required for the exploration of the soil and groundwater underlying and surrounding the structure to verify whether a release of hazardous waste or materials had occurred to the environment.

3.3.8 Schedule

The Army plans to begin closure of Building 301 in the spring of 2003 (approximately April 9, 2003) at roughly the same time as it closes Building 307, the Hazardous Waste Container Storage Facility. The anticipated schedule for closure of this facility is depicted in **Figure 3-2**. This schedule assumes that there are no complications encountered during the anticipated closure of the facility. As shown, closure and certification of the closure of Building 301 is expected to be completed within 150 days of the Army's notification of its intention to close the PCB Transformer Storage Building.

3.3.9 Closure Costs

An estimate of the costs to close Building 301, the PCB Transformer Storage Building has been developed using MCACES. Costs projected for this activity have been derived based on the Army retaining a third-party consultant to oversee the proposed closure of Building 301 and to collect the

necessary samples for analysis, and a third-party organization being retained to complete all of the required decontamination and PCB hazardous waste removal operations. All decontamination wastes will be shipped off-site for disposal at a licensed TSDF.

The estimated cost for closing Building 301 is approximately $65,000. This cost is exclusive of the removal and disposal of any residual drummed quantities of PCB hazardous waste other than wastes generated during the proposed decontamination process. Details of this estimate are summarized in **Table 3-4**. Should a second round of decontamination prove to be necessary, due to the determination that levels of PCBs above the 10 ug/100 cm^2 criteria level remain, an additional estimated cost of $104,00 may be required.

As was indicated in **Section 3.3.1**, Building 301 currently sits empty. All PCB hazardous waste generation operations previously conducted by the Army at the Depot have ceased, and no PCB hazardous waste inventory remains. As is indicated in **Section 3.3.1**, the Army plans to conduct a survey of the Depot to verify that all drummed PCB hazardous waste has been removed from the site prior to the closure of Building 307. If drummed PCB hazardous waste is identified, it will be moved to Building 301 prior to the initiation of closure activities, and then this material will be removed from Building 301 as part of the overall closure process. The additional costs of disposing of the maximum quantity of PCB hazardous waste ever stored at Building 301 as one operation is independently estimated as approximately $46,300. Details of this estimate are also summarized in **Table 3-4**.

Details of both estimates are provided in **Appendix C** of this closure plan.

TABLE 3-1

BUILDING 301 - MAXIMUM ANTICIPATED WASTE INVENTORY AT CLOSURE

SENECA ARMY DEPOT ACTIVITY – ROMULUS, NEW YORK

EPA/DEC ID #	Description	Estimated Hazard	Inventory at Closure (Drums)
Building 301			
B004	PCB Contaminated Articles	Toxic	50
B005	PCB Articles	Toxic	5 units
B006	PCB Transformers	Toxic	5 units

TABLE 3-2
SAMPLE PREPARATION AND ANALYSIS PROCEDURES - BUILDING 301

SENECA ARMY DEPOT ACTIVITY – ROMULUS, NEW YORK

PARAMETER	PREPARATION*	ANALYSIS
TCL Volatiles	Method 5030/5035 as appropriate	Method 8260B
TCL Semi-Volatiles	Method 3510/3640 as appropriate	Method 8270C
TCL PCBs	Method 3510/3520/3540/3541 as appropriate	Method 8082
TAL Metals	Method 3010/3015/3020 as appropriate	Method 6010B and 7XXX series as appropriate

Table 3-3

Example of Random Number Selection Process

Seneca Army Depot Activity – Romulus, New York

Grid Cell ID	Starting Coordinates	
49 – Accepted	62	86
50 – Accepted	8	98
11 – Accepted	90	5
77 – Accepted	8	95
73 – Accepted	54	76
05 – Accepted	40	7
50 – Accepted	16	2
65 – Accepted	18	9
35 – Accepted	34	65
42 – Accepted	4	7
27 – Accepted	22	57
00 – Accepted	98	1
90 – Accepted	56	81
97 – Rejected	52	70
40 – Accepted	8	2
44 – Accepted	6	80
78 – Accepted	65	4

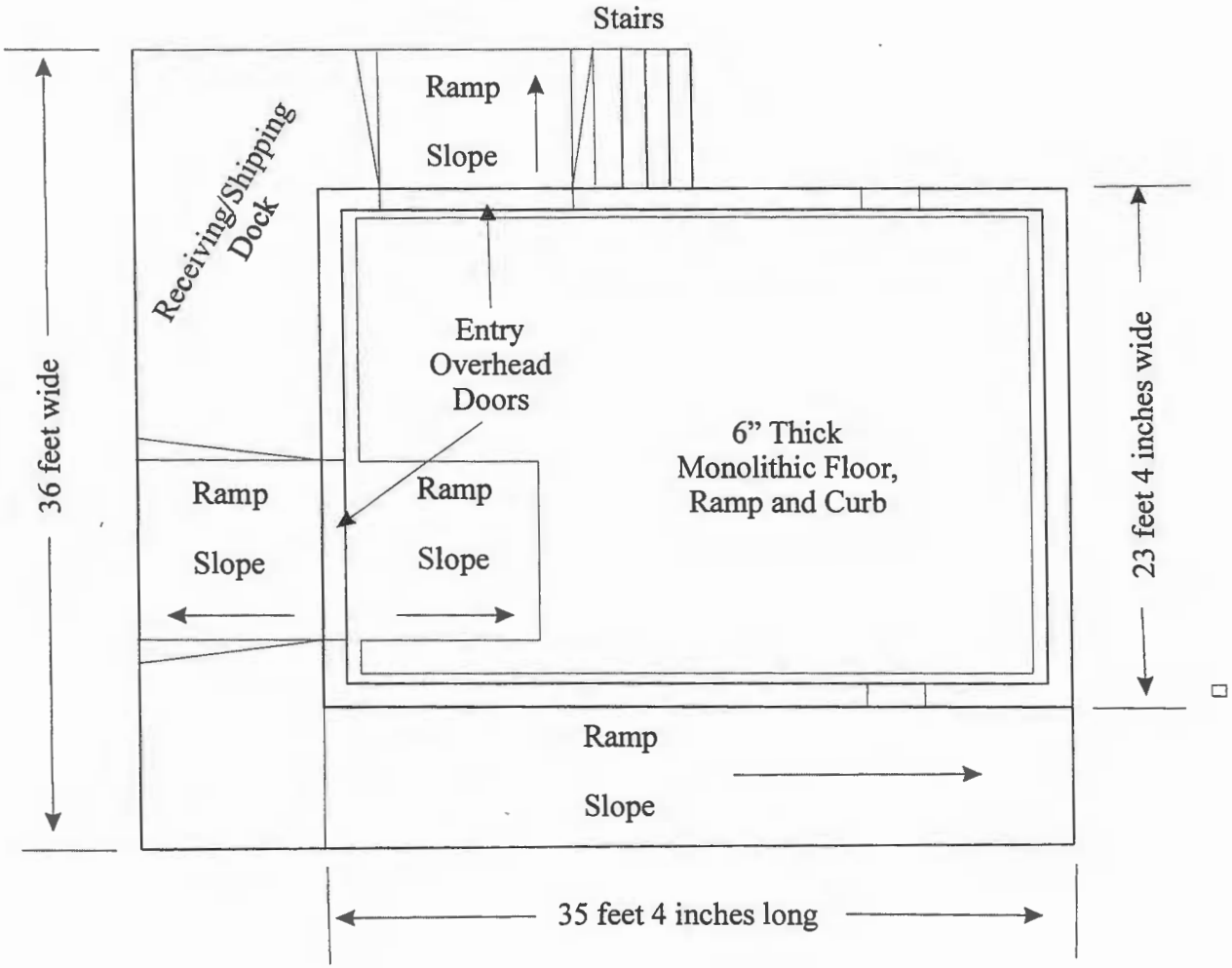
TABLE 3-4
EXPECTED CLOSURE COSTS - BUILDING 301

SENECA ARMY DEPOT ACTIVITY – ROMULUS, NEW YORK

Closure Activity	**Estimated Costs (Dollars)**
33.15 Decontamination	$ 10,630
33.17 Decontamination Waste Disposal	$ 7,610
33.20 Sample Collection and Analysis	$33,930
33.22 Closure Certification	$ 12,400
33.26 Project Management/Procurement	$ 3,400
Total	**$67,970**

Aggressive Closure Activity – Optional	**Estimated Costs (Dollars)**
33.36 PCB Decontamination	$ 48,780
33.40 Post PCB Decontamination Sampling	$33,930
33.22 PCB Closure Certification	$ 12,400
33.26 Project Management/Procurement	$ 11,800
Total	**$106,910**

Optional	
33.10 Dispose Hazardous Waste Inventory	**$46,320**



Building 301
PCB Transformer Storage Building

PARSONS

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
RCRA CLOSURE PLAN

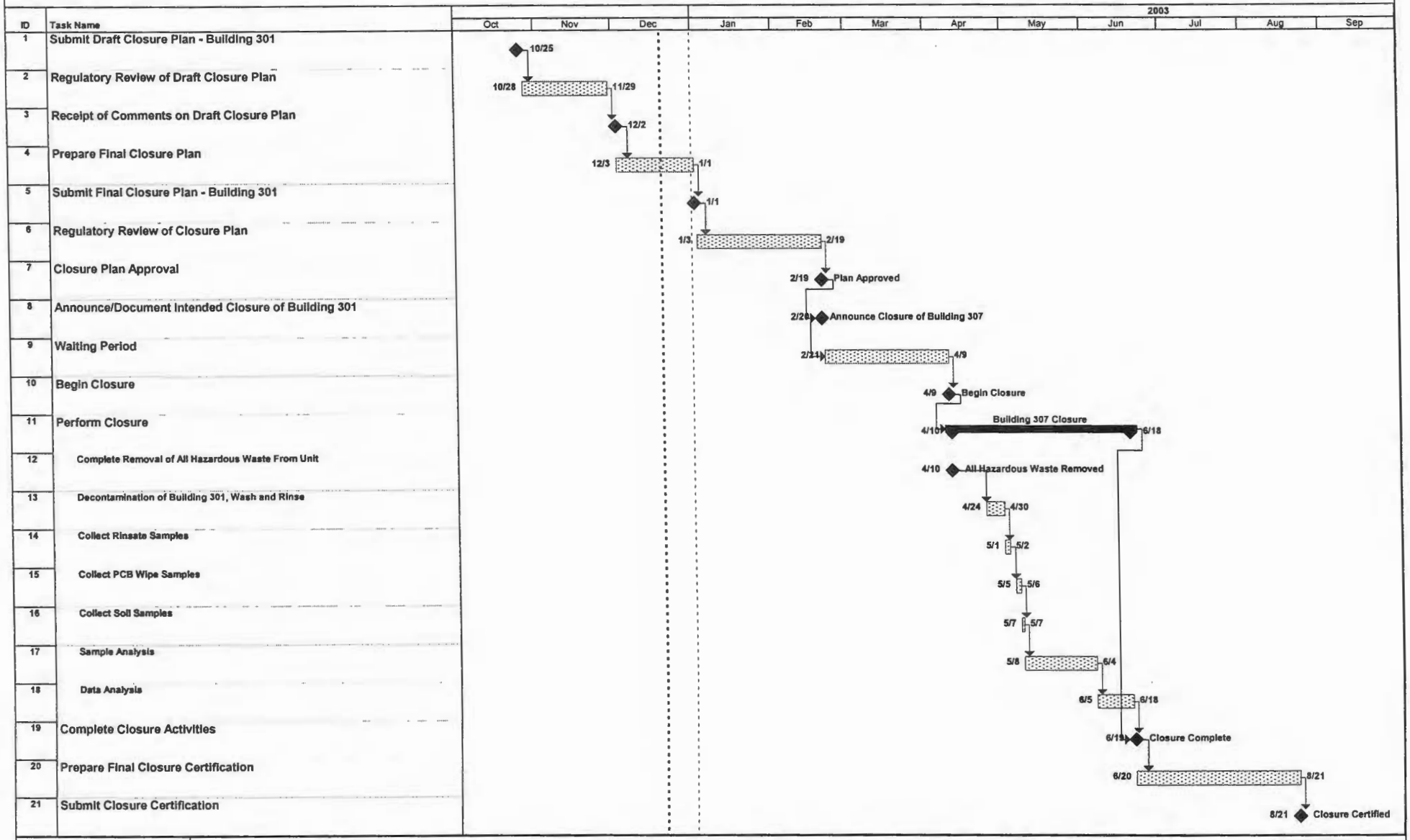
DEPT.	DWG NO.
ENVIRONMENTAL ENGINEERING	739263-01004

FIGURE 3-1
Building 301 Layout
PCB Transformer
Storage Building

SCALE	DATE
	DECEMBER 2002

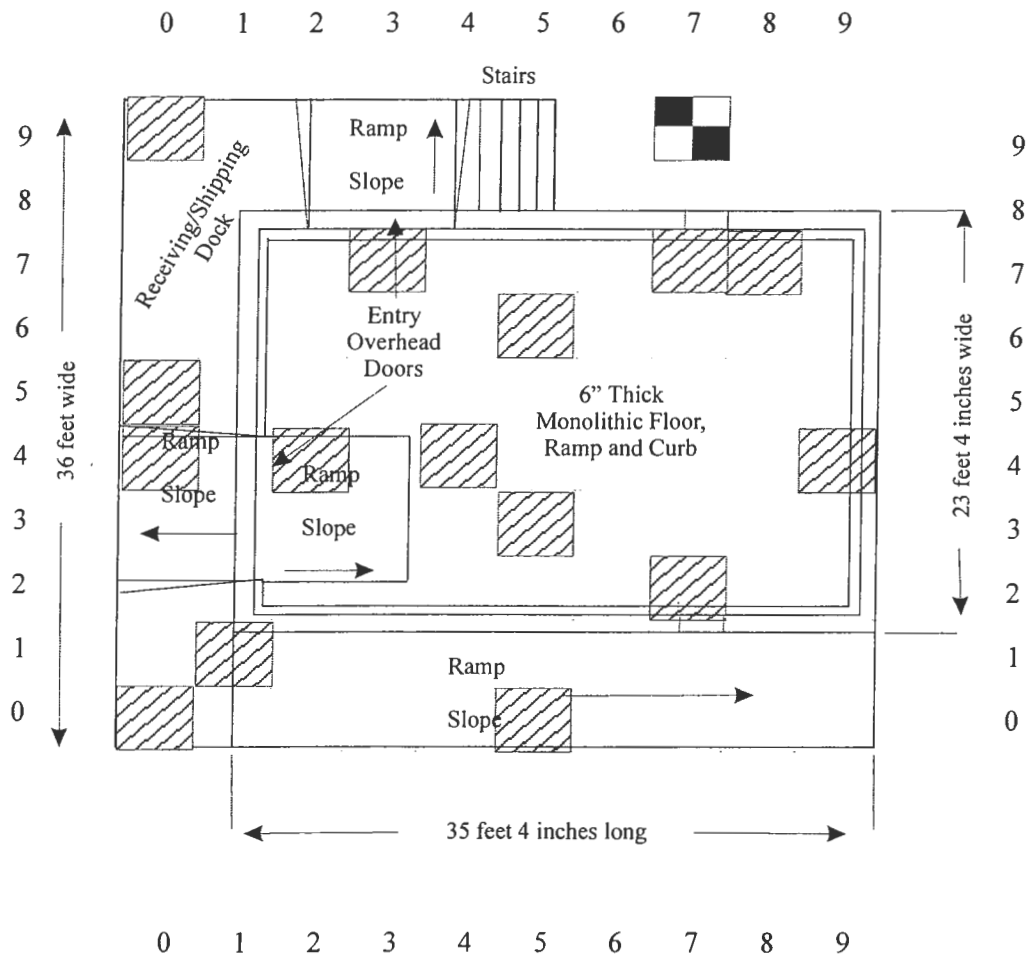
FIGURE 3-2
CLOSURE SCHEDULE - BUILDING 301
PCB Transformer Storage Building

Seneca Army Depot Activity - Romulus, New York



Project: Figure3_2
Date: 12/20/02

Task | Milestone | Rolled Up Task | Rolled Up Progress | External Tasks | Group By Summary
Progress | Summary | Rolled Up Milestone | Split | Project Summary



Rinsate Sample Collected

Rinsate Sample Not Collected

Building 301
Proposed Rinsate Sampling Grid

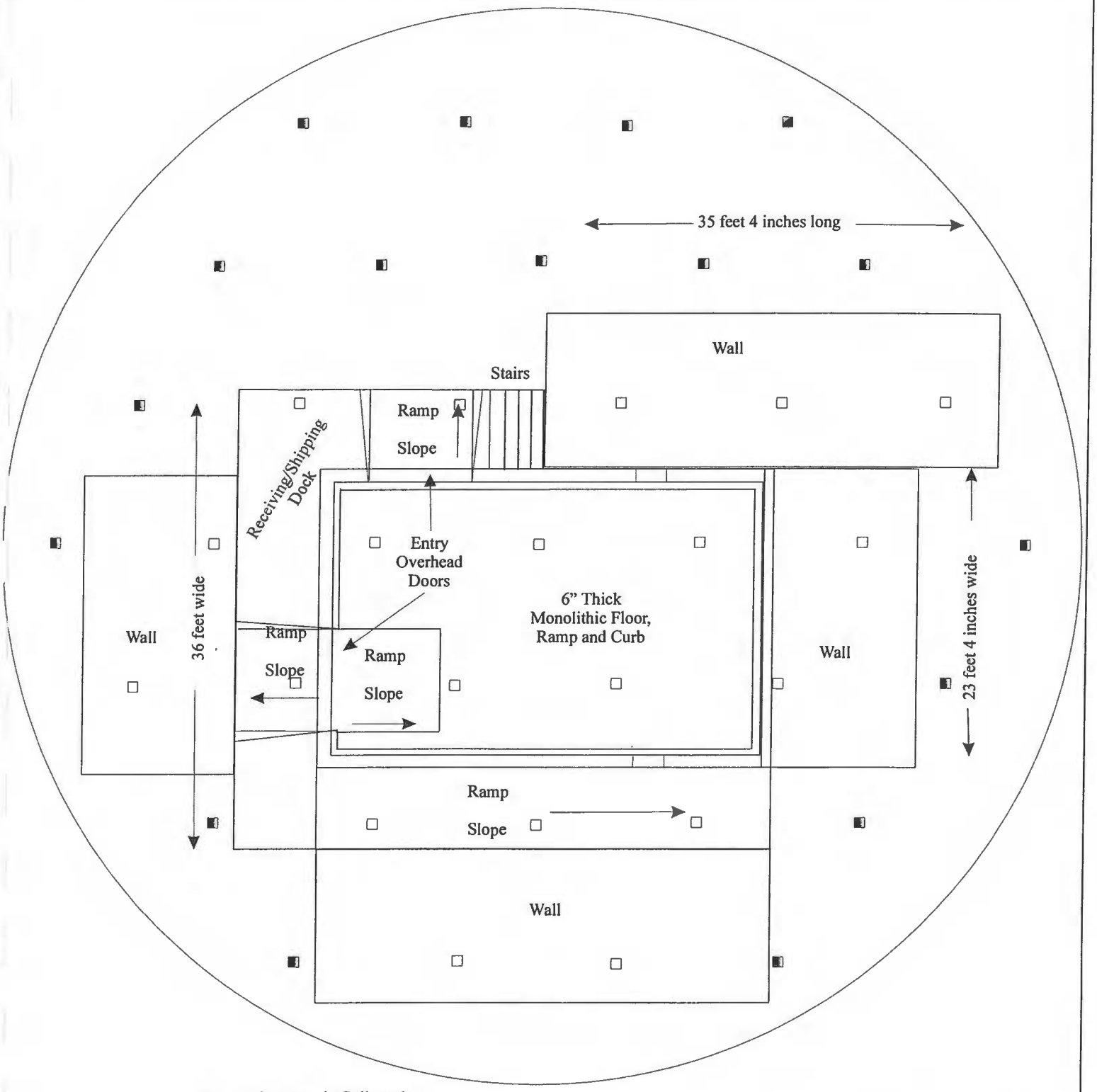
PARSONS

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
RCRA CLOSURE PLAN

DEPT. ENVIRONMENTAL ENGINEERING | DWG NO 739263-01004

FIGURE 3-3
Building 301 PCB Transformer Storage Building
Rinsate Sampling Grid

SCALE | DATE DECEMBER 2002



□ Wipe Sample Collected

■ Wipe Sample Not Collected

Building 301
Proposed Wipe Sampling Grid

PARSONS

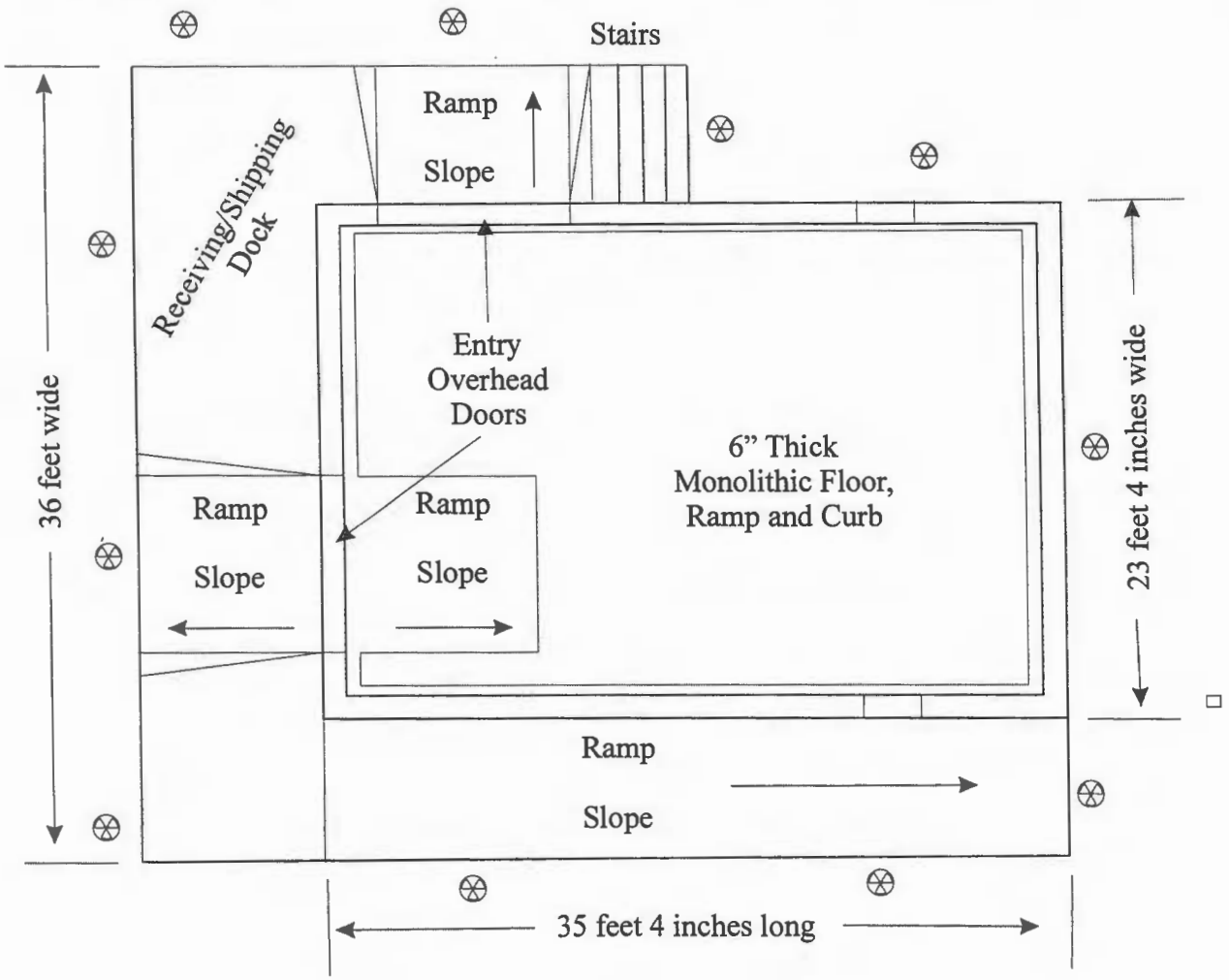
CLIENT/PROJECT TITLE

SENECA ARMY DEPOT ACTIVITY
RCRA CLOSURE PLAN

DEPT.	DWG NO.
ENVIRONMENTAL ENGINEERING	739263-01004

FIGURE 3-4
Building 301 PCB Transformer Storage Building
PCB Wipe Sampling Grid

SCALE	DATE
	DECEMBER 2002



Approximate Location
of Proposed Surface Soil Samples

Building 301
PCB Transformer Storage Building

PARSONS

CLIENT/PROJECT TITLE
SENECA ARMY DEPOT ACTIVITY
RCRA CLOSURE PLAN

DEPT.	DWG NO.
ENVIRONMENTAL ENGINEERING	739263-01004

FIGURE 3-5
Building 301
PCB Transformer Storage Building
Soil Sampling Grid

SCALE	DATE
	DECEMBER 2002

RINSATE SAMPLE COLLECTION PROTOCOL

This procedure is to be used to obtain representative samples for analysis from concrete floors, secondary containment areas and sumps, including surfaces that have been coated, to establish whether or not there is any contamination on the concrete surfaces. This procedure is to be performed after the surfaces have been cleaned and decontaminated, usually pursuant to the approved Closure Plan[1]. This procedure may also be suitable for use on other surfaces on a case-by-case basis.

1. Create an exclusion zone with colored (e.g., yellow) ribbon to keep extraneous personnel from entering area.

2. Sketch the area to be sampled. Sketches should include locations of building columns, walls, fixed equipment, and the proposed rinsate sampling locations themselves (to accurately locate the rinsate sampling points within the buildings) for Department concurrence. The sample locations must be chosen to include any areas of staining, discoloration or other evidence of spills. The sample locations will be approved by a NYSDEC staff person usually onsite on the day of sampling (unless NYSDEC chooses not to be present or states that such approval is not needed). Each sample location should be approximately $2500cm^2$ (say 50cm by 50cm) or $400in^2$ (say 20in by 20 in), but size may be adjusted to the extent necessary to accommodate field conditions with NYSDEC approval.

3. Assemble and clean all equipment necessary for sample collection. Equipment needs to be cleaned, if not already pre-cleaned by the laboratory.

4. Create a temporary containment area on the storage zone floor using an inert, clean or cleaned, flexible boom (e.g., water filled polyethylene tube, nonabsorbent spill containment berm), if necessary. If the floor is relatively level and water will puddle without flowing out of the sample location, a boom may not be not necessary.

5. Label the sample containers with a unique sample code, information on the site, sample locations and the date and time samples were collected. Affix appropriate labels for test parameters on the sample containers. Put on a new pair of disposable nitrile gloves.

6. De-ionized water is to be used for this protocol. The de-ionized water may be provided by the laboratory. For each sampling location, start with two liters or 2 quarts of de-

---

[1] **A detailed washing and rinsing (i.e., decontamination) procedure, as appoved by the Department, will be followed based upon the selected technology. EPA Guidance document, Guide for Decontaminating Buildings, Structures, and Equipment at Superfund Sites, EPA/600/2-85/028, or its most recent update can be used to develop such technology.**

ionized water to allow for the collection of a sufficient sample size for all of parameters to be tested for, as specified by the laboratory, including QC samples. If necessary, additional de-ionized water may be used, but no more than the minimum amount needed to provide a sufficient sample size. Record the temperature of the room and of the de-ionized water. At each sampling location, slowly pour the de-ionized water onto the surface to be sampled. A clean/cleaned wash bottle may be utilized to cover the area uniformly with the de-ionized water. If the individual area is sloped, start pouring at the highest elevation. Record the volume of de-ionized water used for each sample location.

7. Allow de-ionized water to collect and remain in the sample location for 10 minutes.

8. For each sampling location, collect the number and type of samples as specified in the closure plan along with appropriate QA/QC samples. Samples shall be collected using dedicated, sterile glass pipettes provided by the laboratory. The pipettes will be used to transfer the sample fluids into the appropriate bottles provided by the laboratory. Volatile sample bottles shall be filled first to minimize loss of volatiles. Record the volume of water collected for each sample for each sample location.

9. Samples must not be composited.

10. Cap the sample containers and place them in a laboratory cooler with ice to maintain a temperature of 4 °C.

11. Measure the exact wetted area for each sampling location sampled using a tape measure or other suitable device. Place all measurements and the sketch of the area in the site field book. Measurements should include all appropriate or unusual conditions observed while collecting each sample (i.e., drainage patterns followed, stained areas present, condition of storage zone floor, etc.).

12. Remove and discard the gloves. Place all disposable gloves into a plastic bag designated for proper disposal.

13. Enter information on procedures followed including details of samples and sampling in the field book. Photographs of the sample locations, wetted areas, equipment, and actual sampling events may be taken by the facility or Department staff and a list of the photographs shall be recorded in the field book.

14. Fill out chain-of-custody forms. Prepare the samples for storage and shipping in laboratory cooler with sufficient ice to maintain a temperature of 4 °C. Ship overnight to the laboratory for analysis.

15. Follow chain-of custody procedures as detailed in the Quality Assurance Program Plan.

16. Analytical Methods

All of the samples need to be analyzed by a laboratory certified by NYS DOH ELAP for the parameters of interest. The following preparation and analytical methods may be used.

PARAMETER	PREPARATION*	ANALYSIS
TCL Volatiles	Method 5030	Method 8260
TCL Semi-Volatiles	Method 3640	Method 8270
Pesticides	Method 3620	Method 8081
TAL Metals	Method 3010/3015/3020 as appropriate	Method 6010 and 7000 series as appropriate

* Preparation Methods should be used where appropriate, prior to analysis

17. Target Detection Limits and QA/QC

The target detection limits for TCL volatiles and TCL semi-volatiles is 5ug/L. The target detection limits for the metals is as per the table from the NYSDEC ASP.

The quality control results shall be submitted along with the sample results. This QC data shall include surrogate recoveries, MS/MSD percent recoveries, internal standard area counts and retention times (as applicable), and blank results for the organics. For the metals, submit CRDL standard for AA and ICP, spike sample recovery, duplicates, blanks, ICP interference check sample, post digestion spike sample recoveries (if applicable), laboratory control sample results, and ICP serial dilution results. The QC analysis should be performed on site specific samples. The QA/QC requirements of SW-846 shall be met.

18. Clean closure criteria

The sample results for the rinsate samples shall be compared to the New York State Water Quality Standards for Class GA groundwater, 6NYCRR Part 703.5 which are available at www.dec.state.ny.us/website/regs/703.htm.

Appendix B

Wipe Sample Procedure

The following is a step-by-step sampling procedure for collecting wipe samples for polychlorinated biphenyls (PCBs) from non-porous surfaces.

1. Assemble all equipment necessary for wipe sample collection prior to leaving the office. A copy of recommended equipment and supplies is provided in Table A-1.

2. Identify and mark and exclusion zone with yellow ribbon to keep unauthorized personnel from entering the area where the work will be performed.

3. Identify and mark an external limited access zone where sampling equipment can be placed, once it has been used, pending decontamination and recycle. If field decontamination of sampling equipment is a planned event, necessary decontamination reagents and supplies should be placed in this area prior to sample collection. If field decontamination is not planned, used sampling equipment should be placed into a polyethylene bag and a transport container after it is used.

4. Identify and record specific descriptive details for one or more locations that will be used as reference points for positioning all wipe samples. Suitable locations may include lower right hand corner of an entry doorway, the northeastern corner of the enclosure or pad. Photograph each reference point, and record sufficient pertinent information within field sampling documentation that will allow future reviewers to recreate the sampling event.

5. Locate the approximate area of the proposed sampling points using a tape measure and facility map. Mask off an area that is larger than the proposed sampling area (10 centimeters (cm) by 10 cm – 100 cm^2) and annotate the sample site identification on a piece of tape that is placed outside of the area to be sampled. Photograph each sampling location and the overall sampling grid and record details of the site within the field documentation.

6. Don protective gloves and prepare needed 3-inch by 3-inch cotton gauze pads. The gauze pad should only be touched using a decontaminated pair of tweezers or forceps. Do not touch the gauze with bare or gloved hands as dirt and oils from your skin or the surface of the gloves may contaminate the samples. Similarly, do not let the gauze pad touch any surfaces that may be

contaminated. Place the gauze pad in a clean, resealable sample vial. The sample vial should be constructed of inert materials (i.e., Teflon, stainless steel, or glass) and contain no materials (e.g., waxed sealing lids) that could contaminate the sample.

7. Soak each needed 3-inch by 3-inch cotton gauze pads with 15 to 20 milliliters each of a pesticide-grade or better, solvent. The preferred solvent is hexane, but if the wipe sample will be collected from a waxed or non-epoxy based paint, painted surface, either methanol, isopropyl alcohol, or distilled and deionized water should be used as hexane will remove paint and wax. Reseal the sample vial and place in a secure stand or container pending use.

8. Assemble all equipment (e.g., field log, sealed sample vial containing soaked gauze pad, forceps, decontaminated sampling template, adhesive or duct tape, sample labels, pens, sample container, trash bag, storage container for contaminated sampling equipment) needed for the collection of a wipe sample at one location and move it to the first sampling location.

9. Don a new pair of disposable gloves. Use a respirator equipped with an organic vapor cartridge if the sample collection and preparation will be completed in an area that is not well ventilated.

10. Inspect the area to be wiped and select a location where the wipe template will be placed. Place and tape an inert, decontaminated, wipe template over the selected sampling site. The tape must be kept exterior to the surface that will be wiped. Adhesive from the tape should not contact the surface within the wiping area as it may contaminate the sample. Do not touch the surface to be wiped with gloved hands. Tape and gloving materials can be a significant source of organic compounds such as phthalates which will contaminate the samples.

11. Open the sealed sample vial containing the pre-soaked gauze pad, and remove the pad using a decontaminated pair of forceps. All subsequent wiping motions should be done in a manner that ensures that all chemical materials recovered from the surface are concentrated on one side of the gauze.

12. Collect the sample by applying uniform pressure to the wipe pad as it is drawn with straight, even strokes, over the area to be wiped. Successive strokes used should overlap slightly to ensure that the entire are is wiped. The first sequence of strokes should conducted from left to right, moving from the top of the sampling square to the bottom of the sampling square.

13. Once the first sequence of wiping repetitions is completed, the entire square must be wiped a second time with the same pad in a direction that is perpendicular to the first wiping pattern.

Therefore, start at the upper left hand corner of the sampling square and wipe moving towards the right. Start each subsequent pass at the left side of the sampling template at a location below but overlapping the previous pass and move successively to the right and down until the entire square is wiped a second time.

14. Let the gauze air dry.

15. Fold the dry gauze so the sampling side is inwards and place it in the pre-cleaned sample vial using the forceps. Again, gloved hands and tape should not be allowed to contact the gauze as they will contaminate the sample.

16. Inspect the area just wiped. If the surface still appears to contain residue, use additional pre-soaked gauze pads to complete additional repetitions of steps 11 through 15, above. Each selected surface must be wiped until no residue is observed to remain at the site. Each successive gauze pad should be used for only one vertical and horizontal wiping sequence as is described above. Place all additional gauze pads used at one sampling location in the same initial sampling vial.

17. Cap the sample vial containing the used gauze pads.

18. Label the sample vial with a unique sample code, information on the sampling site, the date/time of collection and the personnel responsible for the sample collection.

19. Affix a yellow TSCA PCB mark on the sample vial and place the sample vial in an ice chest that is packed with ice. A sample temperature of $4°C \pm 2°C$ must be achieved and maintained during storage.

20. Remove the template and the tape from the surface and remove all tape. Place tape in a trash bag that will subsequently be designated for disposal as PCB-contaminated materials. Place all used sampling equipment in a container that will be used to transport it to the point of decontamination.

21. Remove and discard gloves in the trash bag.

22. Label the sample vial and document the sample collection process in the field book.

23. Decontaminate all sampling equipment before reuse at another site. All sampling equipment

should be decontaminated using pesticide grade hexane. Let equipment air dry and wrap securely in clean aluminum foil pending use at another site.

24. Complete chain-of-custody forms and pack samples for shipment to the laboratory. The samples should be pack on ice and maintained at 4°C ± 2°C until delivered to the laboratory.

Quality Assurance and Quality Control Samples

Field/Ambient Blank – Prepare gauze with solvent as described in procedure above, but do not use to wipe a surface. Allow to air dry, fold, and place in sample vial. Label, record collection details in field book and enter on chain of custody. Ship to laboratory for analysis.

Duplicate – Wipe two adjacent areas at the same sampling location following procedures defined above. Separate equipment must be used. The sample and duplicate pair should be collected from areas that appear to be identical. During sample collection operations, ensure that the sampling activities completed for the first sample do not contaminate the area designated for the collection of the duplicate. Ensure that tape and discarded materials do not impact the adjacent sites.

Trip Blank – To be collected for all media. Trip blank to be supplied by the analytical laboratory and be shipped to and returned to the laboratory with the sampling equipment.

One sample duplicate and a field blank must be collected for each lot of eighteen (18) field samples or less. A trip blank should accompany each shipment of field samples sent to the laboratory. All sampling equipment and samples should be stored and packaged in an equivalent manner during their time in the field.

Estimate Closure Cost
Remove, Dispose all Hazardous
Waste;Decon with Soap,Water;
Rinse 3x; sample water; sample
soil - Contingency PCB Decon

Designed By: Parsons
Estimated By: Parsons

Prepared By: Parsons

Preparation Date: 12/20/02
Effective Date of Pricing: 10/03/96
Est Construction Time: 90 Days

Sales Tax: 7.0%

SUMMARY REPORTS SUMMARY PAGE

DETAILED ESTIMATE DETAIL PAGE

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 5.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

Prepared by JWA on 10/23/02

Estimated Closure Costs for Building 307, the Hazardous Waste Container Storage Facility. Inventory Depot for residual Hazardous Waste. Move all found Hazardous waste to Building 307. Coordinate Hazardous Waste Removal with licensed hauler and TSDF.

Sweep Building Clean. Wash with High pressure Soap and Water, Rinse three times with water. Collect all liquids and dispose of offsite as hazardous waste. Total of 9 drums, 2 from each wash and rinse cycle plus one for dust and Tyvek.

Collect 11 soil samples plus QA/QC samples and document that soil clean. 15 samples total.

Collect 3 water samples, 1 after each rinse volume and document that water clean. 5 samples total

All samples analyzed for TCL VOCs, SVOCs, PCBs and Pests and TAL Metals and Cyanide.

Collect 17 rinsate samples plus QA/QC samples and document that rinsate is clean. 21 total samples for TCL VOAs, SVOCs, and metals

Collect 40 wipe samples, plus QA/QC and document that rinsate is clean. 52 total samples for PCBs.

Contingency includes second decon using more agressive techniques (kerosene, terpene hydrocabon, etc.) and complete second round of sampling and analysis. Validate Data and Prepare Closure Certificate.

Procure Vendor Services.

PRODUCTIVITY

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required,

productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

Contractor costs are calculated as a percentage of running total as

5 % for field office support
15 % for home office support
10 % for profit
4 % for bond

OTHER GOVERNMENT COSTS:

Other Costs consist of:

Engineering and Design During Construction (EDC)	1.5%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%

Laboratory Quality Assurance	1.0%
Total, use	3.5%

Unit Charges.

33.10. Dispose Haz Waste Inventory			QUANTY	U0M	MANH0UR	LAB0R	EQUIPMNT	MATERIAL	SUBC0NTR	T0TAL C0ST	UNIT C0ST
33. Building 307, Haz Waste Storage											
33.10. Dispose Haz Waste Inventory											
	AFH PA <13278 8311 >	HTRW, dispose haz waste, minimum charge, mileage charge, van trailer	2.00	EA	0	0	0	0	1,367	1,367	683.33
	AFH PA <02083 7301 >	Shipping HW, subcontracted, transport 80 55gal drums of solids	800.00	MI	0	0	0	0	1,200	1,200	1.50
	HTW PA <13277 2633 >	HTRW, incin, coml, initial stream evaluation	6.00	EA	0	0	0	0	9,000	9,000	1500.00
	HTW PA <13277 2632 >	HTRW, incin, coml, minimum charges for shipment	2.00	EA	0	0	0	0	4,400	4,400	2200.00
	HTW PA <13277 2616 >	HTRW, incin, coml, liquid, amenable to bulking,55gal drum	33.00	EA	0	0	0	0	16,500	16,500	500.00
	HTW PA <13278 1112 >	HTRW, dispose drummed haz waste, solid, 55 gal drum	33.00	EA	0	0	0	0	2,948	2,948	89.33
	AFH PA <13278 8311 >	HTRW, dispose haz waste, minimum charge, mileage charge, van trailer	2.00	EA	0	0	0	0	1,367	1,367	683.33
	AFH PA <13278 8314 >	HTRW, dispose haz waste, 400-499 miles, mileage charge, van trailer	800.00	MI	0	0	0	0	1,688	1,688	2.11
	AFH PA <13278 5103 >	HTRW, dispose haz waste, drums, disposal taxes & fees, state	120.00	EA	0	0	0	0	3,084	3,084	25.70
	AFH PA <13278 7112 >	HTRW, dispose haz waste, transport demurrage, van trailer	20.00	HR	0	0	0	0	1,250	1,250	62.50
	HTW PA <13277 2611 >	HTRW, incin,55gal drum, coml, solid,energetic,amenable to bulking	25.00	EA	0	0	0	0	19,375	19,375	775.00
	HTW PA <13277 2627 >	HTRW, incin, waste w/>5% halogen by wt, 55 gal, coml, extra charge	29.00	EA	0	0	0	0	194	194	6.68
	HTW PA <13277 2618 >	HTRW, incin, coml, liquid, reactive or corrosive,55gal drums	3.00	EA	0	0	0	0	1,965	1,965	655.00
	HTW PA <13277 2715 >	HTRW, incin, 55 gal drum, PCB destruction drummed waste, transformer	15.00	EA	0	0	0	0	7,800	7,800	520.00
	USR PA <DRILL 05 >	Move Drums when full, 100 feet to central storage location	120.00	EA	0	0	0	0	3,000	3,000	25.00
33.15. Decontamination											
	RAD PA <02084 2114 >	Decontamination, manual washing, powder, 50# carton	1.00	EA	0	0	0	155	0	155	155.45
	HTW PA <02083 5214 >	HW packaging, D0T steel drums, 55 gal, 17H, closed only	9.00	EA	0	0	0	496	0	496	55.16
	USR PA <DRILL 03 >	Decon Equipment including cost of renting decon equipment	20.00	HR	0	0	0	0	3,000	3,000	150.00
	USR PA <DRILL 02 >	Construct Temporary Decon Pad	1.00	EA	0	0	0	0	150	150	150.00
	USR PA <DRILL 03 >	Provide Empty Drums	9.00	EA	0	0	0	0	450	450	50.00

33.15. Decontamination			QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
	RAD PA <02084 2142 >	Decontamination, manual washing, spot washing, large crew	11400	SF	331	6,379	0	0	0	6,379	0.56
33.17. Decontamination	Waste Disposal										
	USR PA <DRILL 05 >	Move Drums when full, 100 feet to central storage location	9.00	EA	0	0	0	0	225	225	25.00
	HTW PA <13277 2713 >	HTRW, incin, contaminated soil, PCB destruction drummed waste	100.00	LB	0	0	0	0	165	165	1.65
	AFH PA <13278 5103 >	HTRW, dispose haz waste, drums, disposal taxes & fees, state	9.00	EA	0	0	0	0	231	231	25.70
	HTW PA <13277 2623 >	HTRW, incin, coml, lean water, non-PCB,55gal drum	8.00	EA	0	0	0	0	4,000	4,000	500.00
	AFH PA <13278 8311 >	HTRW, dispose haz waste, minimum charge, mileage charge, van trailer	1.00	EA	0	0	0	0	683	683	683.33
	AFH PA <02083 7301 >	Shipping HW, subcontracted, transport 80 55gal drums of solids	400.00	MI	0	0	0	0	600	600	1.50
	HTW PA <13277 2633 >	HTRW, incin, coml, initial stream evaluation	1.00	EA	0	0	0	0	1,500	1,500	1500.00
33.20. Sample Collection and Analysis											
	HTW PA <01954 6112 >	Testing, misc sample collection (shallow), daily rate, subcontracted	5.00	EA	0	0	0	0	3,167	3,167	633.33
	AFH PA <01954 6121 >	Testing, misc sample collection (shallow), van or pickup rental	5.00	DAY	0	0	0	161	0	161	32.10
	AFH PA <01954 6132 >	Testing, misc sample collection (shallow), pickup mileage charge	500.00	MI	0	0	0	428	0	428	0.86
	HTW PA <01954 6144 >	Field samples, sample collection, pumpable liquids	4.00	EA	2	63	0	0	0	63	15.72
	HTW PA <01954 6145 >	Field samples, sample collection, contaminated soils	15.00	EA	8	253	157	0	0	410	27.32
	HTW PA <01954 7217 >	Testing, LAS, sp org contam, semi-volatile organics (625, 8270)	40.00	EA	0	0	0	0	8,933	8,933	223.33
	HTW PA <01954 7241 >	Testing, LAS, sp org contam, metals	40.00	EA	0	0	0	0	640	640	16.00
	AFH PA <01954 7277 >	Testing, LAS, sp org contam, pesticides/PCB (SW3510/SW8080)	72.00	EA	0	0	0	0	14,880	14,880	206.67
	HTW PA <01954 7215 >	Testing, LAS, sp org contam, purgeable organics (624, 8260)	40.00	EA	0	0	0	0	5,500	5,500	137.50
	HTW PA <01954 2123 >	Testing, surf water, coliwasas, PVC, 1.9" OD x 49", 760 ml	30.00	EA	0	0	0	4,851	0	4,851	161.71
33.22. Closure Certification											
	HTW PA <01956 1111 >	Reporting	80.00	HR	0	0	0	0	6,000	6,000	75.00
	HTW PA <01956 1113 >	Submittals, tech plans,defines where samples are taken, soil sampling	40.00	HR	0	0	0	0	3,000	3,000	75.00

			QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33.22. Closure Certification											
	HTW PA <01956 1114 >	Submittals, tech plans, defines quality steps, chem data acquisition	40.00	HR	0	0	0	0	3,400	3,400	85.00
33.25. Project Management / Procurement											
	USR AC <01956 1115 >	Proj. Management, Procurement, Construction Oversight	40.00	HR	0	0	0	0	0	0	0.00
	HTW PA <01956 1115 >	Submittals, tech plans,requires indl hygenist, site safety & health	2.00	HR	0	0	0	0	200	200	100.00
	HTW PA <01956 1112 >	Submittals, Tech rep, Sampling Plan install	16.00	HR	0	0	0	0	1,200	1,200	75.00
	HTW PA <01956 1115 >	Project Management/Procure health	16.00	HR	0	0	0	0	1,600	1,600	100.00
	HTW PA <01956 1115 >	Site Health & Safety Plan health	4.00	HR	0	0	0	0	400	400	100.00
33.36. PCB Decontamination											
	HTW PA <13274 2714 >	HTRW, PCB spill remediation cleanup,<100 microgram/100 cm2,1 appl	6000.00	SF	40	1,510	0	2,440	0	3,949	0.66
	HTW PA <13274 2718 >	HTRW,PCB trtmt,55 gal drum,surf trtmt liq for migrat/leach of contam	22.00	EA	0	0	0	29,484	0	29,484	1340.18
	HTW PA <13277 2712 >	HTRW, incin, clothing, rags, etc, PCB destruction drummed waste,debris	700.00	LB	0	0	0	0	1,274	1,274	1.82
	HTW PA <13277 2729 >	HTRW,incin,not crushed,55 gal, PCB destr drummed waste,empty drums	22.00	EA	0	0	0	0	1,685	1,685	76.60
	AFH PA <13277 2733 >	HTRW,incin,PCB destruction drummed waste, lean water 55 gal	15.00	EA	0	0	0	0	6,373	6,373	424.88
	HTW PA <13277 2731 >	HTRW,incin,init waste stream evaluation,PCB destruction drummed waste	2.00	EA	0	0	0	0	1,606	1,606	802.82
	HTW PA <13277 2721 >	HTRW,incin,55 gal drum,PCB destruction drummed waste,liq >100000 ppm	22.00	EA	0	0	0	0	11,173	11,173	507.88
	USR PA <DRILL 05 >	Move Drums when full, 100 feet to central storage location	22.00	EA	0	0	0	0	550	550	25.00
	AFH PA <13278 5103 >	HTRW, dispose haz waste, drums, disposal taxes & fees, state	24.00	EA	0	0	0	0	617	617	25.70
	AFH PA <13278 8311 >	HTRW, dispose haz waste, minimum charge, mileage charge, van trailer	2.00	EA	0	0	0	0	1,367	1,367	683.33
	AFH PA <02083 7301 >	Shipping HW, subcontracted, transport 80 55gal drums of solids	400.00	MI	0	0	0	0	600	600	1.50
	HTW PA <13277 2633 >	HTRW, incin, coml, initial stream evaluation	3.00	EA	0	0	0	0	4,500	4,500	1500.00

33.36. PCB Decontamination			QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
USR PA <DRILL 03 >	Provide Empty Drums		24.00	EA	0	0	0	0	1,200	1,200	50.00
RAD PA <02084 2142 >	Decontamination, manual washing, spot washing, large crew		6000.00	SF	174	3,358	0	0	0	3,358	0.56
33.40. Post PCB Decontamination Samplin											
HTW PA <01954 6112 >	Testing, misc sample collection (shallow), daily rate, subcontracted		4.00	EA	0	0	0	0	2,533	2,533	633.33
AFH PA <01954 6121 >	Testing, misc sample collection (shallow), van or pickup rental		4.00	DAY	0	0	0	128	0	128	32.10
AFH PA <01954 6132 >	Testing, misc sample collection (shallow), pickup mileage charge		400.00	MI	0	0	0	342	0	342	0.86
HTW PA <01954 6144 >	Field samples, sample collection, pumpable liquids		24.00	EA	12	377	0	0	0	377	15.72
HTW PA <01954 6145 >	Field samples, sample collection, contaminated soils		15.00	EA	8	253	157	0	0	410	27.32
HTW PA <01954 7217 >	Testing, LAS, sp org contam, semi-volatile organics (625, 8270)		45.00	EA	0	0	0	0	10,050	10,050	223.33
HTW PA <01954 7241 >	Testing, LAS, sp org contam, metals		45.00	EA	0	0	0	0	720	720	16.00
AFH PA <01954 7277 >	Testing, LAS, sp org contam, pesticides/PCB (SW3510/SW8080)		72.00	EA	0	0	0	0	14,880	14,880	206.67
HTW PA <01954 7215 >	Testing, LAS, sp org contam, purgeable organics (624, 8260)		45.00	EA	0	0	0	0	6,188	6,188	137.50
HTW PA <01954 2123 >	Testing, surf water, coliwasas, PVC, 1.9" OD x 49", 760 ml		24.00	EA	0	0	0	3,881	0	3,881	161.71
33.42. PCB Closure Certification											
HTW PA <01956 1111 >	Reporting		80.00	HR	0	0	0	0	6,000	6,000	75.00
HTW PA <01956 1113 >	Submittals, tech plans,defines where samples are taken, soil sampling		40.00	HR	0	0	0	0	3,000	3,000	75.00
HTW PA <01956 1114 >	Submittals, tech plans, defines quality steps, chem data acquisition		40.00	HR	0	0	0	0	3,400	3,400	85.00
33.45. PCB Project Management											
USR AC <01956 1115 >	Proj. Management, Procurement, Construction Oversight		40.00	HR	0	0	0	0	0	0	0.00
HTW PA <01956 1115 >	Submittals, tech plans,requires indl hygenist, site safety & health		8.00	HR	0	0	0	0	800	800	100.00
HTW PA <01956 1112 >	Submittals, Tech rep, Sampling Plan install		40.00	HR	0	0	0	0	3,000	3,000	75.00
HTW PA <01956 1115 >	Project Management/Procure health		40.00	HR	0	0	0	0	4,000	4,000	100.00

33.45. PCB Project Management		QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
HTW PA <01956 1115 >	Site Health & Safety Plan health	40.00	HR	0	0	0	0	4,000	4,000	100.00
TOTAL Estimate Closure Cost				574	12,192	314	42,367	224,577	279,451	

		QUANTY	UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
33	Building 307, Haz Waste Storage	1.00	EA	279,450	13,970	44,010	33,740	14,850	386,030	386027.65

		QUANTY	UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
33	Building 307, Haz Waste Storage									
33.10	Dispose Haz Waste Inventory	1.00	EA	75,140	3,760	11,830	9,070	3,990	103,790	103792.65
33.15	Decontamination	1.00	EA	10,630	530	1,670	1,280	560	14,690	14685.89
33.17	Decontamination Waste Disposal	1.00	EA	7,400	370	1,170	890	390	10,230	10228.61
33.20	Sample Collection and Analysis	1.00	EA	39,030	1,950	6,150	4,710	2,070	53,920	53918.82
33.22	Closure Certification	1.00	EA	12,400	620	1,950	1,500	660	17,130	17129.11
33.25	Project Management / Procurement	1.00	EA	3,400	170	540	410	180	4,700	4696.69
33.36	PCB Decontamination	1.00	EA	67,740	3,390	10,670	8,180	3,600	93,570	93568.48
33.40	Post PCB Decontamination Samplin	1.00	EA	39,510	1,980	6,220	4,770	2,100	54,580	54578.00
33.42	PCB Closure Certification	1.00	EA	12,400	620	1,950	1,500	660	17,130	17129.11
33.45	PCB Project Management	1.00	EA	11,800	590	1,860	1,420	630	16,300	16300.28
TOTAL	Building 307, Haz Waste Storage	1.00	EA	279,450	13,970	44,010	33,740	14,850	386,030	386027.65

No errors detected...

* * * END OF ERROR REPORT * * *

Estimate Closure Cost
Remove, Dispose PCB Hazardous
Waste;Decon with Soap,Water;
Rinse 3x; sample water; sample
soil

Designed By: Parsons
Estimated By: Parsons

Prepared By: Parsons

Preparation Date: 10/10/02
Effective Date of Pricing: 10/03/96
Est Construction Time: 90 Days

Sales Tax: 7.0%

No Backup Reports...

* * * END TABLE OF CONTENTS * * *

PROJECT BREAKDOWN:

The estimate is structured as follows and uses a 2 digit number at each level. The 2 digit numbers for the first 3 title levels are taken from the HTRW Remedial Action Work Breakdown Structure. The 2 digit numbers for the remaining title levels are user defined. The detail items are at LEVEL 6.

LEVEL 1 - WBS Level 1 (Account)
LEVEL 2 - WBS Level 2 (System)
LEVEL 3 - WBS Level 3 (Subsystem)
LEVEL 4 - User Defined (Assembly Category or Other)
LEVEL 5 - User Defined (Assembly or Other)

PROJECT DESCRIPTION:

Prepared by JWA on 10/23/02

Estimated Closure Costs for Building 301, the PCB Transformer Storage Building Inventory Depot for residual Hazardous Waste. Coordinate Hazardous Waste Removal with licensed hauler and TSDF.

Sweep Building Clean. Wash with High pressure Soap and Water, Rinse three times with water. Collect all liquids and dispose of offsite as hazardous waste. Total of 9 drums, 2 from each wash and rinse cycle plus one for dust and Tyvek.

Collect 11 soil samples plus QA/QC samples and document that soil clean. 15 samples total.

Collect 3 water samples, 1 after each rinse volume and document that water clean. 5 samples total

All samples analyzed for TCL VOCs, SVOCs, PCBs and Pests and TAL Metals and Cyanide.

Validate Data and Prepare Closure Certificate.

Procure Vendor Services.

PRODUCTIVITY

Productivity, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection A - Productivity ___%
2. Level of Protection B - Productivity ___%
3. Level of Protection C - Productivity ___%
4. Level of Protection D - Productivity 85%.

All activities are conducted in Level of Protection D.

The following daily time breakdown was assumed.

	Level A	Level B	Level C	Level D
Availiable Time (minutes)	480	480	480	480
Non-Productive Time (minutes):				
Safety meetings	20	20	10	10
Suit-up/off	60	60	40	10
Air tank change	160	20	0	0
*Breaks	60	60	40	30
Cleanup/decontamination	20	20	20	20
Productive Time (minutes)	160	300	370	410
Productivity:	160/480 X100%	300/480 X100%	370/480 X100%	410/480 X100%
	33%	63%	77%	85%
Example:				
Normal Production Rate (CY/HR)	250	250	250	250
X Productivity	.33	.63	.77	.85
=Reduced Production Rate(CY/HR)	83	158	193	213
* Break time ranges (minutes)	60-140	60-140	40-140	30-70

Contractor costs are calculated as a percentage of running total as

5 % for field office support
15 % for home office support
10 % for profit
4 % for bond

OTHER GOVERNMENT COSTS:

Other Costs consist of:

Engineering and Design During Construction (EDC)	1.5%
As-Builts	0.5%
Operation and Maintenance (O&M) Manuals	0.5%
Laboratory Quality Assurance	1.0%
Total, use	3.5%

Unit Charges.

33.10. Dispose Haz Waste Inventory			QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
33. Building 301, PCB Transformer											
33.10. Dispose Haz Waste Inventory											
	AFH PA <13278 8311 >	HTRW, dispose haz waste, minimum charge, mileage charge, van trailer	1.00	EA	0	0	0	0	683	683	683.33
	AFH PA <02083 7301 >	Shipping HW, subcontracted, transport 80 55gal drums of solids	400.00	MI	0	0	0	0	600	600	1.50
	HTW PA <13277 2633 >	HTRW, incin, coml, initial stream evaluation	3.00	EA	0	0	0	0	4,500	4,500	1500.00
	HTW PA <13277 2632 >	HTRW, incin, coml, minimum charges for shipment	1.00	EA	0	0	0	0	2,200	2,200	2200.00
	AFH PA <13278 8311 >	HTRW, dispose haz waste, minimum charge, mileage charge, van trailer	1.00	EA	0	0	0	0	683	683	683.33
	AFH PA <13278 8314 >	HTRW, dispose haz waste, 400-499 miles, mileage charge, van trailer	400.00	MI	0	0	0	0	844	844	2.11
	AFH PA <13278 5103 >	HTRW, dispose haz waste, drums, disposal taxes & fees, state	120.00	EA	0	0	0	0	3,084	3,084	25.70
	AFH PA <13278 7112 >	HTRW, dispose haz waste, transport demurrage, van trailer	10.00	HR	0	0	0	0	625	625	62.50
	HTW PA <13277 2627 >	HTRW, incin, waste w/>5% halogen by wt, 55 gal, coml, extra charge	60.00	EA	0	0	0	0	401	401	6.68
	HTW PA <13277 2715 >	HTRW, incin, 55 gal drum, PCB destruction drummed waste, transformer	60.00	EA	0	0	0	0	31,200	31,200	520.00
	USR PA <DRILL 05 >	Move Drums when full, 100 feet to central storage location	60.00	EA	0	0	0	0	1,500	1,500	25.00
33.15. Decontamination											
	RAD PA <02084 2114 >	Decontamination, manual washing, powder, 50# carton	1.00	EA	0	0	0	155	0	155	155.45
	HTW PA <02083 5214 >	HW packaging, DOT steel drums, 55 gal, 17H, closed only	9.00	EA	0	0	0	496	0	496	55.16
	USR PA <DRILL 03 >	Decon Equipment including cost of renting decon equipment	20.00	HR	0	0	0	0	3,000	3,000	150.00
	USR PA <DRILL 02 >	Construct Temporary Decon Pad	1.00	EA	0	0	0	0	150	150	150.00
	USR PA <DRILL 03 >	Provide Empty Drums	9.00	EA	0	0	0	0	450	450	50.00
	RAD PA <02084 2142 >	Decontamination, manual washing, spot washing, large crew	6000.00	SF	174	3,358	0	0	0	3,358	0.56
33.17. Decontamination Waste Disposal											
	USR PA <DRILL 05 >	Move Drums when full, 100 feet to central storage location	9.00	EA	0	0	0	0	225	225	25.00
	HTW PA <13277 2713 >	HTRW, incin, contaminated soil, PCB destruction drummed waste	100.00	LB	0	0	0	0	165	165	1.65
	AFH PA <13278 5103 >	HTRW, dispose haz waste, drums, disposal taxes & fees, state	9.00	EA	0	0	0	0	231	231	25.70

33.17. Decontamination Waste Disposal		QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
HTW PA <13277 2623 >	HTRW, incin, coml, lean water, non-PCB,55gal drum	8.00	EA	0	0	0	0	4,000	4,000	500.00
AFH PA <13278 8311 >	HTRW, dispose haz waste, minimum charge, mileage charge, van trailer	1.00	EA	0	0	0	0	683	683	683.33
AFH PA <02083 7301 >	Shipping HW, subcontracted, transport 80 55gal drums of solids	400.00	MI	0	0	0	0	600	600	1.50
HTW PA <13277 2633 >	HTRW, incin, coml, initial stream evaluation	1.00	EA	0	0	0	0	1,500	1,500	1500.00
33.20. Sample Collection and Analysis										
HTW PA <01954 6112 >	Testing, misc sample collection (shallow), daily rate, subcontracted	4.00	EA	0	0	0	0	2,533	2,533	633.33
AFH PA <01954 6121 >	Testing, misc sample collection (shallow), van or pickup rental	4.00	DAY	0	0	0	128	0	128	32.10
AFH PA <01954 6132 >	Testing, misc sample collection (shallow), pickup mileage charge	400.00	MI	0	0	0	342	0	342	0.86
HTW PA <01954 6144 >	Field samples, sample collection, pumpable liquids	24.00	EA	12	377	0	0	0	377	15.72
HTW PA <01954 6145 >	Field samples, sample collection, contaminated soils	15.00	EA	8	253	157	0	0	410	27.32
HTW PA <01954 7217 >	Testing, LAS, sp org contam, semi-volatile organics (625, 8270)	45.00	EA	0	0	0	0	10,050	10,050	223.33
HTW PA <01954 7241 >	Testing, LAS, sp org contam, metals	45.00	EA	0	0	0	0	720	720	16.00
AFH PA <01954 7277 >	Testing, LAS, sp org contam, pesticides/PCB (SW3510/SW8080)	45.00	EA	0	0	0	0	9,300	9,300	206.67
HTW PA <01954 7215 >	Testing, LAS, sp org contam, purgeable organics (624, 8260)	45.00	EA	0	0	0	0	6,188	6,188	137.50
HTW PA <01954 2123 >	Testing, surf water, coliwasas, PVC, 1.9" OD x 49", 760 ml	24.00	EA	0	0	0	3,881	0	3,881	161.71
33.22. Closure Certification										
HTW PA <01956 1111 >	Reporting	80.00	HR	0	0	0	0	6,000	6,000	75.00
HTW PA <01956 1113 >	Submittals, tech plans,defines where samples are taken, soil sampling	40.00	HR	0	0	0	0	3,000	3,000	75.00
HTW PA <01956 1114 >	Submittals, tech plans, defines quality steps, chem data acquisition	40.00	HR	0	0	0	0	3,400	3,400	85.00
33.25. Basic Project Management/Procure										
USR AC <01956 1115 >	Proj. Management, Procurement, Construction Oversight	40.00	HR	0	0	0	0	0	0	0.00
HTW PA <01956 1115 >	Submittals, tech plans,requires indl hygenist, site safety & health	2.00	HR	0	0	0	0	200	200	100.00

33.25. Basic Project Management/Procure			QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
	HTW PA <01956 1112 >	Submittals, Tech rep, Sampling Plan install	16.00	HR	0	0	0	0	1,200	1,200	75.00
	HTW PA <01956 1115 >	Project Management/Procure health	16.00	HR	0	0	0	0	1,600	1,600	100.00
	HTW PA <01956 1115 >	Site Health & Safety Plan health	4.00	HR	0	0	0	0	400	400	100.00
33.36. PCB Decontamination											
	HTW PA <13274 2714 >	HTRW, PCB spill remediation cleanup,<100 microgram/100 cm2,1 appl	4500.00	SF	30	1,132	0	1,830	0	2,962	0.66
	HTW PA <13274 2718 >	HTRW,PCB trtmt,55 gal drum,surf trtmt liq for migrat/leach of contam	15.00	EA	0	0	0	20,103	0	20,103	1340.18
	HTW PA <13277 2712 >	HTRW, incin, clothing, rags, etc, PCB destruction drummed waste,debris	500.00	LB	0	0	0	0	910	910	1.82
	HTW PA <13277 2729 >	HTRW,incin,not crushed,55 gal, PCB destr drummed waste,empty drums	15.00	EA	0	0	0	0	1,149	1,149	76.60
	AFH PA <13277 2733 >	HTRW,incin,PCB destruction drummed waste, lean water 55 gal	10.00	EA	0	0	0	0	4,249	4,249	424.88
	HTW PA <13277 2731 >	HTRW,incin,init waste stream evaluation,PCB destruction drummed waste	2.00	EA	0	0	0	0	1,606	1,606	802.82
	HTW PA <13277 2721 >	HTRW,incin,55 gal drum,PCB destruction drummed waste,liq >100000 ppm	15.00	EA	0	0	0	0	7,618	7,618	507.88
	USR PA <DRILL 05 >	Move Drums when full, 100 feet to central storage location	9.00	EA	0	0	0	0	225	225	25.00
	AFH PA <13278 5103 >	HTRW, dispose haz waste, drums, disposal taxes & fees, state	24.00	EA	0	0	0	0	617	617	25.70
	AFH PA <13278 8311 >	HTRW, dispose haz waste, minimum charge, mileage charge, van trailer	2.00	EA	0	0	0	0	1,367	1,367	683.33
	AFH PA <02083 7301 >	Shipping HW, subcontracted, transport 80 55gal drums of solids	400.00	MI	0	0	0	0	600	600	1.50
	HTW PA <13277 2633 >	HTRW, incin, coml, initial stream evaluation	3.00	EA	0	0	0	0	4,500	4,500	1500.00
	USR PA <DRILL 03 >	Provide Empty Drums	24.00	EA	0	0	0	0	1,200	1,200	50.00
	RAD PA <02084 2142 >	Decontamination, manual washing, spot washing, large crew	3000.00	SF	87	1,679	0	0	0	1,679	0.56
33.40. Post PCB Decontamination Samplin											
	HTW PA <01954 6112 >	Testing, misc sample collection (shallow), daily rate, subcontracted	4.00	EA	0	0	0	0	2,533	2,533	633.33
	AFH PA <01954 6121 >	Testing, misc sample collection (shallow), van or pickup rental	4.00	DAY	0	0	0	128	0	128	32.10

33.40. Post PCB Decontamination Samplin		QUANTY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	SUBCONTR	TOTAL COST	UNIT COST
AFH PA <01954 6132 >	Testing, misc sample collection (shallow), pickup mileage charge	400.00	MI	0	0	0	342	0	342	0.86
HTW PA <01954 6144 >	Field samples, sample collection, pumpable liquids	24.00	EA	12	377	0	0	0	377	15.72
HTW PA <01954 6145 >	Field samples, sample collection, contaminated soils	15.00	EA	8	253	157	0	0	410	27.32
HTW PA <01954 7217 >	Testing, LAS, sp org contam, semi-volatile organics (625, 8270)	45.00	EA	0	0	0	0	10,050	10,050	223.33
HTW PA <01954 7241 >	Testing, LAS, sp org contam, metals	45.00	EA	0	0	0	0	720	720	16.00
AFH PA <01954 7277 >	Testing, LAS, sp org contam, pesticides/PCB (SW3510/SW8080)	45.00	EA	0	0	0	0	9,300	9,300	206.67
HTW PA <01954 7215 >	Testing, LAS, sp org contam, purgeable organics (624, 8260)	45.00	EA	0	0	0	0	6,188	6,188	137.50
HTW PA <01954 2123 >	Testing, surf water, coliwasas, PVC, 1.9" OD x 49", 760 ml	24.00	EA	0	0	0	3,881	0	3,881	161.71
33.42. PCB Closure Certification										
HTW PA <01956 1111 >	Reporting	80.00	HR	0	0	0	0	6,000	6,000	75.00
HTW PA <01956 1113 >	Submittals, tech plans,defines where samples are taken, soil sampling	40.00	HR	0	0	0	0	3,000	3,000	75.00
HTW PA <01956 1114 >	Submittals, tech plans, defines quality steps, chem data acquisition	40.00	HR	0	0	0	0	3,400	3,400	85.00
33.45. PCB Project Management										
USR AC <01956 1115 >	Proj. Management, Procurement, Construction Oversight	40.00	HR	0	0	0	0	0	0	0.00
HTW PA <01956 1115 >	Submittals, tech plans,requires indl hygenist, site safety & health	8.00	HR	0	0	0	0	800	800	100.00
HTW PA <01956 1112 >	Submittals, Tech rep, Sampling Plan install	40.00	HR	0	0	0	0	3,000	3,000	75.00
HTW PA <01956 1115 >	Project Management/Procure health	40.00	HR	0	0	0	0	4,000	4,000	100.00
HTW PA <01956 1115 >	Site Health & Safety Plan health	40.00	HR	0	0	0	0	4,000	4,000	100.00
	TOTAL Estimate Closure Cost			330	7,428	314	31,288	178,947	217,977	

		QUANTY UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
33	Building 301, PCB Transformer	1.00 EA	217,980	10,900	34,330	26,320	11,580	301,110	301109.54

		QUANTY	UOM	DIRECT	FIELD OH	HOME OFC	PROFIT	BOND	TOTAL COST	UNIT COST
33	Building 301, PCB Transformer									
33.10	Dispose Haz Waste Inventory	1.00	EA	46,320	2,320	7,300	5,590	2,460	63,990	63986.16
33.15	Decontamination	1.00	EA	7,610	380	1,200	920	400	10,510	10511.58
33.17	Decontamination Waste Disposal	1.00	EA	7,400	370	1,170	890	390	10,230	10228.61
33.20	Sample Collection and Analysis	1.00	EA	33,930	1,700	5,340	4,100	1,800	46,870	46869.77
33.22	Closure Certification	1.00	EA	12,400	620	1,950	1,500	660	17,130	17129.11
33.25	Basic Project Management/Procure	1.00	EA	3,400	170	540	410	180	4,700	4696.69
33.36	PCB Decontamination	1.00	EA	48,780	2,440	7,680	5,890	2,590	67,390	67388.45
33.40	Post PCB Decontamination Samplin	1.00	EA	33,930	1,700	5,340	4,100	1,800	46,870	46869.77
33.42	PCB Closure Certification	1.00	EA	12,400	620	1,950	1,500	660	17,130	17129.11
33.45	PCB Project Management	1.00	EA	11,800	590	1,860	1,420	630	16,300	16300.28
TOTAL	Building 301, PCB Transformer	1.00	EA	217,980	10,900	34,330	26,320	11,580	301,110	301109.54

No errors detected...

* * * END OF ERROR REPORT * * *