ATTACHMENT 7

CLOSURE PLAN

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1.0 CLOSURE PLAN

Clean Harbors Clive (CHC) is a transfer, treatment, and storage facility located in the West Desert Hazardous Industry Area of Tooele County, Utah. The site is owned and operated by Clean Harbors Clive, LLC and operates under the authority of the Utah Division of Waste Management and Radiation Control (DWMRC), the U.S. Environmental Protection Agency, Region VIII, and the Tooele County Department of Engineering.

This closure plan addresses the entire CHC facility at Clive, Utah. Because CHC is not a land disposal facility, no Post-Closure Plan or permits are required. All areas to the east of the rail spur inside the fence line of the facility, except for Unit 33 (Lamp Recycling Unit), Unit 101 (Container Management Building), Unit 102 (Warehouse Building), and Unit 061 (Maintenance Building) have been clean closed and require no further action. However, soil sampling that will be conducted at final closure must be done for the entire site, including the area east of the rail spur.

1.1 Waste Management Units to be Closed

1.1.1 Land Disposal Units

There are no landfills, surface impoundments, land treatment areas, or any other type of land disposal units at the facility.

1.1.2 Storage Areas

There are a variety of hazardous waste and TSCA storage units at CHC. These units may be grouped into two basic types: permitted storage and ten-day transfer areas. Detailed descriptions of the hazardous waste units are in Attachment 8 (Container Management), Attachment 9 (Design Drawings), and Attachment 10 (Management of Bulk Solids Tanks and Containment Building). Brief descriptions are provided below.

1.1.2.1 *Container Storage and Processing*

Storage of containers occurs in several areas of CHC, including Unit 33 (Lamp Recycling Unit) and trailers (lamps only), Unit 101 (Drum Transfer Facility and Docks), the Unit 102 (Warehouse Building), the Unit 105 (Thaw Unit), the Unit 106 (Containerized Bulk Solids Storage Unit), the Unit 535 (Rail/Truck Transfer Bay), and Unit 604 (Truck Wash Bay). All container storage units are managed in accordance with Attachment 8 (Container Management).

Unit 33 contains recycling equipment for various types of fluorescent lamps and may be used to store containers of lamps before processing.

Unit 101 is permitted for hazardous waste receiving and storage. Bays A and B in Unit 101 are used to store and process non-hazardous waste cylinders. Bay G in Unit 101 is used to store and decant waste and granulate the empty containers.

Unit 102 (Warehouse Building) is used primarily to store containers that will be processed in Unit 101 Bay G and may be used for additional container storage as needed.

Unit 105 (Thaw Unit) is a large building suitable for the inside parking of several trucks or railcars as well as containers of smaller sizes. The unit may be heated in cold weather to thaw frozen shipments for subsequent sampling and management.

Unit 106 (Containerized Bulk Solids Storage Unit) is used for receiving, segregating, and storing wastes in sludge boxes, intermodal containers, and other large or small containers. Unit 106 consists of an enclosed portion of Subunit 1 (Building 106). The remainder of Subunit 1 and all of Subunits 2 and 3 are unenclosed.

Unit 535 (Rail/Truck Transfer Bay) provides an area for the transfer of wastes between rail cars and trucks.

Unit 604 (Truck Wash Bay) is used for transferring waste between containers and storing containers, including leaking containers being prepared for shipment to alternate facilities. It is also used for washing containers and equipment.

1.1.2.2 *Ten-Day Transfer Areas*

There are three areas that are not permitted for storage where waste is temporarily placed, transferred from rail to truck transport vehicles, or transferred from one truck to another. These are 10-day transfer areas and include:

- Unit 255, which is used for bulk solid rail to truck transfer,
- The Temporary Storage Pad, where vans or roll-offs are temporarily placed awaiting further processing at the facility, and
- The rail yard adjacent to Unit 255, where intermodal containers are unloaded from flat standard railcars.

Drawings of these areas are in Attachment 9 (Design Drawings).

1.1.2.3 *Bulk Solids Tanks*

Unit 251 contains three Bulk Solids Tanks (251-TK-031, 251-TK-032, 251-TK-033). These tanks are used for bulk waste that has volatile organic compounds (VOCs) emissions less than 500 ppm (measured using EPA Method 21).

1.2 Closure Performance Standard

CHC will be closed in a manner that 1) minimizes the need for further maintenance and 2) controls minimizes, or eliminates, post-closure escape of hazardous waste, hazardous constituents, contaminated runoff, or hazardous waste decomposition products to the ground, surface water, or atmosphere to the extent necessary to protect human health and the environment. CHC will meet this performance standard by following the guidance below.

1.2.1 Decontamination Standards

CHC intends to close all waste management units by complete removal of waste and waste constituents to meet the standards in accordance with section 1.2.1.1. so that there will be no need for post-closure monitoring and maintenance of the facility. Upon closure, waste handling equipment and containment areas shall be either: decontaminated and removed; decontaminated and left in place; or removed without decontamination and managed as hazardous waste. The decontaminated buildings, structures, equipment, and secondary containment areas are all that will remain of the facility itself. All exposed soil areas that may be subject to erosion will be revegetated using native plants to approximately the same extent as is consistent with the existing plant community. Soils will be cleaned to the most current version of Regional

Screening Level (RSL) values for Industrial Soils. Hard Surfaces will be decontaminated in accordance with section 1.2.1.1.

1.2.1.1 *Hard Surface Rinsate*

Hard surfaces include concrete surfaces, metal building materials, equipment manufactured from metal and other non-porous materials. All decontamination will be done within secondary containment so that wash water can be collected and sampled. Concrete surfaces will be hydroblasted with an appropriate industrial strength detergent solution. Wash water will be collected in sumps or within secondary containment. Representative samples of final rinse water will be collected from sumps or secondary containment areas.

Rinsate will be analyzed using test methods specified in Attachment I (Waste Analysis Plan [WAP]). Decontamination will be considered acceptable when 1) pH is between 6 and 9, and 2) when either TOC is less than 50 ppm or when the maximum contaminant levels for drinking water are met for the constituents listed in R315-261-1091, Appendix VIII.

If test results fail to meet the decontamination standards, the area or piece of equipment must be decontaminated again. This must be repeated until the standard is achieved.

Contaminated rinse water will be collected for either on-site treatment or for disposal at a permitted hazardous waste disposal facility.

1.2.1.2 *Soils*

A soil is defined as all soil media and includes soils adjacent to permitted units, soils collected from beneath sumps and secondary containment, roadways, and any other soil that is excavated during the closure activities.

Metals, volatiles, and semi-volatile compounds shall meet the Industrial Levels established in the most current version of the RSL Risk Assessment Summary Table. Soils will be determined clean if the constituents present in Appendix VIII are at or below the RSL levels and the sum risk from multiple contaminants equals the following:

- For carcinogens, the total cancer risk must be $\leq 1 \times 10^{-6}$
- For all other contaminants (non-carcinogen) for which there is a detection, the Total Hazard Index must be ≤ 1.

Section 1.2.1.3 below addresses Sum Risk from Multiple Contaminants.

1.2.1.3 *Accumulated Risk (Based on the EPA RSL)*

Using RSLs to Sum Risk from Multiple Contaminants

RSLs can be used to estimate the total risk from multiple contaminants at a site as part of a screening procedure. This methodology, which does not substitute for a baseline risk assessment, is often called the “sum of the ratios” approach. The methodology is as follows:

1. Conduct sampling and perform analysis in accordance with the WAP.
2. Identify contaminants in the screening level (SL) Table. Record the SL concentrations of the various contaminants and note whether the SL is based on cancer risk (indicated by ‘c’) or non-cancer hazard (indicted by ‘n’). Segregate cancer SLs from non-cancer SLs.

3. For sampling scenarios that have at least eight samples, a statistical approach to data evaluation can be used on a case-by-case basis when approved by the Director. Evaluations that use this approach can use ProUCL (developed by the EPA) or a similar software program. For cancer risk estimates, take the site-specific concentration (maximum or 95th percent of the upper confidence limit [UCL] on the mean) and divide by the SL concentrations that are designated for cancer evaluation'c.' Multiply this ratio by 10^{-6} to estimate chemical-specific risk for a reasonable maximum exposure (RME). For multiple pollutants, simply add the risk for each chemical. See Equation 1 below.

Equation 1

$$\boldsymbol{CR = \left[\left(\frac{CC_1}{SV_1}\right) + \left(\frac{CC_2}{SV_2}\right) + \left(\frac{CC_3}{SV_3}\right) + \cdots + \left(\frac{CC_n}{SV_n}\right)\right] \times 10^{-6}}$$

4. For non-cancer hazard estimates, divide the concentration term by its respective non-cancer SL designated as 'n' and sum the ratios for multiple contaminants. The cumulative ratio represents a non-carcinogenic hazard index (HI). A hazard index of 1 or less is generally considered 'safe.' A ratio greater than 1 suggests further evaluation. Note that carcinogens may also have an associated non-cancer SL that is not listed in the SL Table. To obtain these values, the user should view the Supporting Tables. See Equation 2 below:

Equation 2

$$\boldsymbol{HI = \left[\left(\frac{CC_1}{SV_1}\right) + \left(\frac{CC_2}{SV_2}\right) + \left(\frac{CC_3}{SV_3}\right) + \cdots + \left(\frac{CC_n}{SV_n}\right)\right] \times 1}$$

For each equation:

HI = Hazard Index

CR = Cancer Risk

CC = Contaminant Concentration

SV = Screening Values (RSLs)

N = Number of Contaminants

5. Soils that exceed either the Total Cancer Risk or the Total Hazard Index Must be disposed of in a permitted landfill cell. Soils that meet or are less than the established value can be left in place.

1.2.2 Procedures at Closure

Waste receipts will be terminated 90 days prior to commencing closure. Additionally, no process units will be operational during closure, thus all waste inventories, including waste generated during closure activities, shall be transported off-site for treatment and disposal.

The facility uses a financial assurance mechanism that guarantees performance of closure, so that 40 CFR § 264.112(b)(7) does not apply. Final soil sampling upon the closure of CHC will be conducted after all waste management units have been fully closed and decontaminated and all waste removed from the site. This Plan provides for a visual inspection of the entire facility and a random sampling effort along roads and around buildings to identify any areas of contamination. All samples will be collected and analyzed as specified in the Contaminated Soil Sampling Plan,

and the results compared against the RSLs. Any soil with analytical values exceeding the RSL standards shall be removed and disposed of off-site. Current state and federal hazardous waste and TSCA regulations will be used to determine whether the soil must be managed as hazardous, TSCA, or non-hazardous waste. The presumption, however, will be that the soil must be considered hazardous and must be shown otherwise if non-hazardous waste disposal is desired. All quality assurance shall be in accordance with the Quality Assurance Plan (QAP), which is Appendix 1 of Attachment 1 (WAP).

1.3 Partial Closure and Final Closure Activities

To accomplish closure of the entire facility, CHC will implement steps 1 through 10 below. Steps 1 through 3 are relevant to closure of a specific unit and will be implemented to accomplish partial closure of a given unit at the facility.

1. At least 45 days prior to the date it anticipates beginning closure of the first unit or partial closure of any unit, CHC shall provide a "Notice of Intent to Close the Facility" to the Director of DWMRC, to the US EPA, Region VIII Administrator, and to the Tooele County Engineering Department. These notices must include the date that closure activities are expected to commence and the anticipated closure date for each unit.

2. CHC shall modify or amend this Closure Plan in accordance with Condition I.D.2. CHC shall not implement this Closure Plan or any portion thereof until approval by DWMRC and/or other appropriate agencies has been received in accordance with Condition I.D.2.

3. Within 90 days after receiving the final volume of hazardous wastes, CHC shall remove all hazardous wastes from the facility or portion of the facility undergoing partial closure. The Director of DWMRC and any other appropriate regulatory agencies may authorize an extension of time. The estimated time requirement for total facility closure is approximately six months.

4. Following decontamination, as per Section 1.8. of this Plan, the waste storage buildings (Units 101, 102, 105, 106, 535, 604, and Unit 33), as well as non-permitted buildings which are used as 10-day transfer areas (Units 255 and 707) may be left as is. If a building is left standing, all doors will be closed and locked. All process equipment shall be decontaminated in accordance with Section 1.8 of the Plan and may be left in place on-site, salvaged/sold for reuse, or cut apart and disposed of off-site in accordance with applicable laws. The decision on whether to leave equipment in place, salvage it, or dispose of it off-site will be based on economic considerations and regulatory requirements at the time of closure; however, for the closure cost estimation it is assumed that all items will be disposed of at an off-site facility.

5. All storm water diversions, dikes, and corrugated steel pipe conduits will be maintained throughout closure to protect the facility from surface water run-on. These structures may be left in place at final closure for use by any subsequent tenants.

6. All contaminated soils, structures, and equipment shall be decontaminated in accordance with Section 1.2.1.2 or disposed of at an appropriate off-site hazardous waste or TSCA permitted facility.

7. Contaminated liquids generated by the closure process shall be managed in accordance with applicable regulations at the time of closure. Management options may include treatment on-

site by filtration to remove PCBs as allowed by TSCA regulations, followed by RCRA management; treatment and disposal off-site by stabilization and landfilling; deep well injection; or treatment and discharge by a properly permitted wastewater treatment system. Liquids generated by the closure process will be collected using drums, tankers, or other containers and transferred to 90-day storage containers or transport vehicles using pumps or vacuum systems.

8. Throughout closure activities the fence, gates, and warning signs shall be maintained pursuant to this Permit and all applicable Utah and Tooele County rules and regulations.

9. Within 60 days of the completion of closure or partial closure, CHC shall submit a Certification of Closure to the Director of DWMRC, EPA, and the Tooele County Engineering Department. The Certification of Closure shall be certified by CHC and an independent Utah-registered professional engineer attesting that the facility, unit, or specific areas have been closed in accordance with requirements of this Closure Plan.

10. CHC shall have a professional land surveyor prepare a survey plat marking the location and dimensions of any permanent structures with respect to permanently surveyed benchmarks. The survey shall be submitted to the Director of DWMRC, EPA, and Tooele County Land Office no later than the submission of the Certification of Closure for the entire facility. CHC shall also record a notation on the property deed indicating that the facility has been used to store and treat hazardous waste.

1.4 Maximum Waste Inventory

Table 1.1 specifies the maximum inventory of waste that could be on-site at CHC at the time of closure. The maximum inventory of waste in storage would occur if all units were at maximum capacity. The maximum amount of waste requiring treatment would be the capacity of the container storage areas. If any units are closed prior to total facility closure, the maximum extent of operations will decrease.

Table 1.1. Maximum inventory of wastes that could be on-site at the Clive Facility

Container Management Units	Description	Maximum Waste Capacity [1,2]
33 and trailers	Lamp Crusher	118,000 pounds
101	Drum Transfer Facility and Docks	239,800 gallons
102	Warehouse Building	46,200 gallons
105	Thaw Unit	60,000 gallons
106[3]	Containerized Bulk Solids	2,357,384 gallons/11,672 cy.
106 West	Containerized Bulk Solids	1,373,423 gallons/6,799 cy.
251	Bulk Solids Tanks	255,834 gallons/1,266 cy.
535	Rail/Truck Transfer Bay	23,560 gallons

1. The Truck Wash Bay is not included as having capacity in storage at closure because Unit 106 is assumed to be at full capacity. Unit 604 may only store waste when a corresponding volume of capacity remains available at Unit 106.

2. Materials in storage requiring shipment off-site and/or treatment.

3. Subunits 1 – 3, which include Building 106

1.5 Schedule for Closure

Partial closure and final closure will occur as described in this Closure Plan. Projected closure schedules for CHC are included at the end of Section 2.3.

1.6 Time Allowed for Closure

Table 1.2 summarizes the planned closure activities of the facility with an estimated timeline, as if no partial closures are anticipated. These activities may be seen in more detail in Section 2.3, the Schedule for Closure.

Table 1.2. Projected schedule of events at closure of the entire facility

Elapsed Time (months)	Event(s)
-	Notification to DWMRC, EPA, and Tooele County Engineering Department
1.5	Final receipt of containerized waste at Units 33, 101, 102, 535, 105, 106, and bulk solids waste in Unit 251. Mobilize work force.
4.5	Removal of wastes stored in Units 33, 101, 102, 105, 106, 106 West, 251, 535 and 604.
6.0	Complete disposal or decontamination of Units 33, 105, 106, 251, 535, 604, and all ten-day transfer areas.
7.5	Finish decontamination of miscellaneous areas. Finish soil investigations, sampling, and re-seeding, as necessary.
9.5	Certifications due to DWMRC, EPA, and Tooele County Engineering Department. Notice to Tooele County Land Office.

1.7 Closure Plan Modifications

Copies of the closure plan are maintained by Clean Harbors and DWMRC. When facility operational changes dictate a modification to this plan, the CHC facility will submit a request for permit modification to the Director of DWMRC to make the necessary changes to the closure plan in accordance with R315-264-112 and Condition I.D.2 of this permit.

1.8 Inventory Disposal, Removal, or Decontamination

CHC has been designated to meet all existing standards regarding the containment of waste and has procedures in place to address any spills that may result from waste handling immediately. This includes provisions for managing waste only in designated areas with adequate primary and secondary containment and the prompt cleanup of any spilled material to prevent its spread. The process is different only in Unit 106 West, since 106 West lacks secondary containment. In 106 West, spills are cleaned promptly, and after cleanup is complete, samples of the soil where the spill occurred are collected and compared with samples of soil taken from the surrounding area. Spills of PCB materials are cleaned up pursuant to either 40 CFR 761 Subpart G or 40 CFR 761.79 as appropriate.

All areas external to the waste management units themselves are expected to be clean, except for incidental spills that might occur during closure itself. However, to ensure that this is indeed the case, a thorough visual inspection of the entire facility will be completed after all waste management units are closed and all waste has been removed from the facility. This inspection will be looking for standing liquids, staining, or accumulations of debris or residues that would indicate soils or pavement contamination.

In addition, a series of random samples shall be collected from along facility roads, rail spurs, and around the waste management units and analyzed for contamination. Any areas found to be contaminated will be further investigated, and the contamination will be removed to meet the RSL standards. The entire inspection and sampling effort is fully described in Appendix B, the Contaminated Soils Sampling Plan.

It is planned that once closure starts, closure activity will continue (except for weather and equipment delays, etc.) until closure is complete. Closure activities may or may not occur on individual units at the same time.

Equipment needing decontamination may be transported to Unit 604 or any other fixed or temporary containment area to provide working room for decontamination or staging of equipment awaiting decontamination.

The following steps can be utilized to decontaminate various components of the facility:

1.8.1 Mobile Equipment

The tractors, forklifts, trucks, and other similar mobile equipment which are known or suspected to be contaminated with hazardous waste will be decontaminated. Decontamination will require use of water, steam, heated detergent solutions, or water-miscible solvents, whatever removes the contamination. The wastewater will be managed as described in 1.8.5. The decontaminated mobile equipment may be transferred to another hazardous waste facility after demonstrating the final rinse water meets the "hard surface" decontamination standard specified in section 1.2.1.1. If mobile equipment fails to meet the decontamination standard specified in section 1.2.1.1 or is not decontaminated to meet this standard, the equipment must be disposed of off-site in a hazardous waste landfill facility.

1.8.2 PCB Waste Management Areas

Each of the waste storage and/or transfer units being closed that have managed PCB wastes in the past will undergo a visual inspection to identify and record potential new or previously unidentified PCB spills. Potential spills will be sampled and analyzed for PCBs unless decontaminated in accordance with 40 CFR § 761.79. Sampled spills containing PCBs > 10 µg/100 cm^2 will be decontaminated in accordance with the PCB spill cleanup policy (for spills less than 72 hours old) or 40 CFR § 761.79 (for spills more than 72 hours old). The decontamination procedures identified in the steps below will then be performed if not already accomplished during PCB decontamination. Details on wipe sampling of a given area after cleaning are presented in the sections specific to each waste management unit that stored or processed PCB wastes.

1.8.3 Spills Due to Closure Activities

During closure of a given waste management unit and transfer areas, facility personnel will visually inspect the surrounding areas on a weekly basis. These inspections will be documented and kept in the facility operating record. These inspections should detect any spills that might have occurred due to on-going closure activities. Based on the inspection, any surfaces that appear to be contaminated with hazardous wastes will be cleaned to the RSL standards or excavated and backfilled with clean soil. Contaminated soils will be subject to the generator analysis referenced in the WAP and managed accordingly or the soil may be assumed to be a hazardous waste and shipped off-site for treatment/disposal.

1.8.4 Decontamination of Hard Surfaces

Hard surface (concrete, steel, etc.) decontamination procedures are intended to apply to both structures and equipment. Closure of "hard surface" items is performance based and any cleaning method may be used to achieve the standard. No direct testing of the surfaces is intended, as there are no general wipe tests which have been approved by the US EPA or DWMRC. The standard for successful decontamination is a sample of the final rinse water from the item or surface meeting the standards specified in section 1.2.1.1. Additionally, for those areas used to manage PCBs the final rinse sample from the containment area must have a total PCB concentration of 0.5 ppb or less.

1.8.5 Wash/Rinse Water

All wash/rinse water or other cleaning residues will be collected and handled as hazardous waste. The closure cost estimate assumes that these residues will be sent for off-site incineration. However, wastewater residues may also be treated via filtration to remove PCBs, sent to a facility for deep well injection, treated and discharged under the NPDES program, or stabilized for landfill disposal. The method used will be decided at the time of closure based on site availability, regulatory approvals/regulations, and economics.

1.8.6 Waste Generated during Closure

The various waste items that will need to be disposed of during closure will be treated depending on what they are and how they were generated. Hazardous waste will be incinerated or landfilled at RCRA and/or TSCA permitted waste facilities, while non-hazardous items may be landfilled at non-hazardous waste facilities or at another approved disposal location.

1.8.7 Tanks

Tanks and similar items may be decontaminated as hard surfaces as described above, after which they may be put to other uses, sold for salvage, or disposed of as non-hazardous waste. If a given item fails to meet the RSL standard, it may be cut into manageable pieces and disposed of in a RCRA or TSCA permitted landfill or disposed of using other RCRA or TSCA treatment technology authorized at the time of closure. The decision whether to salvage an item for reuse, sell it for scrap metal, or dispose of it will be based on market conditions at closure and the economics of salvage versus disposal. However, as required by R315-264-142(a)(3), to calculate closure costs it has been assumed that all units that have actively held waste will be disposed of in a hazardous waste facility. Certain equipment, as specifically noted elsewhere, may be assumed to be salvaged following decontamination, but no positive salvage value is given to these items in the closure cost estimates.

1.9 Closure plans by Waste Management Unit

There are eight areas of the facility that relate directly to receipt of waste shipments. These are Unit 33 (Bulb Recycling Unit), Unit 101 (Drum Transfer Facility and Docks), Unit 102 (Warehouse Building), Unit 105 (Thaw Unit), Unit 106 (Containerized Bulk Solids Storage Area), Unit 535 (Rail/Truck Transfer Bay),Unit 251 (Bulk Solids Tanks), and Unit 255 (Railcar to Trailer Transload Building). Unit 604 (Truck Wash Bay) is permitted for container storage but is assumed to be empty of waste at the time of closure. This is because waste may only be stored in Unit 604 if an equivalent volume of capacity remains available in Unit 106, and this plan

assumes that Unit 106 is full at the time of closure. CHC must remove all waste in Unit 604 for off-site management and decontaminate the unit as described in section 1.9.4.

1.9.1 Unit 33 – Bulb Recycling Unit

All waste stored in Unit 33 will be removed and transported off-site for disposal in accordance with UAC R315-264-114. As with the other buildings and containment areas on-site, it is assumed that the containment area is RCRA-contaminated. Unit 33 is assumed to be filled to the maximum capacity of 118,000 pound of lamps at the time of closure. Upon completion of waste removal, all containment surfaces will be visually inspected for indications of PCB contamination such as stains or discolored areas. An evaluation of the area will also be made based on operator knowledge and a review of the operating record.

1. High pressure steam and water sprays will be used to clean the building floor to meet the definition of a clean debris surface in 40 CFR § 268.45.
2. Ancillary equipment and the lamp processing machine will be high-pressure washed with detergent solution. All liquids will be collected by vacuum truck for offsite disposal. The equipment will be cleaned to the definition of a clean debris surface in 40 CFR § 268.45.
3. All personnel involved in decontamination procedures will wear rubber boots and gloves, disposable coveralls, hardhats, safety glasses, and appropriate respiratory protection. Upon completion of decontamination these materials will be collected and placed in drums for off-site disposal.
4. Decontamination is anticipated to produce 18,776 gallons of wash water, which will be transported off-site for disposal.

1.9.2 Unit 101 - Drum Transfer Facility

All waste stored in Unit 101 will be removed and transported offsite for disposal in accordance with UAC R315-264-114. As with the other buildings and containment areas on-site, it is assumed that the containment area of Unit 101 is RCRA contaminated. At the time of closure, Unit 101 is assumed filled to the maximum total capacity of 239,800 gallons of PCB waste.

Upon completion of waste removal, all containment surfaces will be evaluated for indications of PCB contamination using operator knowledge, visual inspection (for stains/discolored areas), and an operating record review. Areas suspected of being contaminated with PCBs will be identified, recorded, and sampled to determine if the area exceeds PCBs > $10\mu g/100cm^2$ in accordance with 40 CFR § 761.79 and must be decontaminated in accordance with 40 CFR § 761.79. The containment area of Unit 101 will be cleaned as a “hard surface” in accordance with Section 1.8 of this Closure Plan, Attachment 7.

In addition to the wipe sampling necessary to demonstrate PCB decontamination of stained areas, wipe samples for PCBs will be taken from the containment area following cleaning in accordance with 40 CFR § 761.123, Definitions: *Standard Wipe Test* and the following sampling scheme.

The wipes will be taken from horizontal floor and sump bottom surfaces. A total of 20 planned wipes will be taken from Unit 101 containment areas. The sampling points will be taken by establishing diagonal lines from the NW to SE and from the NE to the SW corner of each containment area. The intersecting point (center) of the lines will be one sampling point. The

other sampling points will be located at equal increments from the intersection point (center) to each of the four containment area corners. Each wipe sample will be analyzed separately. Surfaces found to be above the 40 CFR § 761.79 standard will be decontaminated until wipe testing confirms wipe concentrations are below the 40 CFR § 761.79 standard. Samples of the final rinse solution from the containment areas will meet the standards listed in section 1.2.1.1 and PCBs. Decontamination will be complete when the standard in section 1.2.1.1 is met, and the total PCB concentration is 0.5 ppb or less.

1.9.3 Unit 102 - Warehouse Building

All waste stored in Unit 102 will be removed and transported offsite for disposal in accordance with UAC R315-264-114. As with the other buildings and containment areas on-site, it is assumed that the containment area of Unit 102 is RCRA contaminated. At the time of closure, Unit 102 Bay G is assumed filled to the maximum total capacity of 46,200 gallons of PCB waste.

Upon completion of waste removal, all containment surfaces will be evaluated for indications of PCB contamination using operator knowledge, visual inspection (for stains/discolored areas), and an operating record review. Areas suspected of being contaminated with PCBs will be identified, recorded, and sampled to determine if the area exceeds PCBs > $10\mu g/100cm^2$ in accordance with 40 CFR § 761.79 and must be decontaminated in accordance with 40 CFR § 761.79. The containment area of Unit 102 will be cleaned as a "hard surface" in accordance with Section 1.8 of this Closure Plan, Attachment 7.

In addition to the wipe sampling necessary to demonstrate PCB decontamination of stained areas, wipe samples for PCBs will be taken from the containment area following cleaning in accordance with 40 CFR § 761.123, Definitions: *Standard Wipe Test* and the following sampling scheme.

The wipes will be taken from horizontal floor and sump bottom surfaces. A total of 20 planned wipes will be taken from Unit 102 containment areas. The sampling points will be taken by establishing diagonal lines from the NW to SE and from the NE to the SW corner of each containment area. The intersecting point (center) of the lines will be one sampling point. The other sampling points will be located at equal increments from the intersection point (center) to each of the four containment area corners. Each wipe sample will be analyzed separately. Surfaces found to be above the 40 CFR § 761.79 standard will be decontaminated until wipe testing confirms wipe concentrations are below the 40 CFR § 761.79 standard. Samples of the final rinse solution from the containment areas will meet the standards listed in section 1.2.1.1 and PCBs. Decontamination will be complete when the standard in section 1.2.1.1 is met, and the total PCB concentration is 0.5 ppb or less.

1.9.4 Unit 105 - Thaw Unit

Upon closure of Unit 105, all waste will be removed from the unit and transported off-site for management in accordance with UAC R315-264-114. At closure, Unit 105 is assumed to be filled to the maximum total capacity of 60,000 gallons of waste. This is generally anticipated to be rail tank cars, bulk solids in sludge boxes, and intermodal and other large containers (but may also include smaller containers of waste).

Upon completion of waste removal, all containment surfaces will be visually inspected for indications of PCB contamination such as stains or discolored areas. An evaluation of the area will also be made based on operator knowledge and a review of the operating record. Areas

suspected of PCB contamination will be identified, recorded, and sampled to determine if PCB concentrations exceed 10 µg/100 cm^2 and require decontamination in accordance with 40 CFR § 761.79.

Unit 105 will be cleaned as a "hard surface" in accordance with Section 1.8 of this Closure Plan. In addition to the wipe sampling necessary to demonstrate PCB decontamination of stained areas, wipe samples for PCBs will be taken from the containment area following cleaning in accordance with 40 CFR § 761.123, Definitions: *Standard Wipe Test* and the following sampling scheme.

The wipes will be taken from horizontal floor and sump bottom surfaces. A total of nine planned wipes will be taken by establishing diagonal lines from NW to the SE and from the NE to the SW corner of each containment area. The intersecting point (center) of the lines will be one sampling point. The other sampling points will be located at equal increments from the intersection point (center) to each of the four containment area corners. Each wipe sample will be analyzed separately. Surfaces found to exceed the 40 CFR § 761.79 standard will be decontaminated until wipe testing confirms that concentrations are below the 40 CFR § 761.79 standard. A sample of the final rinse solution from the containment area will be analyzed for the standards specified in section 1.2.1.1 and PCBs. Decontamination will be complete when the standard in section 1.2.1.1 is met, and the total PCB concentration is 0.5 ppb or less.

Should Unit 105 be closed for used oil management, the same procedures outlined above will be followed.

1.9.5 Unit 106 - Containerized bulk Solids Storage

Upon closure of Unit 106, all waste will be removed from the unit and transported off-site for management in accordance with UAC R315-264-114. At closure, Unit 106 is assumed to be filled to the maximum total capacity of 2,357,384 gallons - 1,139,753 gallons in Subunit 1, with 957,953 gallons in the enclosed area of Subunit 1 and 181,800 gallons in the unenclosed portion of Subunit 1; 617,463 gallons in Subunit 2 and 600,168 gallons in Subunit 3. The wastes stored in Unit 106 are generally bulk solids in sludge boxes and intermodal and other large containers (but may also include smaller containers of waste).

For 106 building and subunits, upon completion of waste removal, all containment surfaces will be visually inspected for indications of PCB contamination such as stains or discolored areas. An evaluation of the area will also be made based on operator knowledge and a review of the operating record. Areas suspected of PCB contamination will be identified, recorded, and sampled to determine if PCB concentrations exceed 10 µg/100 cm^2 and require decontamination in accordance with 40 CFR § 761.79.

The containment area of Unit 106, subunits, and the truck lanes will be cleaned as a "hard surface" in accordance with Section 1.8 of this Closure Plan. In addition to the wipe sampling necessary to demonstrate PCB decontamination of stained areas, wipe samples for PCBs will be taken from the containment area following cleaning in accordance with 40 CFR § 761.123, Definitions, *Standard Wipe Test,* and the following sampling scheme.

The wipes will be taken from horizontal floor surfaces. A total of nine planned wipes will be taken by establishing diagonal lines from NW to the SE and from the NE to the SW corner of each containment area. The intersecting point (center) of the lines will be one sampling point. The other sampling points will be located at equal increments from the intersection point (center)

to each of the four containment area corners. Each wipe sample will be analyzed separately. Surfaces found to exceed the 40 CFR § 761.79 standard will be decontaminated until wipe testing confirms that concentrations are below the 40 CFR § 761.79 standard. A sample of the final rinse solution from the containment area will be analyzed for the standards specified in section 1.2.1.1 and PCBs. Decontamination will be complete when the standard in section 1.2.1.1 is met, and the total PCB concentration is 0.5 ppb or less.

Salvageable equipment will be cleaned as "hard surfaces" following the requirements set forth in Section 1.2.1.1 and, if required, according to 40 CFR § 761.79(c). Equipment to be used in Unit 106 may include trucks for roll-off bins, straddle packers, forklifts, hand tools, and similar equipment.

1.9.6 Unit 251 – Bulk Solids Tanks

All waste stored in the three bulk solids tanks in Unit 251 (251-TK-031, 251-TK-032, and 251-TK-033) will be removed and transported off-site for disposal in accordance with the UAC R315-264-114. At closure, the bulk solids tanks in Unit 251 are assumed to be filled to the maximum total capacity of 255,834 gallons/1,266 cubic yards with bulk solids waste.

Once the waste is removed, the tank surfaces will be cleaned as "hard surfaces" in accordance with Section 1.8 of this Closure Plan. In addition, PCB wipe sampling will be completed according to 40 CFR § 761.123. CHC personnel will conduct a visual inspection of areas surrounding the tanks and will conduct additional sampling in areas that have indications of possible contamination (e.g., stains and discolored areas).

1.9.7 Unit 535 - Rail Car to Truck Transload Area

All waste stored in Unit 535 will be removed and transported off-site for disposal in accordance with UAC R315-264-114. As with other buildings and containment areas onsite, it is assumed that the containment area of Unit 535 is RCRA contaminated. At the time of closure, Unit 535 is assumed to be filled to the maximum total capacity of 23,560 gallons of PCB waste.

Upon completion of waste removal, all containment surfaces will be visually inspected for indications of PCB contamination such as stains or discolored areas. An evaluation of the area will also be made based on operator knowledge and a review of the operating record. Areas suspected of PCB contamination will be identified, recorded, and sampled to determine if PCB concentrations exceed 10 µg/100 cm^2 and require decontamination in accordance with 40 CFR § 761.79.

The containment area of Unit 535 will be cleaned as a "hard surface" in accordance with Section 1.8 of this Closure Plan. In addition to the wipe sampling necessary to demonstrate PCB decontamination of stained areas, wipe samples for PCBs will be taken from the containment area following cleaning in accordance with 40 CFR § 761.123, Definitions, *Standard Wipe Test,* and the following sampling scheme.

The wipes will be taken from horizontal floor and sump bottom surfaces. A total of 20 planned wipes will be taken from Unit 535 secondary containment areas. The sampling points will be taken by establishing diagonal lines from NW to SE and from the NE to the SW corner of each containment area. The intersecting point (center) of the lines will be one sampling point. The other sampling points will be located at equal increments from the intersection point (center) to each of the four containment area corners. Each wipe sample will be analyzed separately.

Surfaces found to exceed the 40 CFR § 761.79 standard will be decontaminated until wipe testing confirms that concentrations are below the 40 CFR § 761.79 standard. A sample of the final rinse solution from the containment area will be analyzed for the standards specified in section 1.2.1.1 and PCBs. Decontamination will be complete when the standard in section 1.2.1.1 is met, and the total PCB concentration is 0.5 ppb or less.

Should Unit 535 be closed for used oil management, the same procedures outlined above will be followed.

1.9.8 Units 255 & 604 - Miscellaneous Containment Areas

Two other waste management areas must be closed, along with miscellaneous piping, hoses, portable pumps, hand tools, and similar equipment. These areas are the Railcar to Truck Transload Bay (Unit 255) and the Truck Wash Building (Unit 604). As with the other buildings and containment areas onsite, it is assumed that the containment area of Unit 255 and the interior of the truck wash are RCRA contaminated, and no prior testing will be conducted for confirmation. Both units are used to handle PCB wastes. All PCB spills are cleaned as they occur according to 40 CFR § 761 Subpart G. However, before implementing the "hard surfaces" decontamination methods described in section 1.2.1.1 of this Closure Plan, all containment surfaces will be visually inspected for indications of PCB contamination such as stains or discolored areas. An evaluation of the area will also be made based on operator knowledge and a review of the operating record. Areas suspected of PCB contamination will be identified, recorded, and sampled to determine if PCB concentrations exceed 10 µg/100 cm2 and require decontamination in accordance with 40 CFR § 761.79.

Units 604 and 255, including the walls, floor, and ceiling (if necessary) for Unit 604 and the containment surfaces of Unit 255 will be cleaned as "hard surfaces" in accordance with Section 1.2.1.1 of this Closure Plan.

In addition to the wipe sampling necessary to demonstrate PCB decontamination of stained areas in both units, PCB wipe samples will be taken from the containment areas following cleaning in accordance with 40 CFR 761.123 Definitions, Standard Wipe Test, and the following sampling scheme:

Unit 255: Upon completion of waste removal, all containment surfaces will be visually inspected for indications of PCB contamination such as stains or discolored areas. An evaluation of the area will also be made based on operator knowledge and a review of the operating record. Areas suspected of PCB contamination will be identified, recorded, and sampled to determine if PCB concentrations exceed 10 µg/100 cm^2 and require decontamination in accordance with 40 CFR § 761.79.

The containment area of Unit 255 will be cleaned as a "hard surface" in accordance with Section 1.8 of this Closure Plan. In addition to the wipe sampling necessary to demonstrate PCB decontamination of stained areas, wipe samples for PCBs will be taken from the containment area following cleaning in accordance with 40 CFR 761.123, Definitions, *Standard Wipe Test,* and the following sampling scheme.

The wipes will be taken from horizontal floor and sump bottom surfaces. A total of nine planned wipes will be taken from the secondary containment areas. The sampling points will be taken by establishing diagonal lines from NW to SE and from the NE to the SW corner of each containment area. The intersecting point (center) of the lines will be one sampling point. The

other sampling points will be located at equal increments from the intersection point (center) to each of the four containment area corners. Each wipe sample will be analyzed separately. Surfaces found to exceed the 40 CFR § 761.79 standard will be decontaminated until wipe testing confirms that concentrations are below the 40 CFR § 761.79 standard. A sample of the final rinse solution from the containment area will be analyzed for the standards specified in section 1.2.1.1 and PCBs. Decontamination will be complete when the standard in section 1.2.1.1 is met, and the total PCB concentration is 0.5 ppb or less.

Unit 604: Upon completion of waste removal, all containment surfaces will be visually inspected for indications of PCB contamination such as stains or discolored areas. An evaluation of the area will also be made based on operator knowledge and a review of the operating record. Areas suspected of PCB contamination will be identified, recorded, and sampled to determine if PCB concentrations exceed 10 µg/100 cm^2 and require decontamination in accordance with 40 CFR § 761.79.

The containment area of Unit 604 will be cleaned as a "hard surface" in accordance with Section 1.8 of this Closure Plan. In addition to the wipe sampling necessary to demonstrate PCB decontamination of stained areas, wipe samples for PCBs will be taken from the containment area following cleaning in accordance with 40 CFR 761.123, Definitions, *Standard Wipe Test,* and the following sampling scheme.

The wipes will be taken from horizontal floor and sump bottom surfaces. A total of nine planned wipes will be taken from the secondary containment areas. The sampling points will be taken by establishing diagonal lines from NW to SE and from the NE to the SW corner of each containment area. The intersecting point (center) of the lines will be one sampling point. The other sampling points will be located at equal increments from the intersection point (center) to each of the four containment area corners. Each wipe sample will be analyzed separately. Surfaces found to exceed the 40 CFR § 761.79 standard will be decontaminated until wipe testing confirms that concentrations are below the 40 CFR § 761.79 standard. A sample of the final rinse solution from the containment area will be analyzed for the standards specified in section 1.2.1.1 and PCBs. Decontamination will be complete when the standard in section 1.2.1.1 is met, and the total PCB concentration is 0.5 ppb or less.

Decontaminated equipment, containment surfaces, and buildings may either be removed or left in place.

1.9.9 Laboratory Closure

Most of the laboratory has been closed in accordance with the Closure Plan. Only one room of the laboratory has not been closed and it was used to receive, store, and prepare waste samples to be shipped to an off-site laboratory for analysis. The related domestic water and sewage systems will most likely remain in place during the closure period and for some time thereafter.

1. The remaining waste receiving laboratory room will be closed as follows: The laboratory furniture will be removed from the building and decontaminated by meeting the "hard surface" decontamination standard where such furniture meets the definition of a hard surface. Furniture not meeting the definition of a hard surface will be disposed of as hazardous waste. Following decontamination, furniture will be disposed of as solid (non-hazardous) waste, salvaged, or placed back into use. Alternatively, if CHC chooses not to decontaminate the furniture it must be disposed of as hazardous waste.

2. Stains on walls will be identified and decontaminated. The decontamination residue will be disposed of as PCB/RCRA wastes for incineration or landfill, as appropriate. Stained areas will have wipe samples taken from them and they will be analyzed separately. Surfaces found to be above the 40 CFR § 761.79(b) standard (<100 µg/100 cm2 PCBs) will be decontaminated until wipe testing confirms that concentrations are below the 40 CFR § 761.79(b) standard. The floor of the room will be cleaned to meet the RSL standard for "hard surfaces."

3. All plumbing fixtures will be washed but may otherwise remain in place.

1.9.10 Administration Building

The two-story administration building is no longer in use. Waste was never managed in this building, so it does not have to undergo closure.

2.0 CLOSURE COST ESTIMATES

Closure Cost Estimates have been prepared for CHC in accordance with the requirements of Utah Administrative Code R315-264-142. These estimates assume that CHC is closed as detailed in this Closure Plan. These estimates assume that all waste at the facility will be disposed of off-site at third party facilities. For calculation purposes, it is assumed that all waste management units at CHC will be at full permitted capacity at the time of closure. Costs are based on labor and materials rates known or estimated as of mid-2018. All costs will be adjusted periodically as required by the rules.

2.1 Basis for Cost Estimates

The cost estimates for closure of a hazardous waste facility must consider the most expensive scenario for closure. This would occur if the facility were to begin closure while all hazardous waste storage areas were at capacity (refer to Table 1.1).

Closure cost estimates for the facility are based on available published prices, experience with similar activities at other facilities, or the judgment of company engineering staff. A contingency of 10% was assumed to allow for errors and fluctuations. All estimates assume that closure is performed by a third-party contractor and not Clean Harbors personnel. However, some costs are based on those charged by Clean Harbors contractors at other facilities.

All costs are based on 2018 dollars. The calculations are based on projected facility operations, and the assumed closure period is an estimate. The cost estimates consider only the costs imposed by the handling of hazardous wastes and TSCA-regulated wastes, and it is assumed that all general waste storage capacities are taken up by these wastes. Any non-hazardous waste handled at the facility will be stored and treated in units that also handle hazardous waste, so there is no need to consider these separately.

CHC will prepare new closure cost estimates and modify the permit in accordance with Condition 1.D.2 whenever a change in the Closure Plan would affect the cost of closure. Each year CHC will adjust the latest closure cost estimates by using an inflation factor derived from the annual *Implicit Price Deflator for Gross National Product* published by the US Department of Commerce in its *Survey of Current Business*. The inflation factor will be calculated by dividing the latest published annual deflator by the deflator for the previous year. The latest

closure cost estimate will be multiplied by the inflation factor to determine the adjusted closure cost estimate.

To estimate closure costs CHC assumes that they will dispose of all waste and miscellaneous items. The waste storage buildings shall be decontaminated and left as constructed.

2.2 Cost Estimates by Waste Management Unit

The closure costs for specific areas are included in the tables below. These costs are estimated based on assumptions regarding the time needed for closure and the equipment used.

Table 2.1 is a summary of the closure cost estimates for CHC. The total in 2023 dollars, plus a 20% contingency allowance, is $ 17,998,827. At least this amount (adjusted as necessary for inflation has been guaranteed through the Financial Assurances described in Section 3.0.

Equipment and labor costs used in the estimates are shown in Table 2.2.

Individual unit closure cost estimates are shown in Table 2.3. Table 2.3 also includes closure cost estimates in 2019 dollars for closure of Units 105 and 535 for used oil operations. However, these additional cost estimates do not materially add to the required financial assurance since closure under the hazardous waste rules also satisfies the used oil closure requirements. If hazardous waste operations were closed in either one or both units but used oil operations continued, the facility would be required to secure the necessary financial assurance to satisfy the used oil closure estimates.

Table 2.1. Clean Harbors Clive Closure Cost Summary

Facility Area/Waste Management Unit	Estimated Cost to Close
Unit 33	$ 54,452
Unit 101 - Drum Transfer Building	$ 697,996
Unit 102 - Warehouse Building	$ 151,304
Unit 105 - Thaw Shed	$ 191,139
Unit 106 - Containerized Bulk Solids Storage	$ 6,740,239
Unit 106 West	$ 3,937,512
Unit 251 - Bulk Solids Tanks	$ 761,115
Unit 255 - Rail to Truck Transload	$ 20,574
Unit 535 - Rail/Truck Transfer Bay	$ 83,689
Unit 604 - Truck Wash /Laboratory	$ 18,772
Soils sampling and analysis	$ 286,904
Miscellaneous other costs	$ 73,000
Labor supervision	$ 16,500
Independent certifying engineer	$ 25,000
Subtotal	**$ 13,058,195**
20% Contingency	$ 2,611,639
Total in 2019 Dollars	**$ 15,669,835**
Inflation Calculations	
Total in 2020 Dollars ($ **15,669,835** x 1.018%)	$ 15,951,892
Total in 2021 Dollars ($ 15,951,892 x 1.012%)	$ 16,143,314
Total in 2022 Dollars ($ 16,143,314 x 1.042%)	$ 16,821,334
Total in 2023 Dollars ($ 16,821,334 x 1.070%)	$ 17,998,827
Total Estimated Closure Cost in 2023 Dollars	$ 17,998,827

Table 2.2. Clean Harbors Clive - Basis for Per Unit Costs

Labor Item	Cost per Unit	Unit	Basis
Avg RS Means	$ 77.38	Hour	2019 data
Supervisor	$ 60.00	Hour	-
Clerk	$ 14.00	Hour	-
Guard	$ 15.00	Hour	-
Facility Management	$ 1,500.00	Week	-
Equipment Item	Cost per Unit	Unit	
Steam Cleaner	$ 40.00	Day	-
Crane	$ 1,000.00	Day	-
Heavy Equipment	$ 25,000.00	Lump sum	-
Analysis	Cost per Unit	Unit	
Water characterization	$ 270.00	Each	-
PCB solids/wipes	$ 100.00	Each	-
Priority pollutants	$ 1,161.60	Each	-
Disposal	Cost per Unit	Unit	
Debris incineration	$ 0.64	Pound	UDEQ data
Solids incineration < 3,000 BTU/pound	$ 0.33	Pound	UDEQ data
Liquids incineration	$ 0.22	Pound	UDEQ data
Water incineration	$ 0.16	Pound	UDEQ data
PCB water incineration	$ 0.21	Pound	UDEQ data
PCB water treatment	$ 0.22	Gallon	UDEQ data
Water landfilling	$ 0.01	Pound	UDEQ data
Drum waste incineration - RCRA	$ 0.50	Pound	UDEQ data

Table 2.2: Clean Harbors Clive - Basis for Per Unit Costs (continued)			
Disposal	Cost per Unit	Unit	Basis
Drum waste incineration - TSCA	$ 0.60	Pound	UDEQ data
RCRA waste landfill	$ 190.00	Ton	UDEQ data
Non-RCRA landfill	$ 60.00	$Yard^3$	UDEQ data
Miscellaneous	Cost per Unit	Unit	
Survey	$ 5,000.00	Lump sum	-
Closure certification	$ 40,000.00	Lump sum	-
Transportation	Cost per Unit	Unit	
Incineration	$ 500.00	Each	-
RCRA landfill	$ 500.00	Each	-
Non-RCRA landfill	$ 500.00	Each	-
Water	Cost per Unit	Unit	
Water	$ 0.01	Gallon	-
Transportation	$ 0.03	Gallon	-
Miscellaneous	$ 0.05	Gallon	-
Total	$ 0.08	Gallon	-

Table 2.3. Cost Estimate for Unit 33

Disposal/Treatment Option: Incineration									
Closure Activity	Quantity	Unit	Facility	Assumptions	Unit	Quantity	Unit	Cost/Unit	Total Costs
Inventory Disposal	118,000	lbs.	Grassy Mtn	-		59	tons	$ 190.00	$ 11,210.00
Inventory transportation	2.95	trips	Grassy Mtn	40,000	lbs./trip	-	-	$ 500.00	$ 1,475.00
Decontamination rinsate disposal	18,776	gallons	Aragonite	8.3	lbs./gal	155,840	lbs.	$ 0.16	$ 24,934.53
Water cost	18,776	gallons	-	-	-	-	-	$ 0.08	$ 1,549.02
Rinsate transportation	3.89602	-	Aragonite	40,000	lbs./trip	-	-	$ 500.00	$ 1,948.01
Labor - operators	15	days	Contractor	$ 77.38	hr.	8	hr./day	-	$ 9,285.60
Water analysis	15	each	--	-	-	-	-	$ 270.00	$ 4,050.00
Total									**$ 54,452.16**

Table.2.3. Cost Estimate for Unit 101

Disposal/Treatment Option: Incineration									
Closure Activity	Quantity	Unit	Facility	Assumptions	Unit	Quantity	Unit	Cost/Unit	Total Costs
Inventory Disposal (PCB Bulk Solids)	239,800	gallons	Aragonite	8.3	lbs./gal	1,990,340	lbs.	$ 0.33	$ 656,812.20
Inventory transportation	49.7585	trips	Aragonite	40,000	lbs./trip		-	$ 500.00	$ 24,879.25
Decontamination rinsate disposal	5,180	gallons	Aragonite	8.3	lbs./gal	42,994	lbs.	$ 0.16	$ 6,879.04
Water cost	5,180	gallons	-	-	-	-	-	$ 0.08	$ 427.35
Rinsate transportation	1.07485	-	Aragonite	40,000	lbs./trip	-	-	$ 500.00	$ 537.43
Labor - operators	10	days	Contractor	$ 77.38	hr.	8	hr./day	-	$ 6,190.40
Wipe sample analysis	20	each	-	-	-	-	-	$ 100.00	$ 2,000.00
Water analysis	1	each	-	-	-	-	-	$ 270.00	$ 270.00
Total									**$ 697,995.67**

Table.2.3.(cont.) Cost Estimate for Unit 102

Disposal/Treatment Option: Incineration									
Closure Activity	Quantity	Unit	Facility	Assumptions	Unit	Quantity	Unit	Cost/Unit	Total Costs
Inventory Disposal (PCB Bulk Solids)	46,200	gallons	Aragonite	8.3	lbs./gal	383,460	lbs.	$ 0.33	$ 126,541.80
Inventory transportation	9.5865	trips	Aragonite	40,000	lbs./trip		-	$ 500.00	$ 4,793.25
Decontamination rinsate disposal	7,600	gallons	Aragonite	8.3	lbs./gal	63,080	lbs.	$ 0.16	$ 10,092.80
Water cost	7,600	gallons	-	-	-	-	-	$ 0.08	$ 627.00
Rinsate transportation	1.577	-	Aragonite	40,000	lbs./trip	-	-	$ 500.00	$ 788.50
Labor - operators	10	days	Contractor	$ 77.38	hr.	8	hr./day	-	$ 6,190.40
Wipe sample analysis	20	each	-	-	-	-	-	$ 100.00	$ 2,000.00
Water analysis	1	each	-	-	-	-	-	$ 270.00	$ 270.00
Total									**$ 151,303.75**

Table.2.3. (cont.) Cost Estimate for Unit 105

Disposal/Treatment Option: Incineration									
Closure Activity	Quantity	Unit	Facility	Assumptions	Unit	Quantity	Unit	Cost/Unit	Total Costs
Inventory Disposal (PCB Bulk Solids)	60,000	gallons	Aragonite	8.3	lbs./gal	498,000	lbs.	$ 0.33	$ 164,340.00
Inventory transportation	12.45	trips	Aragonite	40,000	lbs./trip	-	-	$ 500.00	$ 6,225.00
Decontamination rinsate disposal	8,000	gallons	Aragonite	8.3	lbs./gal	66,400	lbs.	$ 0.16	$ 10,624.00
Water cost	8,000	gallons	-	-	-	-	-	$ 0.08	$ 660.00
Rinsate transportation	1.66	-	Aragonite	40,000	lbs./trip	-	-	$ 500.00	$ 830.00
Labor - operators	10	days	Contractor	$ 77.38	hr.	8	hr./day	-	$ 6,190.40
Wipe sample analysis	20	each	-	-	-	-	-	$ 100.00	$ 2,000.00
Water analysis	1	each	-	-	-	-	-	$ 270.00	$ 270.00
Total									**$ 191,139.40**

Table.2.3. (cont.) Cost Estimate for Unit 106

Disposal/Treatment Option: Incineration									
Closure Activity	Quantity	Unit	Facility	Assumptions	Unit	Quantity	Unit	Cost/Unit	Total
Inventory Disposal (PCB Bulk Solids)	2,357,384	gallons	Aragonite	8.3	lbs./gal	19,566,287	lbs.	$ 0.33	$ 6,456,874.78
Inventory transportation	489.1572	trips	Aragonite	40,000	lbs./trip			$ 500.00	$ 244,578.59
Decontamination rinsate disposal	8,000	gallons	Aragonite	8.3	lbs./gal	66,400	lbs.	$ 0.16	$ 10,624.00
Water cost	8,000	gallons						$ 0.08	$ 660.00
Rinsate transportation	1.66		Aragonite	40,000	lbs./trip			$ 500.00	$ 830.00
Labor - operators	30	days	Contractor	$ 77.38	hour	8	hrs./day		$ 18,571.20
Water sample analysis	30	each						$ 270.00	$ 8,100.00
Total									**$ 6,740,238.57**

Table.2.3. (cont.) Cost Estimate for Unit 106 West

Disposal/Treatment Option: Incineration									
Closure Activity	Quantity	Unit	Facility	Assumptions	Unit	Quantity	Unit	Cost/Unit	Total
Inventory Disposal (PCB Bulk Solids)	1,373,423	gallons	Aragonite	8.3	lbs./gal	11,399,411	lbs.	$ 0.33	$ 3,761,805.60
Inventory transportation	284.9853	trips	Aragonite	40,000	lbs./trip			$ 500.00	$ 142,492.64
Decontamination rinsate disposal	8,000	gallons	Aragonite	8.3	lbs./gal	66,400	lbs.	$ 0.16	$ 10,624.00
Water cost	8,000	gallons						$ 0.08	$ 660.00
Rinsate transportation	1.66		Aragonite	40,000	lbs./trip			$ 500.00	$ 830.00
Labor - operators	21	days	Contractor	$ 77.38	hour	8	hrs./day		$ 12,999.84
Water sample analysis	30	each						$ 270.00	$ 8,100.00
Total									**$ 3,937,512.08**

Table.2.3. (cont.) Cost Estimate for Unit 251

Disposal/Treatment Option: Incineration									
Closure Activity	Quantity	Unit	Facility	Assumptions	Unit	Quantity	Unit	Cost/Unit	Total Costs
Inventory Disposal (PCB Bulk Solids)	255,834	gallons	Aragonite	8.3	lbs./gal	2,123,422	lbs.	$ 0.33	$ 700,729.33
Inventory transportation	53	trips	Aragonite	40,000	lbs./trip	-	-	$ 500.00	$ 26,500.00
Decontamination rinsate disposal	9,000	gallons	Aragonite	8.3	lbs./gal	74,700	lbs.	$ 0.16	$ 11,952.00
Water cost	9,000	gallons	-	-	-	-	-	$ 0.08	$ 742.50
Rinsate transportation	2	-	Aragonite	40,000	lbs./trip	-	-	$ 500.00	$ 1,000.00
Labor - operators	30	days	Contractor	$ 77.38	hr.	8	hr./day	-	$ 18,571.20
Water analysis	6	each	-	-	-	-	-	$ 270.00	$ 1,620.00
Total									**$ 761,115.03**

Table.2.3. (cont.) Cost Estimate for Unit 255

Disposal/Treatment Option: Incineration									
Closure Activity	Quantity	Unit	Facility	Assumptions	Unit	Quantity	Unit	Cost/Unit	Total Costs
Decontamination rinsate disposal	8,000	gallons	Aragonite	8.3	lbs./gal	66,400	lbs.	$ 0.16	$ 10,624.00
Water cost	8,000	gallons	-	-	-	-	-	$ 0.08	$ 660.00
Rinsate transportation	1.66	-	Aragonite	40,000	lbs./trip	-	-	$ 500.00	$ 830.00
Labor - operators	10	days	Contractor	$ 77.38	hr.	8	hr./day	-	$ 6,190.40
Wipe sample analysis	20	each	-	-	-	-	-	$ 100.00	$ 2,000.00
Water analysis	1	each	-	-	-	-	-	$ 270.00	$ 270.00
Total									**$ 20,574.40**

Table.2.3. (cont.) Cost Estimate for Unit 535

Disposal/Treatment Option: Incineration									
Closure Activity	Quantity	Unit	Facility	Assumptions	Unit	Quantity	Unit	Cost/Unit	Total Costs
Inventory Disposal (PCB Bulk)	23,560	gallons	Aragonite	8.3	lbs./gal	195,548	lbs.	$ 0.33	$ 64,530.84
Inventory transportation	4.8887	trips	Aragonite	40,000	lbs./trip	-	-	$ 500.00	$ 2,444.35
Decontamination rinsate disposal	1,188	gallons	Aragonite	8.3	lbs./gal	9,860.4	lbs.	$ 0.16	$ 1,577.66
Water cost	1,188	gallons	-	-	-	-	-	$ 0.08	$ 98.01
Rinsate transportation	0.24651	-	Aragonite	40,000	lbs./trip	-	-	$ 500.00	$ 123.26
Labor - operators	16	days	Contractor	$ 77.38	hr.	8	hr./day	-	$ 9,904.64
Wipe sample analysis	42	each	-	-	-	-	-	$ 100.00	$ 4,200.00
Water analysis	3	each	-	-	-	-	-	$ 270.00	$ 810.00
Total									**$ 83,688.76**

Table.2.3. (cont.) Cost Estimate for Unit 604

Disposal/Treatment Option: Incineration									
Closure Activity	Quantity	Unit	Facility	Assumptions	Unit	Quantity	Unit	Cost/Unit	Total Costs
Decontamination rinsate disposal	5,000	gallons	Aragonite	8.3	lbs./gal	41,500	lbs.	$ 0.16	$ 6,640.00
Water cost	5,000	gallons	-	-	-	-	-	$ 0.08	$ 412.50
Rinsate transportation	1.0375	-	Aragonite	4,000	lbs./trip	-	-	$ 500.00	$ 518.75
Labor - operators	10	days	Contractor	$ 77.38	hr.	8	hr./day	-	$ 6,190.40
Wipe sample analysis	42	each	-	-	-	-	-	$ 100.00	$ 4,200.00
Water analysis	3	each	-	-	-	-	-	$ 270.00	$ 810.00
Disposal/Treatment Option: Landfill									
Equipment disposal	40,000	lbs.	Grassy Mtn	Steel pipe		20	tons	$ 190.00	$ 3,800.00
Equipment transportation	1	-	Grassy Mtn	40,000	lbs./trip			$ 500.00	$ 500.00
Total									**$ 18,771.65**

Table.2.3. (cont.) Cost Estimate for Soil Sampling

Closure Activity	Quantity	Unit	Facility	Assumptions	Cost/Unit	Total Costs
Supervision	160	hours	Contractor	1 month	$ 60.00	$ 9,600.00
Surveying	1	each	Contractor	-	$ 5,000.00	$ 5,000.00
Sampling labor	120	hours	Contractor	15 days	$ 77.38	$ 9,285.60
Soil analysis - phase 1	42	samples	-	-	$650.60	$ 27,325.20
Soil analysis - phase 2	611	samples	-	-	$ 385.75	$ 235,693.25
Total						**$ 286,904.05**

Table.2.3. (cont.) Cost Estimate for Miscellaneous Items

Closure Activity	Quantity	Unit	Facility	Cost/Unit	Total Costs
Electricity	6	months	Utah Power	$ 8,000.00	$ 48,000.00
Heavy Equipment Rental	1	each	Contractor	$ 25,000.00	$ 25,000.00
Total					**$ 73,000.00**

2.3 Schedule for Closure

As indicated in Section 1.6, the total time for closure of CHC (including submittal of closure certification) is estimated and 9 ½ months. Assuming that DWMRC is first notified of closure on January 1st, certification of closure is anticipated on or about October 15th of that same year.

Overall Closure Schedule for the Clive Facility	J	F	M	A	M	J	J	A	S	O
1. Notification of Closure to DWMRC and Tooele County	|									
2. Final receipt of containerized waste and mobilize		|							
3. Complete waste removal/decontamination of storage units		▒	▒	▒	▒	▒				
4. Decontamination of miscellaneous units			▒	▒						
5. Soils investigation/sampling/reseeding					▒	▒	▒			
6. Facility closed								|		
7. Closure certification to DWMRC and Tooele County										|
8. Notice to Tooele County Land Records										|

Closure Schedule: Unit 33 - Lamp Recycler	J	F	M	A	M	J	J	A	S	O
1. Final receipt of waste		|							
2. Waste removal		▒	▒							
3. Decontamination of containment and equipment			▒	▒						
4. Receipt of lab results					|					
5. Unit 33 closed								|		
6. Closure certification to DWMRC and Tooele County										|
7. Notice to Tooele County Land Records										|

Closure Schedule: Unit 101	J	F	M	A	M	J	J	A	S	O
1. Final receipt of waste		|							
2. Waste removal			▒							
3. Decontamination of containment and equipment			▒							
4. Receipt of lab results				|					
5. Unit 101 Bay G closed						|			
6. Closure certification to DWMRC and Tooele County										|
7. Notice to Tooele County Land Records										|

Closure Schedule: Unit 102	J	F	M	A	M	J	J	A	S	O
1. Final receipt of waste		|							
2. Waste removal			▒							
3. Decontamination of containment and equipment			▒							
4. Receipt of lab results				|					
5. Unit 102 closed						|			
6. Closure certification to DWMRC and Tooele County										|
7. Notice to Tooele County Land Records										|

Closure Schedule: Unit 105 - Thaw Shed	J	F	M	A	M	J	J	A	S	O
1. Final receipt of waste		|							
2. Waste removal		▒	▒							
3. Decontamination of containment and equipment			▒							
4. Receipt of lab results				|					
5. Unit 105 closed						|			
6. Closure certification to DWMRC and Tooele County										|
7. Notice to Tooele County Land Records										|

Closure Schedule: Unit 106 - Bulk Container Storage	J	F	M	A	M	J	J	A	S	O
1. Final receipt of waste		|							
2. Waste removal		▒	▒							
3. Decontamination of containment and equipment			▒	▒						
4. Receipt of lab results						|			
5. Unit 106 closed								|		
6. Closure certification to DWMRC and Tooele County										|
7. Notice to Tooele County Land Records										|

Closure Schedule: Unit 251 – Bulk Solids Tanks	J	F	M	A	M	J	J	A	S	O
1. Final Receipt of waste										
2. Waste removal										
3. Decontamination of containment and equipment										
4. Receipt of lab results										
5. Unit 251 closed										
6. Closure certification to DWMRC and Tooele County										
7. Notice to Tooele County Land Records										

Closure Schedule: Unit 255	J	F	M	A	M	J	J	A	S	O
1. Decontamination of containment and equipment										
2. Receipt of lab results										
3. Unit 255 closed										
4. Closure certification to DWMRC and Tooele County										
5. Notice to Tooele County Land Records										

Closure Schedule: Unit 535	J	F	M	A	M	J	J	A	S	O
1. Final receipt of waste										
2. Waste removal										
3. Decontamination of containment and equipment										
4. Receipt of lab results										
5. Unit 535 closed										
6. Closure certification to DWMRC and Tooele County										
7. Notice to Tooele County Land Records										

Closure Schedule: Unit 604	J	F	M	A	M	J	J	A	S	O
1. Decontamination of containment and equipment				▒						
2. Receipt of lab results					|					
3. Unit 604 closed						|				
4. Closure certification to DWMRC and Tooele County										|
5. Notice to Tooele County Land Records										|

Closure Schedule: Soil Sampling	J	F	M	A	M	J	J	A	S	O
1. Visual inspection					▒	▒				
2. Sampling of external areas, access road, and rail areas						▒				
3. Random sampling of internal non-paved areas						▒				
4. Inspection and sampling of paved areas inside fence							▒			
5. Survey and mark sampling grid points						▒	▒			
6. Receipt of lab results								|		

3.0 FINANCIAL ASSURANCE

3.1 Financial Assurance for Closure

Clean Harbors Clive, LLC, as the owner/operator of the CHC facility, is required to provide assurances that there will be funds available to close the facility at some time in the future. The purpose of these assurances is to guarantee that closure can be performed by a third party if for some reason Clean Harbors is unable to do so itself in the future when cost would be maximized. As specified by Section 2.2 of this attachment, the minimum dollar amount to be guaranteed, in 2023 dollars, is $ 17,998,827. This figure will be updated at least annually in response to inflation and as often as needed to reflect changes in the CHC facility.

Clean Harbors currently uses Closure Insurance as the financial assurance mechanism for the CHC facility. The current financial assurance documentation is maintained at the DWMRC office. CHC shall remain in compliance with the applicable provisions of the regulations for the financial assurance mechanism used for closure.

3.2 Financial Assurances for Post-Closure

As there are no land disposal units at CHC, there is no requirement for any post-closure care, hence no need for post-closure financial assurance.

3.3 Liability Requirements

CHC maintains liability insurance for sudden accidental occurrences as required by the rules cited and 2.P of the Permit. The certificate of insurance as required by R315-264-147 is maintained at the DWMRC office.

APPENDIX A

BUILDING AND EQUIPMENT SAMPLING PLAN

CLEAN HARBORS CLIVE, LLC

CLIVE, UTAH

1.0 INTRODUCTION

This Building and Equipment Sampling Plan describes sampling of rinse waters derived from decontamination of waste management units and pieces of equipment at CHC. The methods in this plan will be used to demonstrate that items in question have been sufficiently decontaminated that they may be declared "closed" under DWMRC authority, as well as RCRA, TSCA and HSWA, and be released from regulation by these programs. Samples of the rinse water from cleaning will be collected throughout closure. Rinse waters must meet the standards established 1.2.1.1.

This Plan outlines the sampling methods, procedures, and analytical protocols. Any proposed changes to this Plan must be prepared and submitted to DWMRC for approval, prior to actual sampling in accordance with Condition I.D.2 of the permit.

It is presumed that any spills of waste which occurred during the operation of CHC will be cleaned up at the time the spill occurred. This Plan may be used to determine whether such spills have been totally removed and if decontamination of equipment has been successful.

2.0 RATIONALE

This Building and Equipment Sampling Plan is intended to provide for the representative sampling of rinse water produced during the decontamination of specific items at CHC. If CHC demonstrates the structure or equipment has been decontaminated in accordance with the Sampling and Closure Plans and that the decontamination has been certified by CHC and an independent professional engineer in accordance with the permit, the structure or equipment may be released from regulation under RCRA and related Utah State law upon approval by the Director.

3.0 SAMPLING LOCATIONS

Samples will be obtained from the immediate area of the item being decontaminated and will represent only a single class of material or equipment. For example, during the cleaning of the interior of a piece of equipment, the sample will be obtained by catching a grab sample drained from the lowest point of the piece of equipment; for the exterior, however, the sample would be taken from the sump that caught the rinse water as it drained off the equipment. It is intended that samples represent only a single waste management unit (e.g., a single piece of equipment, or a single container management containment area). When auxiliary equipment such as forklifts from a single management unit, etc., is cleaned, several may be combined in one sample. Further, all hand tools and related small items in a particular waste management unit may be combined in one sample.

All samples taken will be grab samples, intended to represent the entire volume of the final rinse water used to clean an item. The bulk of the rinse water will be allowed to drain from the surfaces of the item being cleaned, and to collect in the sump or other sampling point, prior to sampling, to attempt to ensure a representative sample.

Samples will be placed in glass containers which will be placed in iced coolers for storage and transportation to the laboratory in accordance with the chain of custody procedures, minimum holding times and analytical procedures specified in Appendix D.

Samples will be taken from two types of locations: for interior cleaning, the sample will be taken from a drain line or pipe; for exterior cleaning, the sample will be taken from the sump where the rinse water collects. Wherever possible samples from interior cleaning will be taken by draining the rinse water directly into the sample container. Where it is not possible to drain the rinse water directly into the sample container, and for rinse waters contained in the sumps, samples will be obtained by a method such as dipping a clean glass jar into the sump, using a weighted bottle, or similar means. Any of the various methods described in SW-846 and WAP may be used. The goal of the sampling will be to obtain a representative sample, free from external contamination, from an area where the rinse naturally collects, and prior to its being vacuumed or pumped into temporary storage for eventual treatment or disposal.

4.0 TIME OF SAMPLING

Sampling will occur as soon as possible after the second rinse has been performed, and the bulk of the water has been allowed to drain from the item in question into secondary containment. As the closure of CHC will be a dynamic process, sampling will occur on a continuing basis over the closure period.

CHC will notify the Utah Department of Environmental Quality DWMRC x hours in advance of the anticipated times and dates for the sampling of the rinse water from the decontamination processes. DWMRC may take split samples of rinse water at their discretion.

5.0 CONSTITUENT ANALYSIS

All sample analyses will be conducted in accordance with the standards set by SW-846. QA/QC will be in accordance with the CHC Permit; Attachment I – WAP; Attachment 1, Appendix 1 – QAP; and SW-846. All laboratories that run analysis required by this Plan will be Utah-certified or NELAP-certified for the analytical method. Holding times and analytical methods are summarized in Appendix D. Appropriate methods listed in the WAP and/or equivalent EPA Clean Water Act methods may also be used.

6.0 SAMPLING PROCEDURE

The Sampling Procedure has been developed to result in samples representative of each "batch" (waters collected from an individual containment area) of final rinse water generated during the closure of CHC. All sampling will be arranged by the Closure Project Manager, who will coordinate sampling with DWMRC personnel. The sampling activities will be in accordance with the following procedures:

6.1 Planning the Sampling Event

Sampling must be anticipated as an on-going task, and not as a single event or short-term task. The following tasks will be addressed before the actual sampling event:

1. Sample containers will be prepared and labeled.

4. The designated personnel will gather all required equipment for the sampling events which may include but not be limited to:

a. Sampling cups, bailers, or sampling bottles.

b. Measuring Tape, if needed.

c. Ground Cloth, if needed to lay equipment on to prevent contamination.

d. Safety equipment.

e. Sample jars should be labeled to identify the sample number, and type of item or equipment being cleaned, date and time.

f. Sample vehicle: for transportation of the Sampling Team and the soil samples between the closure area and the laboratory. (Not necessarily motorized-may be a cart or dolly.)

g. Field Logbook: Information to be recorded in this book (required) will include, but is not limited to, the following:

   1) Project Title

   2) Sample Identification Number

   3) Sample Location

   4) Sample Type

   5) Sample Description (include any appropriate visual evidence of contamination)

   6) Date and time

   7) Sample collector

h. Supply of Kimwipes, deionized water and water bottles to be used for decontaminating sampling equipment between samples.

i. Copy of the Closure Plan WAP.

j. Each piece of equipment will be inspected when it is gathered. Any equipment repairs or part replacement will be completed at this time. All required equipment will be operational the day of sampling.

Actual Sampling Preparation (required)

1. Health and Safety -- Prior to leaving the laboratory, each piece of safety equipment must be checked for appropriateness and proper fit.

2. Field Sampling Equipment -- Sampling equipment will be decontaminated prior to use.

3. Sample containers -- Prior to sampling, sample containers will be rechecked to ensure that there is a full set. The sampling containers will be carried to the field in pre-iced chests.

4. Documentation Package -- The following list will be checked for the sampling event to ensure proper documentation:

   k. Field Logbook

   l. Sample Forms

m. Chain-of-Custody forms

n. Writing tools (pencil, pen, and permanent marker)

6.2 Sampling Plan

The Sampling Plan for each sampling event will be determined prior to sampling and will be based on the following considerations:

1. The Sampling Schedule specified by the Closure Project Manager.

5. Due to the individual nature of the samples being taken, and the nature of the sample site, a designated Sampling Route and Strategy will not be necessary.

6.3 Field Sampling Protocol

Grab samples will be obtained for analysis during each sampling event. The Sampling Team will return to the laboratory after the samples have been obtained and prepare them for shipping.

1. Each sample will be securely packaged and the necessary data from the field logbook will be transferred to the report sheets and placed in a shipping container.

2. Appropriate personnel will verify that all analytical request sheets specify the correct analysis, review the Chain-of-Custody forms, and sign the sheets before they are placed inside the cooler. Once all the items have been placed with the packaged sample containers, the cooler will be sealed with a custody seal and secured ready for shipment to the laboratory.

3. The analytical procedure to be performed on the samples will be total concentration parameters referenced in section 1.2.1.

6.4 Certificate of Completion

Each day the Sampling Team Leader will inform the Closure Project Manager of problems encountered during the sampling event or any deviations from the Sampling Procedures. DWMRC will also be kept informed on a weekly basis and certifications of all acceptable sample results (those demonstrating acceptable decontamination) will be submitted when Closure is certified. The certification will contain all relevant data.

APPENDIX B CONTAMINATED SOILS SAMPLING PLAN

CLEAN HARBORS CLIVE, LLC CLIVE, UTAH

1.0 INTRODUCTION

This Contaminated Soils Sampling Plan describes the sampling of soils in the vicinity of the CHC facility at closure. Operating units at CHC are concentrated in the SE Quarter of Section 36, T1S, R12W, Tooele County. Soil samples will be collected to investigate the possibility of contamination due to facility operation. A series of near-surface soil samples are proposed throughout Section 36, T1S, R12W Tooele County. Sampling will be combined with a review of the operating record and a visual examination of the area for obvious staining or deposits that could indicate contamination.

The soils beneath the waste containment areas will also be evaluated if, upon final closure, a review of the operating record or a close examination of the sumps and containment structures indicates cracks or other deterioration that could indicate a leak or loss of integrity. If a leak or loss of integrity in the containment is suspected, CHC may either collect core samples of the soil and/or concrete to determine if the subsoils are contaminated, or they may assume contamination, remove the concrete and soil, collect samples, and compare them to the EPA RSLs. If sampling confirms contamination, both concrete and soil will be removed as needed until all contamination is at or below the RSLs. If a unit had been previously certified close in accordance with the permit, the unit was not reactivated prior to closure, and a close examination of the sumps and containment during closure indicate no cracking or other deterioration that would indicate a leak or loss of integrity, this exercise does not have to be repeated.

Samples will be analyzed for parameters listed in R315-261-1092 (Appendix VIII). This Contaminated Soils Sampling Plan is intended to outline the procedure to determine sampling locations, methods and procedures, and analytical parameters.

The Contaminated Soils Sampling Plan describes the method for determining sample collection locations, concentrating on sampling soils in the vicinity of the facility, rail spurs, and haul roads used for waste transport into and out of the facility. A series of samples will be taken and analyzed using a numbered grid pattern, with actual locations determined by random methods.

In accordance with Condition I.D.2, the Director of DWMRC must approve any changes to the Contaminated Soils Sampling Plan prior to CHC conducting any sampling. The permit requires CHC to clean up any spills of waste at the time the spill occurred during the operation of facility. However, samples will be collected to verify that no contamination remains.

2.0 RATIONALE

The goal of this Contaminated Soils Sampling Plan is to examine the soils in the vicinity of CHC to detect the presence of contaminants known to be constituents of hazardous waste. Sampling points are chosen as specified in section 3.0 of this appendix. Random sampling will be combined with a thorough visual search of the facility, looking specifically for areas that appear to be contaminated.

3.0 SAMPLING LOCATIONS

In the selection of sampling locations, the extent of any geographical variation in contaminant levels is unknown. The goal of this Contaminated Soils Sampling Plan is to provide a representative picture of constituent levels in the vicinity of CHC, and to determine if CHC has

contributed any contamination. Rather than limiting the Contaminated Soils Sampling Plan to the facility proper, samples will be taken over areas within 300 feet of the facility and the main access road (See Figures I-C-1, I-C-2, I-C-3, I-C-4). Operating units at CHC are concentrated in the SE Quarter of Section 36, T1S, R12W, Tooele County. To provide the desired representative picture, three different sample protocols are used: one for the facility proper, and one for the area external to the facility, and one for the area surrounding the main access road and rail area. As described later in this Appendix, each of these three areas will be divided into grids, with each grid node numbered sequentially. Numbering will be re-started for each area. Using random number tables, or similar means, several grid nodes will be randomly chosen for sampling to determine if contamination exists.

Additional samples will be taken if any of these areas are found to be contaminated. All samples will be analyzed independently, and the results compared against the RSLs.

The initial random samples will be taken from the surface to a depth of four inches representing the interval.

In areas where samples cannot be obtained with soil sampling equipment, the sample will be collected as close to the designated location as possible. Changes in sampling location will be documented, including a description of the basis for the changed location.

3.1 Visual Inspection

Facility personnel will visually inspect the roadways, rail spur, sampling areas, unloading areas, and the area within 300 feet of all portions of the facility. Based on these visual observations, any soil surfaces that appear to be contaminated will be excavated and sampled to verify the samples do not exceed RSLs. Once these standards are verified, the excavation will be backfilled with clean soil.

For areas of CHC that appear to be uncontaminated, a simple random sampling strategy with be implemented see (See Figures I C 1, I C 2, I C 3, I C 4).

For areas of CHC that appear to be contaminated, these areas will be sampled, and analyzed for constituents identified in R315-261-1092, Appendix VIII. If concentrations of constituents exceed the RSLs the extent of contamination will be identified and removed. The excavated area will be backfilled with clean material.

Depending upon the size of the area, this approach may be more extensive than necessary. If the area is relatively small, the Closure Project Manager may elect to take a few samples equally spaced throughout the area, as sufficient to represent the visual contamination with coordination UDWMRC. This process will be repeated for each depth of soil removal until the sample analyses meet the RSL standard. If the excavated soil is proven analytically to meet the RSL standard, the uncontaminated soil will be backfilled into any excavated portions. Backfilling should not take place until all samples are at RSL standards.

The discrete samples from which the composite was made will also be retained. CHC may be required to analyze each individual sample, to localize the area of contamination, if determined necessary by DWMRC.

3.2 Random Samples -- Facility Proper -- Unpaved Areas

CHC proper measures approximately 1,200 square feet, although there are several irregularities in the facility boundary. A grid will be superimposed over the facility, with spacing of 100 feet by 100 feet, resulting in 169 grid nodes (see Figure I-C-2). Some of these nodes will fall over specific waste management units, while others will fall on parking, drives, or open areas. All nodes falling on waste units or paved areas will be discarded and adjacent location will be chosen and documented; the remainder - those nodes on unpaved areas - will be numbered sequentially. From these, a total of ten nodes will be randomly selected for sampling as described in 7.3 below.

Each grid node selected and sampled will be analyzed for the parameters listed, and the results compared to the RSL standard. If all parameters meet the RSL standard, then the area represented by that sample is declared clean. If the parameters do not meet the RSL standard, then a supplemental grid using 50-foot spacing will be imposed over the suspect grid node, extending one space (50 feet) in all directions. This 100-foot by 100-foot supplemental grid will contain nine grid points; all of these will be sampled and analyzed to determine the areal extent of contamination. If needed, this grid will be extended laterally until a sample is obtained that meets the RSL standard.

For grid nodes which test "positive," soil will be removed in vertical two-foot increments, and the area resampled until that node area meets RSL standard. Again, uncontaminated soils will be backfilled into any excavated area. Contaminated soil will be managed in accordance with the WAP.

3.3 Random Samples -- Facility Proper -- Paved Areas

For the paved areas of the facility, a thorough visual inspection will be made to check for visible contamination. Any found on concrete will be removed as described in the Closure Plan, Section 1.2.1.1 for "hard surfaces." Contamination of areas paved with asphalt will be excavated. Sampling and analysis will be conducted to confirm that the contamination had been successfully removed. Areas where the chromium was spilled during the trial burn must be sampled.

3.4 Random Samples -- External to Facility Proper

As discussed above, CHC measures roughly 1200 feet square, with several irregularities in the boundary. Extending this area 300 feet to each side yields an area of about 1800 feet square.

The grid that was originally superimposed over the facility proper will be extended to the outer area, again using a spacing of 100 feet by 100 feet, resulting in 361 grid nodes (see Figure I-C-3). The 169 nodes of the facility proper will be discarded, as they have already been considered, leaving 192 nodes in a square border surrounding the facility. Certain of these nodes will duplicate those of the Access Road investigation described in Section 3.5, below, and these will be discarded as well.

All remaining grids will be numbered sequentially. Of these grids, 12 will be randomly selected for sampling. As the entire grid is external to the facility and any roads, no grid node will fall on a paved or hard surface. If contamination is found, additional sampling will be conducted in the area to determine the extent of the contamination.

Sampling and analysis will proceed as described in Section 3.2. Areas found to be contaminated will be excavated and back-filled with clean soil. Contaminated soil will be managed in accordance with the WAP.

3.5 Random Samples -- Access Roads and Rail Areas -- All Areas

The main access road into CHC, along with the rail switchyard, measures approximately 400 feet wide by 1200 feet long. There are several irregularities in the boundary of this area. Extending this area 300 feet to each side, and 300 feet to the NE (the SW end abuts CHC itself) yields an area 1000 feet wide by 1500 feet long. A grid will be superimposed over this area, with spacing of 100 feet by 100 feet, resulting in 176 grid nodes (see Figure I-C-4). Some of these nodes will overlap parking, drives, or rail areas. All grids will be numbered sequentially. Of these grids, ten will be randomly selected for sampling. Any node selected that falls on a paved or hard surface will be moved to the nearest unpaved area, and the sample taken there.

Sampling and analysis will proceed as described in Section 3.2. Areas found to be contaminated will be excavated and back-filled with clean soil. All paved areas will be visually inspected as described in Section 3.3 and decontaminated as needed. Contaminated soil will be managed in accordance with the WAP.

3.6 Random Samples -- Soils Beneath Containment Areas

The containment areas at CHC are designed to completely contain any materials that are spilled or leaked during the operation of the facility. All such areas will be of Portland Cement concrete construction and will be coated to prevent liquid seepage. However, it is possible that the containment may be compromised by cracking or other damage to the concrete. Such cracking would be especially critical in the sumps that collect rainfall and any spilled material. Although all sumps will be regularly inspected and emptied as part of the facility operations plan, the sumps will not be totally cleaned until closure. Therefore, it is possible that cracks will exist that are not found until closure, in which case an evaluation of the soil beneath the area will be required.

As described in Section 1.8 of the Closure Plan, all concrete and soil within six inches of a crack where contamination is confirmed or assumed by CHC will be removed and managed as hazardous waste until the results of the analysis of underlying soils is obtained. Final disposition of these materials will depend upon the results of the analysis. Concrete will be broken for removal by jackhammers or other conventional means, and the broken concrete and soils will be shoveled into drums or gondolas for temporary storage.

The exposed area will then be sampled in accordance with TSCA regulation 40 CFR § 761 Subpart O. This is an EPA sampling method for sampling porous surfaces and is applicable for the sampling of small areas and thus is appropriate for selecting samples from areas that may be no more than one foot wide.

The discrete samples from which the composite was made will also be retained. CHC may elect to analyze each individual sample to localize the area of contamination.

3.7 Procedures for Soils Removal -- All Areas

As each grid is sampled and analyzed, the analytical results will be compared to the RSLs. Any grid with a value exceeding the RSLs is considered contaminated, and the soils represented by that grid will be removed to a depth of two feet. The grid will then be re-sampled and analyzed as before; if the soils still exceed the RSLs, another two feet will be removed. This process will continue until the analysis shows that the grid area is below RSL standards.

All excavations will be conducted with side slopes in conformance with OSHA standards. Consequently, the excavation will grow larger laterally as it is deepened, to account for both possible lateral as well as vertical spread of waste constituents. Once all contamination has been removed, the area will be filled with clean soil to the surrounding grade level.

Based upon the analytical results, several options are possible for disposal: disposal in a solid (non-hazardous) waste landfill; disposal in a hazardous waste landfill, in accordance with the Land Disposal Restrictions (LDR); and treatment (e.g., incineration or stabilization) to meet the LDR standards prior to disposal. All decisions on disposition of removed soils and concrete will be made after testing in accordance with the WAP and/or this Closure Plan.

4.0 TIME OF SAMPLING

Sampling will occur at two distinct times during closure of CHC. The visual inspection of the entire area will take place at the start of Closure, and any suspicious areas will be investigated concurrently with Closure activities. At least every month, the Closure Project Manager will re-inspect to see if there have been any spills or leaks during Closure. Regular inspections will be performed as scheduled in accordance with the operating permit and this closure plan, and each unit will be regularly inspected until that unit is finally closed. Finally, after all waste management units are closed at the facility, the Closure Project Manager will make a final visual inspection checking for spills that may have occurred during closure. All visual inspections will be documented in the operating record.

After all units at the facility are closed, the Permittee will commence random sampling procedures. These will take several months, mainly due to the wait for sample analyses. Any areas identified as contaminated will be promptly excavated and filled with clean soil.

DWMRC will be notified, in writing, of the anticipated time(s) and date(s) for all closure soil sampling event(s) discussed in this Appendix at least 14 days in advance. DWMRC will be notified of final schedules for sampling via telephone at least 72 hours in advance. DWMRC may take split samples of the soil samples at their discretion.

5.0 CONSTITUENT ANALYSIS

To document levels of contamination, the Permittee will follow the analytical procedures used for the background samples; namely, to analyze all samples for the total concentration of the 125 "priority pollutants" established by the U.S. EPA. The variety of constituents listed is extensive enough to provide for the detection of the most predominant and the most potentially hazardous constituents that may be in the waste materials received at CHC.

All analyses for which certification is possible will be conducted by a Utah-certified laboratory. All sample analyses will be conducted in accordance with the standards set by SW 846 or

equivalent EPA Clean Water Act methods. QA/QC will be in accordance with SW 846 or equivalent EPA Clean Water Act methods, and the procedures/protocol (Attachment 1 [WAP], if applicable) of the NELAP certified laboratory performing the analysis. Holding times and analytical methods in effect at the time of this submittal are summarized in Appendix D and/or the facility WAP. If there is a difference between the holding times/methods summarized in Appendix D and/or the facility WAP and holding times/methods in effect at the time of sampling for closure, the most current holding times/methods will be used.

6.0 COMPARISON TO ESTABLISHED BACKGROUND VALUES

As each set of analyses is completed, the results will be examined for any anomalies (a single sample that varies significantly from all others, for instance). Any anomalous sample will first be re-analyzed to rule out any laboratory error; if the anomaly still exists, another sample will be collected and analyzed in accordance with the Quality Assurance Plan in Appendix A of Attachment 1.

If the anomaly is resolved (which may be the acceptance of the initial value as true and accurate for a given location), then the sample results will be compared against the Background Levels established by the Background Soils Sampling Plan and UAC R315-101. If the sample value for any parameter is above the Background, then soil must be removed. If all parameters are at or below the Background, then the area is declared as no further action.

The Background Level for all constituents is the Mean value plus three Standard Deviations. At closure, any area yielding an analytical value below this Background Level for all constituents will be considered as clean, and no further soil removal or decontamination will be necessary.

An exception to the above standard has been established to account for BDL values in the background sampling. For a given constituent, if the Background Level calculated (Mean + 3 sigma) is less than the stated Detection Limit, then the Background Level shall be taken as the Detection Limit. This will prevent establishing Background Levels lower than the analytical methodology can reliably measure.

7.0 SOIL SAMPLING PROCEDURE

The goal of Soil Sampling Procedures is to collect representative soil samples. All soil sampling will be coordinated by the Closure Project Manager. The sampling activities will be in accordance with the following procedures.

7.1 Planning the Sampling Event

Pre-event Preparation -- The following tasks will be addressed before the day of the sampling event.

1. Sample containers will be prepared and labeled. Sample containers for all soil samples will be wide-mouth glass jars with a minimum capacity of approximately one quart or liter. Soils samples (or sub-samples) will have a weight of two to four pounds each. The jar lids will be lined with Teflon seals.

    a. Sample containers will also be available for water samples, should sampling of ground or surface water become necessary. Samples for metals analysis will be at least 500 ml in

volume and stored in glass jars. Samples for any organic analyses, except as noted below, will be at least one liter in volume and will also be stored in glass jars. Samples for purgeable organics will be placed in three, 40 ml glass vials and filled so that there is zero headspace in the vials. All container lids for water samples shall be lined with Teflon (R) seals.

b. No field blanks will be required when sampling of soils occurs. Both field and trip blanks will be prepared and used if it should become necessary to sample ground or surface waters. The requirements of SW-846 will be followed in the preparation and handling of any such blanks.

6. The designated personnel will gather all required equipment for the sampling event which may include but not be limited to:

   a. Soil-Sampling Hand Spade or Auger, or Mechanized Auger

   b. Soil Sampling Knife

   c. Measuring Tape

   d. Ground Cloth

   e. Safety equipment

   f. Sample jars should be labeled to identify the sample number, depth, and type.

   g. Sample vehicle: for transportation of the Sampling Team and the soil samples between the closure area and the laboratory.

   h. Field Logbook: Information to be recorded in this book will include, but is not limited to, the following:

      1) Project Title

      2) Sample Identification Number

      3) Sample Location

      4) Sample Type

      5) Sample Description (include any appropriate geologic terms and any visual evidence of contamination)

   i. Supply of Kimwipes^{TM}, deionized water and water bottles to be stored in the laboratory for decontamination.

   j. Copy of the CHC Closure Plan and this Appendix.

   k. Each piece of equipment will be inspected when it is gathered. Any equipment repairs or part replacement will be completed at this time. All required equipment will be operational the day of sampling.

Day of Sampling Preparation

1. Health and Safety -- Prior to leaving the laboratory, each piece of safety equipment must be checked for appropriateness and proper fit.
2. Field Sampling Equipment -- Equipment will be decontaminated prior to use in the field.
3. Sample containers -- Prior to sampling, sample containers will be rechecked to ensure that there is a full set. The sampling containers will be carried to the field in pre-iced chests.
4. Documentation Package -- The following list will be checked for the sampling event to ensure proper documentation:
    a. Field Logbook
    b. Checklist for sampling protocol
    c. Chain-of-Custody forms
    d. Analytical request form
    e. Writing tools (pencil, pen, and permanent marker)
5. Vehicle Loading -- The designated sampling vehicle will be loaded so that each piece of equipment is readily available during soil sampling.
6. Cooler and ice.

7.2 Sampling Plan

The plan for the soil sampling event will be determined prior to sampling and will be based on the following considerations:

1. The Soil Sampling Schedule specified by the Closure Project Manager.
2. Based upon the procedures specified in this Plan, a designated Sampling Route and Strategy will be formulated to allow a smooth and logical progression of sampling.

7.3 Field Sampling Protocol

The samples obtained for analysis during a sampling event will be representative of the top four inches of the soil profile. The Sampling Team will return to the laboratory after the samples have been obtained and prepare them for shipping. Soil samples will be taken by one of several methods, depending upon equipment availability. Samples may be taken using shovels, trowels, or Shelby push-tubes.

1. As the soil is being removed for sampling, it will be placed upon a clean ground cloth, or placed directly into the sample container.
2. After each sample is obtained from a given location, all tools and instruments that may have contacted the soil, as well as the ground cloth, will first be brushed or wiped clean of any loose soil or other obvious contamination. They will then be wiped with disposable toweling, to remove any visible traces of contamination, thoroughly wiped with toweling wetted with deionized water, and finally rinsed with deionized water, to ensure that they are

decontaminated. Solvent rinses, such as Acetone or Hexane, will not be taken into the field for decontamination purposes, as their presence could affect sample results.

3. Each soil sample will be securely packaged and the necessary data from the field logbook will be transferred to the report sheets and placed in a shipping container.
4. Appropriate personnel will verify that all analytical request sheets specify the correct analysis, review the Chain-of-Custody forms, and sign the sheets before they are placed inside the cooler. Once all the items have been placed in the packaged sample containers, the cooler will be sealed with a custody seal and secured ready for shipment to the laboratory.
5. The analytical procedure to be performed on the samples will be total concentration of the 125 "priority pollutants," as well as TOC, TOX, Oil and Grease, and cyanides.

7.4 Certification of Completion

The Sampling Team Leader will notify the Closure Project Manager that the scheduled sampling event has been completed. This will include problems encountered during the sampling event or any deviations from the Soil Sampling Procedures. DWMRC will also be notified of the beginning of each phase of sampling. A report will be submitted within 60 days following the completion of sampling to DWMRC, describing any cleanup efforts undertaken and containing the results.

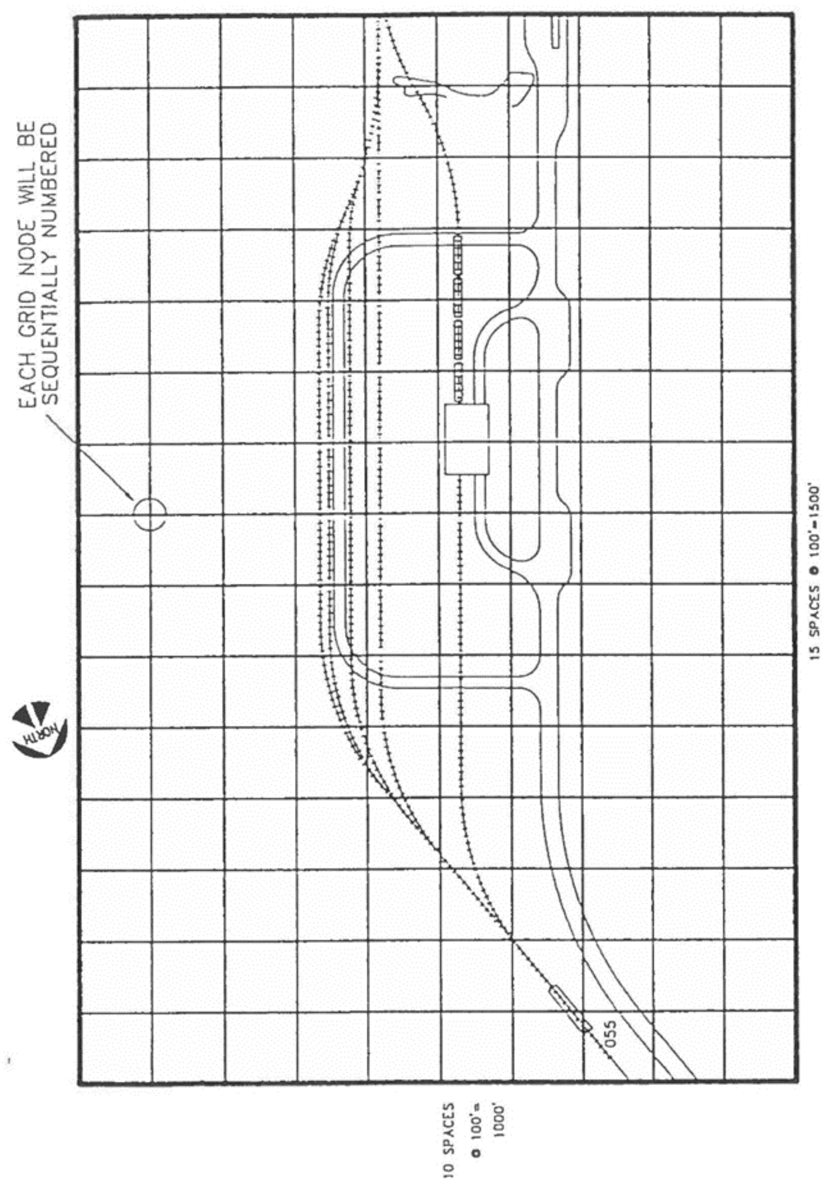

FIGURE I-C-4
SOILS SAMPLING GRID
ACCESS ROADS AND RAIL AREAS (TYP)
(REFER TO APPENDIX I-C, SECTION 3.5)
CLOSURE OF THE
CLIVE INCINERATION FACILITY

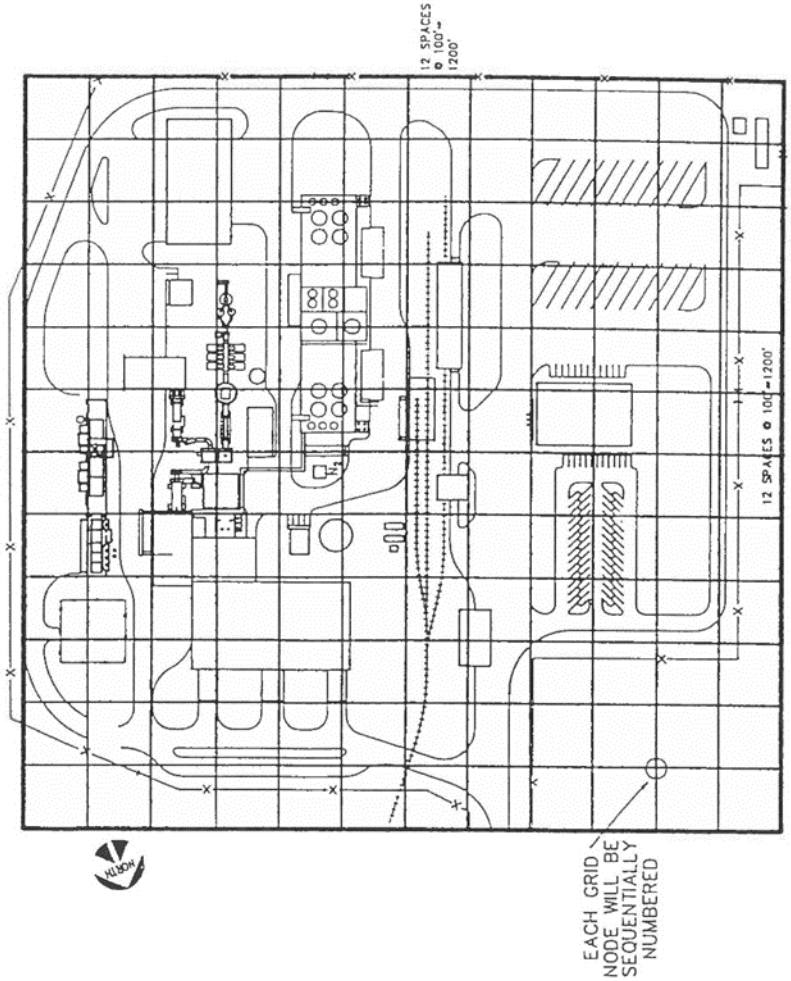

FIGURE I-C-2
SOILS SAMPLING GRID
FACILITY PROPER (TYP)
(REFER TO APPENDIX I-C, SECTION 3.2)
CLOSURE OF THE
CLIVE INCINERATION FACILITY

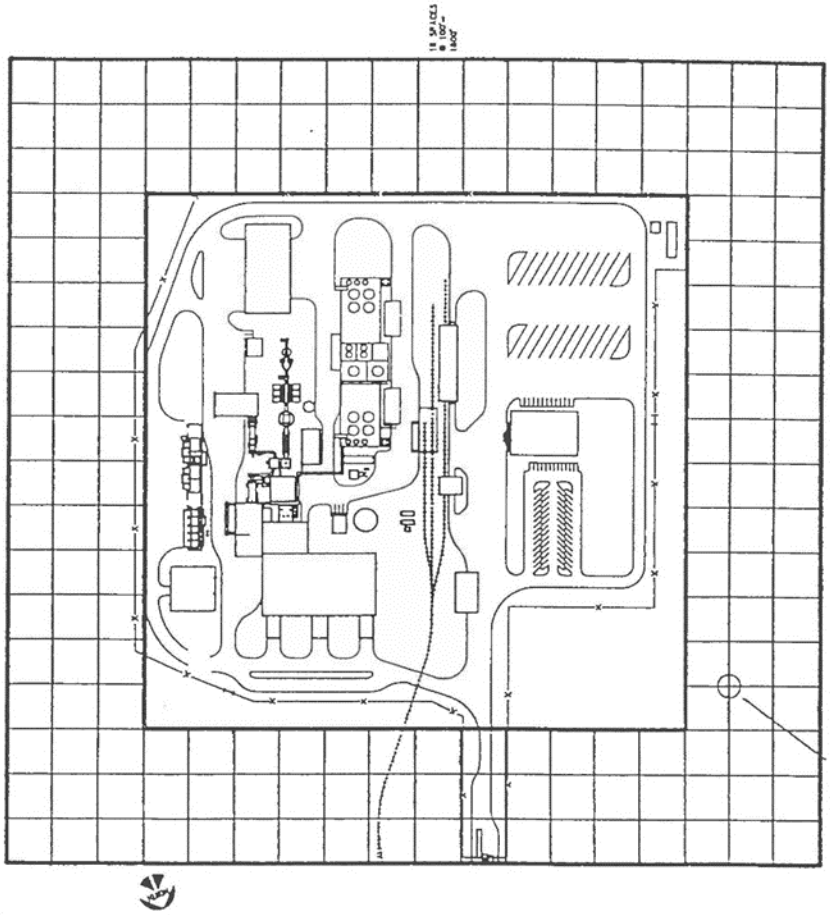

FIGURE I-C-3
SOILS SAMPLING GRID
EXTERNAL TO THE FACILITY PROPER (TYP)
(REFER TO APPENDIX I-C, SECTION 3.4)
CLOSURE OF THE
CLIVE INCINERATION FACILITY

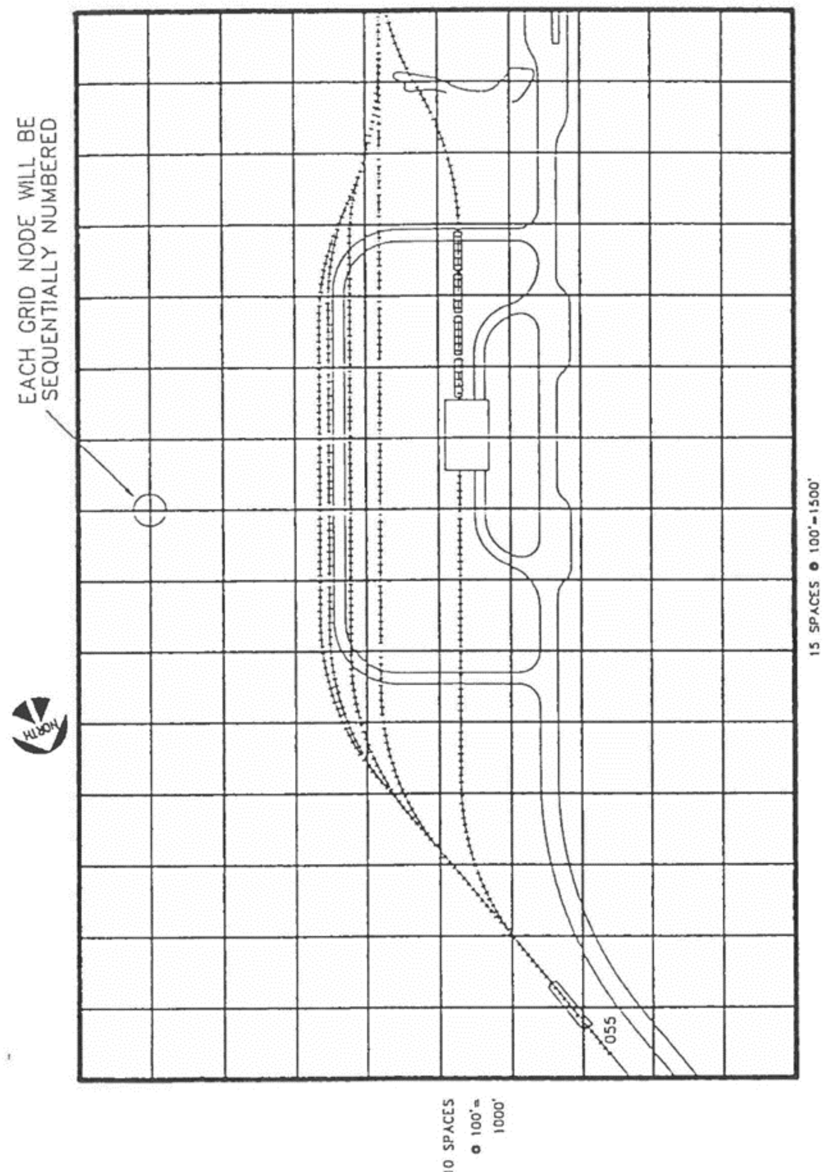

FIGURE I-C-4
SOILS SAMPLING GRID
ACCESS ROADS AND RAIL AREAS (TYP)
(REFER TO APPENDIX I-C, SECTION 3.5)
CLOSURE OF THE
CLIVE INCINERATION FACILITY

APPENDIX C

PRIORITY POLLUTANTS LIST

(FROM 40 CFR PART 122, APPENDIX D, TABLES II AND III)

Priority Pollutants List from 40 CFR Part 122, Appendix D

Table II - Organic Toxic Pollutants in Each of Four Fractions in Analysis by Gas Chromatography/Mass Spectroscopy (GC/MS)

Volatiles

1V acrolein	9V chloroethane	17V 1,2-dichloropropane	24V tetrachloroethylene
2V acrylonitrile	10V 2-chloroethylvinyl ether	18V 1,3-dichloropropylene	25V toluene
3V benzene	11V chloroform	19V ethylbenzene	26V 1,2-trans-dichloroethylene
5V bromoform	12V dichlorobromomethane	20V methyl bromide	27V 1,1,1-trichloroethane
6V carbon tetrachloride	14V 1,1-dichloroethane	21V methyl chloride	28V 1,1,2-trichloroethane
7V chlorobenzene	15V 1,2-dichloroethane	22V methylene chloride	29V trichloroethylene
8V chlorodibromomethane	16V 1,1-dichloroethylene	23V 1,1,2,2-tetrachloroethane	31V vinyl chloride

Acid Compounds

1A 2-chlorophenol	4A 4,6-dinitro-o-cresol	7A 4-nitrophenol	10A phenol
2A 2,4-dichlorophenol	5A 2,4-dinitrophenol	8A p-chloro-m-cresol	11A 2,4,6-trichlorophenol
3A 2,4-dimethylphenol	6A 2-nitrophenol	9A pentachlorophenol	

Base/Neutral

1B acenaphthene	13B bis (2-ethylhexyl) phthalate	25B dimethyl phthalate	37B indeno(1,2,3-cd) pyrene
2B acenaphthylene	14B 4-bromophenyl phenyl ether	26B di-n-butyl phthalate	38B isophorone
3B anthracene	15B butylbenzyl phthalate	27B 2,4-dinitrotoluene	39B napthalene
4B benzidine	16B 2-chloronaphthalene	28B 2,6-dinitrotoluene	40B nitrobenzene
5B benzo(a)anthracene	17B 4-chlorophenyl phenyl ether	29B di-n-octyl phthalate	41B N-nitrosodimethylamine
6B benzo(a)pyrene	18B chrysene	30B 1,2-diphenylhydrazine (as azobenzene)	42B N-nitrosodi-n-propylamine
7B 3,4-benzofluoranthene	19B dibenzo(a,h)anthracene	31B fluroranthene	43B N-nitrosodiphenylamine
8B benzo(ghi)perylene	20B 1,2-dichlorobenzene	32B fluorene	44B phenanthrene
9B benzo(k)fluoranthene	21B 1,3-dichlorobenzene	33B hexachlorobenzene	45B pyrene
10B bis(2-chloroethoxy) methane	22B 1,4-dichlorobenzene	34B hexachlorobutadiene	46B 1,2,4-trichlorobenzene
11B bis(2-chloroethyl) ether	23B 3,3′-dichlorobenzidine	35B hexachlorocyclopentadiene	
12B bis(2-chloroisopropyl) ether	24B diethyl phthalate	36B hexachloroethane	

Pesticides

1P aldrin	8P 4,4′-DDE	15P endrin aldehyde	22P PCB-1248
2P alpha-BHC	9P 4,4′-DDD	16P heptachlor	23P PCB-1260
3P beta-BHC	10P dieldrin	17P heptachlor epoxide	24P PCB-1016
4P gamma-BHC	11P alpha-endosulfan	18P PCB-1242	25P toxaphene
5P delta-BHC	12P beta-endosulfan	19P PCB-1254	
6P chlordane	13P endosulfan sulfate	20P PCB-1221	
7P 4,4′-DDT	14P endrin	21P PCB-1232	

Table III - Other Toxic Pollutants (Metals and Cyanide) and Total Phenols

Antimony, Total	Chromium, Total	Nickel, Total	Zinc, Total
Arsenic, Total	Copper, Total	Selenium, Total	Cyanide, Total
Beryllium, Total	Lead, Total	Silver, Total	Phenols, Total
Cadmium, Total	Mercury, Total	Thallium, Total	

APPENDIX D

HOLDING TIMES AND ANALYTICAL METHODS

Summarized from SW-846

Table I: Soil Sample Preservation and Holding Times

Parameter	***Method[1]***	***Container***	***Holding Time***
Volatiles	SW 8260B	4 oz glass	14 days
Semi-Volatiles (BNA)	SW 8270C	32 oz glass*	7 days/40 days
Organochloride Pesticides	SW8081A	32 oz glass*	7 days/40 days
PCBs	SW 8082	32 oz glass*	7 days/40 days
Herbicides	SW 8151A	32oz glass*	7 days/40 days
Organophosphorus Pesticides	SW 8141A	32 oz glass*	7 days/40 days
Metals (Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn)	SW 6010B	32 oz glass**	6 months
Mercury	SW 7471A	32 oz glass**	28 days
Cyanide	SW 9010B/SW 9014	32 oz glass**	NA
Oil & Grease	SW 9071A	32 oz glass**	NA
Phenols	SW 9065	32 oz glass**	NA
[1] Equivalent EPA Clean Water Act methods or the SW-846 method for liquids or solids may be used even if not shown on this list.			
All containers are glass with Teflon liner in the lid. * Used for all organic parameters, except volatiles. ** Used for all inorganic analytes. All samples preserved at 4^{o} C.			