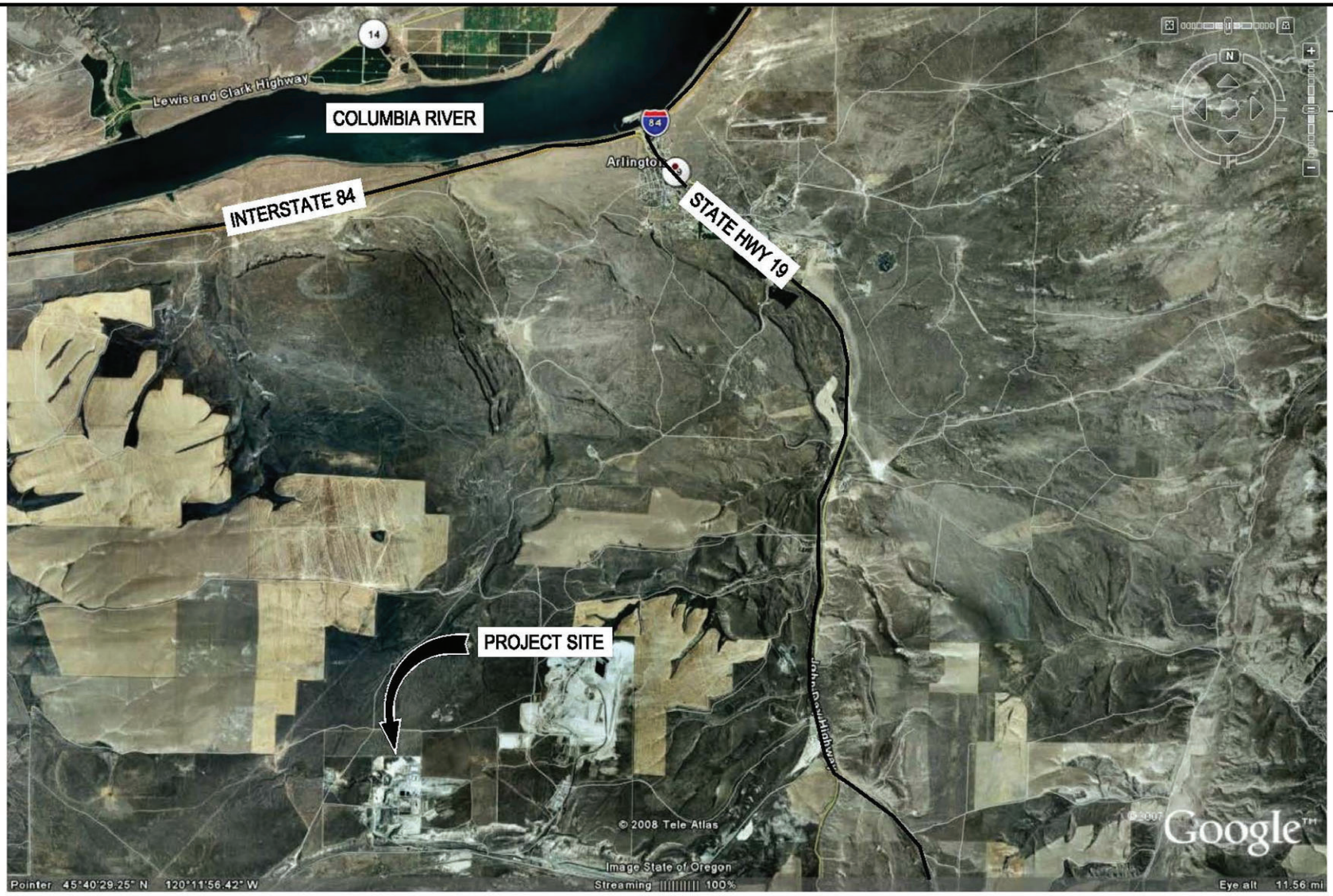
Figure 1 - Site Location Map

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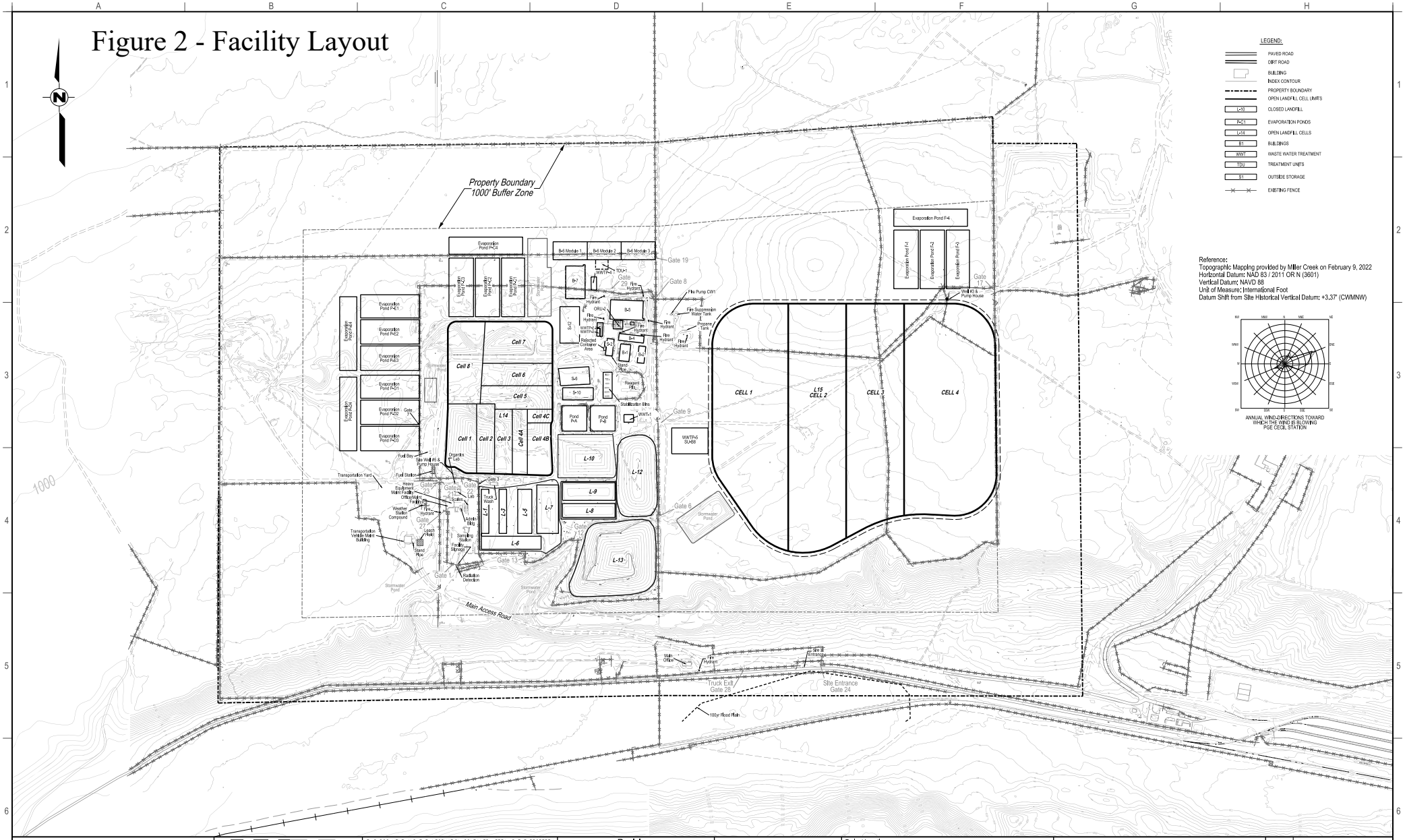
|---|---|---|---|---|---|
| SCS ENGINEERS<br>Environmental Consultants and Contractors<br>2405 140th Avenue NE, Suite 107<br>Bellevue, Washington 98005<br>(425) 746-4600 FAX: (425) 746-6747 | | PROJECT NO. 01200266.04 | DES BY LEL | FACILITY LOCATION MAP<br>CHEMICAL WASTE MANAGEMENT OF THE NORTHWEST, INC<br>ACDP MODIFICATION APPLICATION | DATE November 2019 |
| | | SCALE N.T.S. | CHK BY EMS | | FIGURE 1 |
| | | CAD FILE FIGURE 1 | APP BY PSS | | |

# Figure 2 - Facility Layout




250 0 250 500
SCALE IN FEET

WASTE MANAGEMENT



| Revisions | | | |
|---|---|---|---|
| No. | Description | Date | By |
| | | | |
| | | | |

Approved By: Dave Rettell
Checked By: Ben Arata
Drawn By: Bullseye Design Services, Inc.

Project Location:
Chemical Waste Management
Of the Northwest, Inc.
Arlington, Oregon

Part B Permit - Figure 1-1

Site ID: OR05 - 2236
Scale: 1" = 500'
Drawing No. 1-1
Date: November 2022

Or05_Overall Site Plan 2022.dgn 11/9/2022 1:21:30 PM

# Approval Attachment 1a
# Closure/ Post-Closure Plan

(Application Appendix H, Received by U.S EPA December 1, 2022)

Approval for Commercial Disposal of Polychlorinated Biphenyls
Chemical Waste Management of the Northwest, Inc.
Arlington, Oregon
U.S. EPA ID: ORD089452353

U.S. Environmental Protection Agency, Region 10
Seattle, Washington

# APPENDIX H
# Closure/ Post-Closure Plan

For

Chemical Waste Management of the Northwest, Inc.

*Received by EPA Region 10 on December 1, 2022*

*Appendix to CWMNW's final TSCA PCB application*

# Closure/Post-Closure Plan
For
Chemical Waste Management of the Northwest, Inc.

## Arlington Facility • ORD 089 452 353
17629 Cedar Springs Lane
Arlington, Oregon

## Attachment Document No. 5

This document issue Pending by the
Oregon Department of Environmental Quality

# 1 INTRODUCTION

The Chemical Waste Management of the Northwest, Inc. (CWMNW) Arlington Facility is a hazardous waste treatment, storage, and disposal (TSD) facility located on an approximate 1,288-acre parcel of property. The property is owned by CWMNW. The facility is located approximately 12 miles by road from the town of Arlington, Oregon. This document is to ensure compliance with all requirements of 40 CFR 264.110.

## 1.1 Purpose

- To identify steps necessary to perform partial and/or final closure of the facility; and
- To provide a schedule of closure for each hazardous waste management unit.

# 2 CLOSURE POLICIES AND PRACTICES

The *Closure/Post-Closure Plans* are based on the following policies and practices:

- A copy of the approved *Closure/Post-Closure Plans*, as revised, will be maintained at the site until closure is completed.
- CWMNW has been granted extensions of the 180-day closure timeframe required by 40 CFR 264.113(b), approved timeframes for each unit are contained in Table 5-3.
- As required by 40 CFR 264.111(b), CWMNW will take all necessary steps to prevent the occurrence of threats to human health and the environment during and after closure of the facility.
- Sequential closure of the hazardous waste management units or operations will be followed for closing the entire facility. The processing of the hazardous wastes within the facility and individual waste management units will be performed using the same procedures that normally would be used if the facility were not being closed. A discussion of the sequential steps in closing the various waste management units and operations is provided in this plan.
- It is intended that closure will be performed by trained CWMNW technicians familiar with the various processing units. However, facility closure cost estimates and associated financial assurance mechanisms will be based on third party costs.
- Pursuant to 40 CFR 264.114, landfills will be operated to provide sufficient reserve capacity for disposal of solid and stabilized materials during closure of the individual units and final closure of the facility.
- All RCRA storage and treatment tanks and associated equipment, piping, and instrumentation will be decontaminated and recycled as scrap, or sold as a commodity.
- All contaminated concrete will be removed and disposed of in an on-site RCRA landfill following analytical to verify LDR per 40 CFR 268.40, or macro/micro encapsulated and disposed in the RCRA landfill.
- Uncontaminated materials will be recycled as appropriate.
- All metals will be sold as scrap or sold as a commodity.
- Former hazardous waste management unit areas (except those sites where new units are to be located) will be contoured and revegetated to prevent ponding and wind erosion, pursuant to 40 CFR 264.310.
- Soil sampling and analysis will be conducted in accordance with the soil sampling plan presented in Appendix A.
- Based on maximum depths of liquid in the impoundments and the net evaporation rate for the facility, it is estimated that approximately 36 months will be required before stabilization of residues and closure of the waste impoundments can commence.
- The groundwater monitoring (GWM) program established for the operating facility will be maintained during the closure period for all applicable waste management units.

- Pursuant to 40 CFR 264.115, when closure is completed, CWMNW will submit to the DEQ, certification both by CWMNW and an independent professional engineer registered in Oregon that closure of the facility has been conducted in accordance with the specifications contained in this Closure Plan.
- The closed facility will be protected by perimeter fencing.

# 3 WASTE MANAGEMENT UNITS AND CLOSURE PROCEDURES

## 3.1 Regulatory Requirements

Owners or operators of hazardous waste management facilities are required to have a *Closure Plan* that describes how and when the facility will be partially closed (if applicable) and finally closed. This plan must identify the maximum extent of facility operations that will be unclosed during the life of the facility and how the requirements of 40 CFR Part 264, Subpart G (general and unit specific closure requirements) will be met. Also, a closure schedule for each waste management unit and final closure of the facility must be provided. The closure performance standard established by 40 CFR 264.111 requires that the owner or operator close the facility in a manner that:

- Minimizes the need for further maintenance; and
- Controls, and minimizes or eliminates, to the extent necessary to protect human health and the environment, the post closure escape of hazardous wastes, waste constituents, leachate, contaminated rainfall, or waste decomposition products to the groundwater, surface waters, or the atmosphere.

This *Closure Plan* for CWMNW describes the steps that will be undertaken to close existing and planned individual waste management units as well as the entire facility. Based on current facility development plans and permitted units, Table 5-1 represents the estimate of airspace required for closure materials for all permitted units during the lifetime of the facility.

Ground-water monitoring, leachate collection, and run-on and run-off control for each unit being closed will remain in place until each unit has reached final closure and is moved into Post Closure status. Ground-water monitoring, leachate collection, and run-on and run-off control during the post Clouse period will continue as set forth in Attachment #7 – *Groundwater Monitoring Plan*

## 3.2 Amendment of Closure/Post Closure Plan

CWMNW will submit a written notification of or request for a permit modification to authorize a change in the approved closure plan in accordance with the applicable procedures in parts 124 and 270. The written notification or request will include a copy of the amended closure plan for review or approval by the Regional Administrator.

CWMNW has included alternate closure time frames in Table 5-3 of this plan requests the Regional Administrator to apply alternative requirements to a regulated unit under § 264.140(d)

## 3.3 Closure Procedures

Waste management units at CWMNW described in this *Closure Plan* are contained within the Part B Permit.

Closure of the various waste storage, process, and treatment units includes the following common procedures:

- Discontinue receiving hazardous waste
- Treat and/or remove inventory via normal sequential steps
- If necessary, decontaminate non-waste handling structures, tanks, and equipment and

- Salvage all waste management equipment (e.g., tanks, wiring, piping, and valves) and physical structures (e.g., buildings). These items will be sold as scrap or a commodity and removed from the site. All contaminated concrete will be removed and disposed of in an on-site RCRA landfill following analytical to verify LDR per 40 CFR 268.40, or macro/micro encapsulated prior to disposal in the RCRA Landfill.
- Uncontaminated concrete structures and foundations will be sent off-site for recycling as appropriate
- Decontaminate closure equipment; and
- Dispose of decontamination fluids and contaminated soils meeting LDR standards into waste impoundments and active landfill L-14 or L-15, respectively. Landfills based on compliance with LDR for RCRA codes associated with the equipment.,. Wash water and rinsate will also be evaporated or stabilized in-place for eventual placement in the active landfill following analytical to confirm LDR compliance.

Container storage units will be decontaminated by sweeping, washing or abrasive cleaning to remove any surface residues, if necessary. Any steel portions will be characterized and decontaminated or disposed of as hazardous debris. Soils below and or surrounding the units will be inspected, sampled, analyzed and if necessary, disposed of in the facilities final landfill unit. The disturbed area will be backfilled to final grade level.

Stabilization process equipment will be decontaminated, if necessary and removed from the facility or for reuse or dismantled and disposed of in an on-site landfill cell. Waste residue from the stabilization area will be removed and treated/disposed as required.

All tanks and ancillary equipment will be emptied of residues, the internal surfaces of the wastewater tanks will be scraped, and rinsed, the tanks will be cut up and or crushed and disposed in the facility's final landfill unit or macro /micro encapsulated. Prior to landfill all residue from the cleaning process will be characterized and managed per the requirements of 268.40. based on site knowledge of potential contamination.

Surface Impoundments

The closure steps for the evaporation ponds will include the following:

- Discontinue receiving waste
- Reduce inventory through evaporation
- Stabilize remaining liquid and sludges to meet LDR standards;/characterize the residue for compliance with F039
- Remove and dispose stabilized waste residues after determining compliance with F039 LDR
- The liner system from the evaporation ponds will be removed and Macro encapsulated
- Underlying soils will be tested for conformance with LDR under the F039 code, following verification of waste meeting treatment standards/LDR, soils will be disposed of in the active onsite landfill L-14 or L-15
- Perform soil sampling program as appropriate; and
- Contour area.

**Notification of partial closure and final closure.**
CWMNW will notify the Regional Administrator in writing at least 60 days prior to the date on which the closure of a surface impoundment, waste pile, land treatment or landfill unit, or final closure of a facility will begin.

The site will initiate closure once the remaining landfill capacity is consumed, and there are no plans for further expansion. All wastes at the facility will be treated, removed from the site or disposed of on-site or off -site within 90 days after receiving the final volume of waste. The facility will be closed in stages as each

unit approached capacity, closure activities for individual units and final site closure will be completed in accordance with the timeframes outlined in Table 5-3 following receipt of the final volume of waste.

In the following sections, specific closure procedures, dimensions, and capacities are described for each of the waste management units or operations at CWMNW. Included is the estimated time to close each unit.

### 3.4 Remaining Structures

At final closure, the following will remain on site:

- Scales,
- Laboratory,
- Receiving building, maintenance shops,
- Sampling station,
- Transportation maintenance building
- Employee locker and rest rooms.
- Truck Wash
- Storage Building S-2
- Storage Building B-1
- Storage Building B-3

#### 3.4.1 Remaining Structures Closure Process

This section covers the steps that will be used to achieve decommissioning and or closure of the above structures. All hazardous unloading areas, the building structures (i.e, walls, ceilings, and roofs) the air pollution control (APC) equipment and the concrete slabs will be decommissioned through decontamination. The structural building elements, APC equipment and concrete slabs, where possible will be decontaminated by sweeping, washing or abrasive cleaning. These structures are only subject to superficial contamination, verification of decontamination will be accomplished by visual inspection. All uncontaminated and decontaminated scrap materials that will not remain on site will be sent off site for recycling. Any accumulated water from the washing of the buildings or structures will be collected and analyzed for constituents of concern. All contaminated concrete will be removed and disposed of in an on-site RCRA landfill following analytical to verify LDR per 40 CFR 268.40, or macro/micro encapsulated prior to disposal in the RCRA Landfill. All spent wash waters will be characterized through analysis for proper disposal. All hazardous waste samples in the laboratory will be removed and properly disposed of. The lab holding tank will be pumped and liquids will be managed appropriately per 40 CFR 268.40. The truck wash will be pumped, all wash water will be analyzed and disposed of appropriately per 40 CFR 268.40.

### 3.5 Wastewater Treatment Units

Bulk storage tanks in the wastewater treatment units are used for storage of bulk aqueous wastes prior to and following processing through the wastewater treatment units. Processing tanks are used for processing of aqueous wastes.

**Closure Procedures**. The bulk liquid storage and wastewater treatment tanks will be closed per procedures outlined above and liquids volumes will be evaporated in the on-site ponds. All contaminated concrete will be removed and disposed of in an on-site RCRA landfill following analytical to verify LDR per 40 CFR 268.40, or macro/micro encapsulated prior to disposal in the RCRA Landfill, uncontaminated materials will be recycled as appropriate. Tanks and associated piping and equipment will be decontaminated, dismantled, and recycled as scrap or sold as a commodity.

**Maximum Inventory.** Maximum Inventory for Wastewater Treatment Units are as follows:

- WWTP-1 109,890 gallons
- WWTP-2 405,687 gallons
- WWTP-3 398,214 gallons
- WWTP-4 336,792 gallons
- WWTP-5 350,587 gallons
- OWS-1 101,634 gallons

**Schedule.** Closure of the bulk liquid waste storage and wastewater treatment tanks shall be in accordance 40 CFR 264.113 The unit's closure timeframe starts once the facility has completed final treatment of all onsite liquid wastes in the unit.

**Closure Process** - WWTP tanks will remain in place and operated to treat leachate form the landfill/landfills as the remaining liquids within the landfills are captured during the post-closure period. Under this scenario, the RCRA rands would be closed once the amount of liquid entering the leachate collections systems no longer justifies the maintenance of the tanks.

### 3.6 Waste Impoundments

Facility waste impoundments are used for the storage and solar evaporation of selected liquid wastes. Table 5-2 provides maximum waste inventories and Table 5-1 provides estimate of airspace required for the existing waste impoundments.

**Inventory Reduction**. After the final on-site liquid waste inventory has been processed, liquid wastes will cease to be accepted at the waste impoundment being closed. The quantity of liquid in the unit will be reduced through solar evaporation. Evaporation of remaining liquids is expected to take approximately 4 years. Remaining free liquids and sludges will be stabilized by the application of a stabilization agent (to meet all LDR requirements. e.g., fly ash, cement kiln dust, etc.).

For purposes of closure cost estimating, it has been assumed impoundment solids holding capacity has been reached and any residual liquids will be evaporated.

**Closure Procedures**. Individual waste impoundment units/subunits will be closed in accordance with the requirements of 40 CFR 264.228 and OAR 340-104-228. All wastes, waste residues, contaminated subsoils, will be tested for conformance with LDR per 268.40, liners, structures, and equipment will be removed and macro/micro encapsulated or direct disposed of in the active on-site Subtitle C landfill. The Evaporation Ponds will be closed during substantial facility closure activities.

During the period when the Evaporation Pond is inactive but not closed, CWMNW will implement all necessary measures to prevent threats to human health and the environment from the Evaporation Pond. At a minimum, these will include the following:

- Run-on will be prevented from entering the Evaporation Pond.
- There will be no run-off from the Evaporation Pond.
- Site security control measures will be maintained to prevent unauthorized access to the property by persons or livestock.
- The Evaporation Pond and its associated leak detection sumps will be monitored in accordance with the inspection schedule.

**Schedule**. The time required to initiate closure of a waste impoundment will depend on the size of the individual impoundment, volume of residual wastes, weather conditions, time of year and method of closure.

Closure of the individual waste impoundments shall be in accordance 40 CFR 264.113. The unit's closure timeframe starts once the liquids have evaporated from the unit.

### 3.7 Closure Process - Landfills

Facility landfills will be used for the permanent disposal of bulk solid hazardous wastes, containerized wastes free of liquids, and stabilized wastes. Attachment #14 – *Landfill Design, Operations, and Response Plan* contains landfill capacities.

Reserve landfill capacity is maintained to accept waste inventory that may exist at the time of facility closure. This capacity will be used for the disposal of solid or stabilized waste such as:

- Residues from the closure of the processing units
- Discarded tools, fixtures, wiring, etc.
- Stabilized residues from the closure of processing units
- Soils generated from the closure of processing units
- Demolished decontaminated and uncontaminated concrete structures and foundations
- Stabilized residues and liner materials from impoundments undergoing closure by removal.

Remaining permitted capacity for Landfill L-14 is approximately 8,195,000 $yd^3$. Remaining permitted capacity for landfill L-15 is approximately 80,400,000 $yd^3$

**Closure Procedures**. Closure cover designs for the landfill L-14 and L-15 is included in the facility's Attachment # 14 *Landfill Design, Operations and Response Plan* document. The remaining landfills (L-1, L-3, L-5, L-6, L-7, L-8, L-9, L-10, L-12 and L-13) have been closed previously in accordance with an approved closure plan.

Attachment #17 - *Landfill Final Cover Design* document addresses landfill cover information related to materials, topsoil and vegetation, erosion and drainage control, side slope stability, cover grades, settlement, frost penetration. Final cover designs and contours for each landfill are also included.

Leachate monitoring and collection procedures for synthetically lined landfills will continue as specified in the permit throughout the closure period and until closure has been certified as complete. Thereafter, landfills and any impoundments closed in-place will be inspected and monitored in accordance with *Attachment #5-Post-Closure Plan*.

Closure will include the following procedures:

Upon placement of the final wastes the materials will be covered in accordance with normal operating practices. Any area that previously has not been covered will be covered with native soils to establish grade and to serve as the base for the final cover. The detailed closure cover design can be found in Attachment #17 – *Final Cover Design*.

The point at which the maximum unclosed portion is expected to occur will be when Landfill L-15 ad L-14 have been filled to capacity and the cells are waiting for placement of the final cap. The maximum area requiring closure for L-14 will be approximately 35.5 planar acres. The maximum area requiring closure for the specialty landfill L-15 will be approximately 202 planar acres.

**Schedule.** Closure of Landfill L-14 shall be in accordance 40 CFR 264.113 and within the approved alternate regulatory time frame outlined in Table 5-3. The unit's closure timeframe starts once all available airspace has been consumed. Closure of landfill L-15 shall be in accordance with 40 CFR 264.113 and within the approved alternate regulatory time frame outlined in Table 5-3. The landfill unit closure timeframe starts once all available airspace has been consumed.

### 3.8 Closure Process - RCRA Container Storage Areas

All RCRA regulated hazardous wastes accepted at the Arlington Facility, with the exception of containerized solids and bulk liquids and solids, are processed through the container storage areas. The pertinent physical information for all the existing container storage units is shown in Attachment #9 – *Container Storage Design and Operations Plan*

**Inventory Reduction**. Liquid wastes will be treated and landfilled on-site or shipped to off-site treatment as appropriate Wastes will be treated and landfilled or shipped off-site for treatment.

**Closure Procedures**. Containers remaining in the existing storage units will be removed and processed through the existing waste management operations as described above. All liner material will be removed and disposed of via direct landfill or Micro/Macro encapsulation based on analytical and site knowledge of potential contamination. Foundation soils from each area (S-6, S-10 and S-12) will be sampled in accordance with Appendix A and analyzed for contamination. Any contaminated soil will be removed and disposed of in an on-site RCRA landfill following testing for verification of LDR compliance per 40 CFR 268.40 requirements. For the purpose of estimating closure costs, it is assumed that a maximum depth of 1 foot of soil from 100 percent of the surface area will be removed from these units.

**Schedule**. Container Storage Areas will be closed pursuant to 40 CFR 264.113 and within the approved alternate regulatory time frame outlined in Table 5-3.

### 3.9 Closure Process - RCRA Containment Buildings

The pertinent physical information for all containment buildings units is shown in Attachment #9 – *Waste Storage Unit Design and Operations Plan*

**Inventory Reduction**. Solid wastes will be treated and landfilled on-site or shipped to off-site treatment as appropriate.

**Closure Procedures**. Bulk solids remaining in the containment units will be removed and processed through the existing waste management operations as described above. Building Structures and equipment will be decontaminated, by sweeping, washing or abrasive cleaning, and shipped offsite as scrap or sold as a commodity. Foundations and 1 foot of underlying soils from each containment building (B-2, B-4, B-5, B-6 [units 1-3], B-7 and B-8) will be sampled in accordance with Appendix A and analyzed for contamination. All contaminated concrete will be removed and disposed of in an on-site RCRA landfill following analytical to verify LDR per 40 CFR 268.40, or macro /micro encapsulated prior to disposal in the RCRA Landfill, uncontaminated materials will be recycled as appropriate. For the purpose of estimating closure costs, it is assumed that a maximum depth of 1 foot of soil from 100 percent of the surface area will be removed from these units.

**Schedule**. Containment Buildings will be closed pursuant to 40 CFR 264.113 and within the approved alternate regulatory time frame outlined in Table 5-3.

### 3.10 Stabilization Unit

CWMNW operates a Stabilization Unit for the treatment of solids, sludges, semi-solids, and aqueous wastes from direct deliveries, containers, truck wash sumps, waste impoundments, leachate, and waste management units undergoing closure.

**Inventory Reduction**. After stabilized wastes have been tested to ensure that the treatment process is adequate, and LDR has been met per 40 CFR 288.40, they will be removed from the treatment tanks and disposed of in an on-site compatible landfill.

**Closure Procedures**. Structures and equipment will be decontaminated, by sweeping, washing or abrasive cleaning, shipped offsite as scrap or sold as a commodity. Verification of all visible signs of waste will be removed from these structures to the extent practicable. Foundations and 1 foot of underlying soils from the unit will be sampled in accordance with Appendix A and analyzed for contamination. Any contaminated soil and concrete will be removed and disposed of in an on-site RCRA landfill based on analytical to verify compliance with 40 CFR 268.40, Contaminated concrete may be micro/macro encapsulated as appropriate and disposed in the RCRA landfill, uncontaminated materials will be recycled or reused as appropriate. For the purpose of estimating closure costs, it is assumed that a maximum depth of 1 foot of soil from 100 percent of the surface area will be removed from these units.

**Schedule.** Stabilization units will be closed pursuant to 40 CFR 264.113 and within the approved alternate regulatory time frame outlined in Table 5-3.

**Decontamination of Auxiliary Equipment and Tanks**

A current list of the type and number of facility equipment that are available for closure activities is maintained at the facility. The equipment used during the closure period will be decontaminated by either high-pressure water or steam washing of the tires and undercarriage. Appropriate chemical additives will be added to the cleaning solution, as specified by the chemical manufacturer. The adequacy of cleaning will be verified through visual inspection, and when the equipment is found to be clean (i.e., no visible evidence of contaminated soil or liquid), cleaning with water or steam will be repeated one more time.

Decontamination of the facility equipment used in the size reduction of solid waste (crushing operations) can be accomplished with compressed air inside the enclosed structure housing the operation. The compressed air will be effective at removing any dust residue on the equipment and any airborne dust particles will be collected and removed by the air handling and filtration system. Solid waste residue which cannot be blown from the equipment will be cleaned using conventional decontamination procedures.

The facility maintenance program requires regular equipment inspections and provides for periodic servicing and replacement of equipment.

### 3.11 Organic Recovery Units

The pertinent physical information for the Organic Recovery Units (ORU) is shown in Attachment #22 *ORU-2 and ORU-3 Design and Operations Plan*

**Closure Procedures**. The ORUs will be closed per procedures outlined in this plan. The equipment used in the operation will be decontaminated as described in this plan via sweeping, washing and abrasive cleaning. Since the referenced equipment is only subject to surficial contamination, verification of decontamination will be accomplished by visual inspection. The equipment is considered scrap and will be recycled or resold once de-contaminated and removed from the site. All contaminated concrete will be removed and disposed of in an on-site RCRA landfill following analytical to verify LDR per 40 CFR 268.40, or macro/micro encapsulated prior to disposal in the RCRA Landfill., uncontaminated materials will be recycled as appropriate. Foundation soils from the building and processing area will be removed and disposed of in an on-site RCRA landfill following analytical verification of LDR compliance.

**Closure Schedule.** ORU-2 and ORU-3 will be closed pursuant to 40 CFR 264.113 and within the approved alternate regulatory time frame outlined in Table 5-3.

### 3.12 Thermal Desorption Unit TDU-1

The pertinent physical information for the TDU-1 is shown in Attachment #25 *TDU-1 Design and Operations Plan Operations Plan*

**Closure Procedures**. The TDU-1 will be closed per procedures outlined in this plan. The equipment used in the operation will be decontaminated as described in this plan. The equipment is considered scrap and will be recycled or resold once de-contaminated and removed from the site. The structural steel and interior support structures shall be decontaminated by sweeping, washing, or abrasive cleaning. Since the referenced equipment is only subject to surficial contamination, verification of decontamination will be accomplished by visual inspection. All contaminated concrete will be removed and disposed of in an on-site RCRA landfill following analytical to verify LDR per 40 CFR 268.40, or macro/micro encapsulated prior to disposal in the RCRA Landfill, uncontaminated materials will be recycled as appropriate. Foundation soils from the area will be sampled pursuant to Appendix A and removed and disposed of in an on-site RCRA landfill following verification sampling and analytical to conform with 40 CFR 268.40.

**Closure Schedule.** TDU-1 will be closed pursuant to 40 CFR 264.113 and within the approved alternate regulatory time frame outlined in Table 5-3

## 4 DECONTAMINATION PROCEDURES

In addition to removal of concrete structures, tanks, piping, and liner systems, decontamination may consist of sweeping & vacuuming residues, incidental liquids, wash waters, sandblasting residues, spent PPE and/or other cleaning residues. To facilitate cost- effective residues management, incidental liquids, sludges, sediments, or solids will be segregated in separate containers, as necessary. These containers may consist of roll-off containers, box trailers, frac tanks, vacuum trucks, portable plastic storage tanks, WWTP tanks, totes, drums or other appropriate containers.

Representative samples of the accumulated solids, debris, equipment (via Swab), and liquids will be collected and analyzed for Universal Treatment Standards (UTS) constituents to determine if treatment is required. Sample collection and analysis methods are discussed in Appendix A and in Attachment #1, Waste Analysis Plan. Based on the results of these analyses and comparison to the UTS, the materials will be disposed per the requirements of the WAP.

Stabilization of liquids and/or solids may be performed in the Mixing Tanks in the Stabilization Units, in containers (including roll-offs), or other temporary units utilized for this purpose. Such units will be decontaminated, dismantled and/or direct disposed as hazardous waste upon completion of treatment activity. A final sample of the stabilized residues will be collected and analyzed for metals to verify the stabilized residues are no longer hazardous (or meet appropriate LDRs) and may be disposed in the facility's final landfill unit. During final closure activities for the Evaporation Pond, all residues will be characterized and properly treated and disposed at an off-site facility.

### 4.1 Closure Equipment Decontamination

All construction equipment used in closure activities and hazardous waste processing equipment (that is not disposed in a landfill unit) will be decontaminated. All rinsate will be collected and pumped to a temporary holding tank for analysis. The wash water will be transferred to one of the open Evaporation Ponds in accordance with the procedures described in the WAP. For purposes of this Closure/Post-Closure Plan, it is assumed that the wash waters will not exceed LDRs and can be placed into the Evaporation Ponds.
The decontamination zone will be located along the edge of the "working" or contaminated area and will include a liquid collection area. This zone will be bermed and double lined with synthetic sheeting to facilitate collection of wash water and to prevent a release of liquid outside the zone.

All earthwork equipment will be cleaned in the decontamination zone or truck / equipment wash pad, if it is still active, prior to final removal from the site and before any "clean" (e.g., backfilling) operations are

commenced in the area. All trucks hauling material to facility landfills will also be cleaned, as necessary, at the completion of disposal activities. Equipment decontamination will be verified visually (i.e., no visible evidence of contaminated soil or liquid).

# 5 ESTIMATE OF CLOSURE AIRSPACE REQUIRED

**Table 5-1 Estimate of Airspace Required**

| Waste Management Unit | Actual/Estimated Construction Date(s) | Maximum Total Yards Airspace Required |
|---|---|---|
| Container Storage Area S-6[2] | 1998 | 1,127 |
| Container Storage Area S-12[2] | TBC | 2,050 |
| Container Storage Area S-10[2] | 1997 | 580 |
| Waste Water Treatment Unit 1- Equipment[3] | 2006/2007 | 1 |
| Waste Water Treatment Unit 2- Equipment[3] | 2017 | 1 |
| Waste Water Treatment Unit 3- Equipment[3] | TBC | 1 |
| Waste Water Tertment Unit 4 - Equipment[3] | TBC | 1 |
| Stabilization Unit[1] | 1988-1990 | 5,077 |
| Containment Building B-4[2] | 1997-1999 | 1,802 |
| Containment Building B-2[2] | 1998 | 1,494 |
| Containment Building B-5[2] | 2004 | 3,339 |
| Containment Building B-6[2] | TBC | 10,018 |
| Containment Building B-7[2] | TBC | 3,339 |
| Containment Building B-8[2] | TBC | 3,339 |
| Waste Crushing Equipment - B-3 to remain | 1998-1999 | 2,693 |
| Organic Recovery Unit ORU-2[1] - Containment | 2009 | 13,055 |
| Organic Recovery Unit ORU-3[1] - Containment | TBC | 4,039 |
| TDU-1 Organic Treatment Unit[1] - Containment | TBC | 3,302 |
| Impoundments P-A[2], P-B[2] | 1987-2000 | 15,456 |
| Impoundments P-C[2], P-D[2], P-E[2] | TBC | 47,160 |
| Impoundment P-F[2] | TBC | 15,720 |
| Landfill L-14 (Cell No.'s 1 – 4)[2] | 2003-2021 | - |
| Landfill L-14 (Cell No.'s 5 – 8)[2] | TBC | - |
| Landfill L-15 (Cell No.'s 1 – 4) | TBC | - |
| | | **133,597** |
| Note 1 - Equipment will be scrapped or sold as capital goods | | |
| Note 2 - No equipment associated with this unit | | |
| Note 3 - WWT 2/3/4 are located within the ORU/TDU Contanment Strucutre | | |

# 6 GENERAL FACILITY CLOSURE REQUIREMENTS

The Arlington Facility will be closed in a manner that protects human health and the environment and minimizes the need for post-closure maintenance, in accordance with the standards found in 40 CFR 264, Subpart G.

## 6.1 Estimate of Maximum Potential Waste Inventory

As required by 40 CFR 264.112(b)(3), the *Closure Plan* must provide an estimate of the maximum extent of operations and maximum inventory of hazardous wastes on-site over the active life of the facility. This estimate is then used to determine the maximum cost of closure, as required by 40 CFR 264.142(a)(1).

The maximum inventory of hazardous waste on-site over the active life of the facility is shown in Table 5-2.

**TABLE 5-2 MAXIMUM POTENTIAL WASTE INVENTORY**

| Waste Management Unit | Actual/Estimated Construction Date(s) | Maximum Total Yards Airspace Required | Maximum Potential Inventory Gallons | Maximum Potential Inventory $yd^3$ |
|---|---|---|---|---|
| Non-RCRA Product Tank Storage | 2009 | - | 135,900 | - |
| Container Storage S-2 | 1998 | - | 1,720,000 | - |
| Container Storage Area S-6[2] | 1998 | 1,127 | 10,200,000 | See Note 4 |
| Container Storage Area S-12[2] | TBC | - | 18,000,000 | See Note 4 |
| Container Storage Area S-10[2] | 1997 | 580 | 8,090,000 | See Note 4 |
| Waste Water Treatment Unit 1- Equipment[3] | 2006/2007 | 1 | 109,890 | - |
| Waste Water Treatment Unit 2- Equipment[3] | 2017 | 1 | 345,687 | - |
| Waste Water Treatment Unit 3- Equipment[3] | TBC | 1 | 338,214 | - |
| Waste Water Tertment Unit 4 - Equipment[3] | TBC | 1 | 336,792 | - |
| Stabilization Unit[1] | 1988-1990 | 5,077 | 180,000 | 24,064 |
| Containment Building B-4[2] | 1997-1999 | 2,691 | - | 30,000 |
| Containment Building B-2[2] | 1998 | 1,494 | - | 5,950 |
| Containment Building B-5[2] | 2004 | 3,339 | 5,570,000 | 58,833 |
| Containment Building B-6[2] | TBC | - | 16,710,000 | 176,500 |
| Containment Building B-7[2] | TBC | - | 5,570,000 | 30,000 |
| Containment Building B-8[2] | TBC | - | 5,570,000 | 13,693 |
| Waste Crushing Equipment - B-3 to remain | 1998-1999 | 2,693 | NA | NA |
| Organic Recovery Unit ORU-2[1] - Containment | 2009 | 13,055 | See WWTP-2 | See Build B-4/B-5 |
| Organic Recovery Unit ORU-3[1] - Containment | TBC | - | See WWTP-3 | See Build B-4/B-5 |
| TDU-1 Organic Treatment Unit[1] - Containment | TBC | - | See WWTP-4 | See Build B-6/B-7 |
| OWS-1 Oil Water Seperator Unit | 2006 | | 85,734 | - |
| Impoundments P-A[2], P-B[2] | 1987-2000 | 11,607 | 8,500,000 | NA |
| Impoundments P-C[2], P-D[2], P-E[2], P-F[2] | TBC | - | 190,760,000 | NA |
| Landfill L-14 (Cell No.'s 1 – 4)[2] | 2003-2021 | - | - | 3,100,000 |
| Landfill L-14 (Cell No.'s 5 – 8)[2] | TBC | - | - | 8,195,945 |
| Landfill L-15 (Cell No.'s 1 – 4) | TBC | - | | 80,400,000 |
| Note 1 - Equipment will be scrapped or sold as capital goods | | **41,668** | **272,222,217** | **92,034,986** |
| Note 2 - No equipment associated with this unit | | | | |
| Note 3 - WWT 2/3/4 are located within the ORU/TDU Contanment Strucutre | | | | |
| Note 4 - Contaner Storage area capacity based on containment capacity for each unit | | | | |

Pursuant to this plan CWMNW will evaporate prior to closure. Maximum land fill airspace for waste disposal (41,668 $yd^3$) is based on the maximum solids holding capacity of the containment buildings and stabilization tanks. This amount of reserve air space will be maintained in in Landfill L-14 and/or L-15.

CWMNW will notify the DEQ of the closure of any waste impoundment, landfill, storage building, containment building, or waste treatment unit at least 60 days prior to the start of closure.

**Schedule.** The General Facility will be closed pursuant to 40 CFR 264.113 and within the approved alternate regulatory time frame outlined in Table 5-3 after termination of all waste treatment and disposal activities and after all hazardous waste units have been closed.

CWMNW will notify the DEQ in writing at least 60 days prior to the initiation of final closure of the facility. Once closure is complete, CWMNW will submit to the ODEQ, a certification by both CWMNW and by an independent registered professional engineer that the site has been closed in accordance with the specifications in the approved *Closure Plan*.

### 6.2 Inspection

Until final certification closure, inspections will be made according to the facility's Attachment #3 *Inspection Plan*. Construction monitoring and engineering certification of disposal areas will continue throughout the placement of soil cover during closure.

### 6.3 Closure Certification

As required by 40 CFR 264.115, CWMNW will certify that the activities performed to close the facility are in accordance with the procedures described in the approved *Closure Plan*. The certification will be signed by CWMNW and an independent registered professional engineer and will be submitted to the DEQ within 60 days of the completion of final closure. Documentation supporting certification will be provided to the DEQ on request.

CWMNW will also obtain certification of closure by an independent registered professional engineer for any waste impoundment or landfill that is closed prior to final facility closure, as required by 40 CFR 264.115.

### 6.4 Documentation Regarding Deed Notification

The only portions of the Arlington Facility upon which hazardous wastes will be disposed of permanently are the landfills including impoundments closed as "landfills". In order to satisfy the requirements of 40 CFR 264.119, within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, CWMNW will be required to:

- Record in accordance with state law, a notation on the deed to the facility Property - or on some other instrument which is normally examined during title search - that will in perpetuity notify any potential purchaser of the Property that:
  - The land has been used to manage hazardous wastes
  - Its use is restricted under 40 CFR Subpart G regulations; and
  - The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility required by 40 CFR 264.116 and 264.119(a) have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the DEQ; and
- Submit a certification, signed by CWMNW, that CWMNW has recorded the notation specified above, including a copy of the document in which the notation has been placed, to the DEQ.

On completion of official closure, a legal description will be prepared to precisely reflect the as-built location of all RCRA disposal units at the facility. This description will be submitted to the state along with the certification that final closure has been completed as specified in the approved *Closure Plan*.

At the time that the closure certification for each disposal unit (existing and future) or final closure of the facility is presented to the state, CWMNW also will submit a survey plat prepared by a registered land surveyor which shows the location and dimensions of landfill cells as required under 40 CFR 264.116.

No later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, CWMNW will submit to the Regional Administrator, by registered mail, a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan. The certification will be signed by the owner or operator and a qualified Professional Engineer. Documentation supporting the Professional Engineer's certification must be furnished to the Regional Administrator upon request until he releases the owner or operator from the financial assurance requirements for post-closure care under § 264.145(i).

### 6.5 Closure Cost Estimates

A copy of the most recent closure cost estimates prepared in compliance with 264.142 is maintained in the operating record at CWMNW and available for review. These cost estimates are updated annually by a third party, per the requirements of 264.140 and submitted to the Agency for review.

### 6.6 Financial Assurance

Financial Assurance in compliance with 264.143 is provided to the Agency annually for review and a copy is maintained electronically and/or by hard copy in the operating record at CWMNW.

**TABLE 5-3 – Waste Management Unit Closure Alternative Timeframes**

| Waste Management Unit | Closure Plan Submittal to DEQ[1] | DEQ Approval Timeframe | Time to Close (days)[2] | Total Time to Close[2] (days) |
|---|---|---|---|---|
| Container Storage Units[2] | 30 | 180 | 180 | 390 |
| Containment Buildings[2] | 30 | 180 | 365 | 575 |
| Organic Recovery Units[2] | 30 | 180 | 365 | 575 |
| Thermal Desorption Units[2] | 30 | 180 | 365 | 575 |
| Wastewater Treatment Units[2] | 30 | 180 | 180 | 390 |
| Stabilization/Solidification Units[2] | 30 | 180 | 365 | 575 |
| Waste Impoundments[2] | 30 | 180 | 365 | 575 |
| Final Landfill L-14 or L-15[2] | 180 | 180 | 1697 | 2057 |
| Basic Utilities (Including Laboratory)[2] | 30 | 180 | 180 | 390 |
| Final Inspection and Professional Engineer Certification | 60 | 90 | | 150 |

Note 1- Closure plan submittal timeframe starts after decision to close unit is made

Note 2 - Closure activities for each unit begin with once inventory reduction/removal has been completed and closure construction plans for each unit have been approved

# 7 POST-CLOSURE PLAN

## 7.1 Facility Identification

EPA Facility Identification Number: ORD 089 452 353

Owner's or Operator's Name: Chemical Waste Management of the Northwest, Inc.

Address and Telephone Number: 17629 Cedar Springs Lane
Arlington, OR 97812
(541) 454-2030

## 7.2 Regulatory Requirements

Facilities that have disposal operations are required by 40 CFR 264.118 to have a *Post-Closure Plan* that identifies the activities that must be carried on after the facility is closed. The regulations require that post-closure care of the facility be continued for 30 years after the date of closure of each hazardous waste management unit, unless the Oregon Department of Environmental Quality Director (ODEQ) determines that a reduced period is sufficient to protect human health and the environment.

All post-closure care activities must be in accordance with the provisions of this approved post-closure plan as specified in § 264.118

This *Post-Closure Plan* for the Chemical Waste Management of the Northwest, Inc. (CWMNW) Arlington Facility identifies post-closure care activities that will be carried out either after closure and certification of any disposal unit has occurred or following final facility closure and certification. The *Post-Closure Plan* presents the requirements for post-closure care activities, including periodic groundwater and leachate monitoring, site inspections and maintenance activities, and measures to assure restricted site access. Monitoring and reporting will be conducted in accordance with the requirements of subparts F, K, N, and X of 40CFR 264. Maintenance and monitoring of waste containment systems will be conducted in accordance with the requirements of subparts F, K, N, and X of 40CFR 264.

Post-closure uses which disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the facility's monitoring systems, are prohibited unless the Regional Administrator finds that the disturbance is necessary pursuant to 40 CFR 264.117(c)(1) or (2).

A copy of the current approved *Post-Closure Plan* will be kept electronically and/or by hard copy at the facility located at 17629 Cedar Springs Lane, Arlington, Oregon. After that time, an updated copy of the approved plan will be kept electronically and/or by hard copy at CWM Portland offices located at 7227 NE 55th Ave. Portland, Oregon. The contact person will be Pacific Northwest Environmental Protection Manager, phone number is 800-808-5901.

The *Post-Closure Plan* will be amended whenever changes in operating plans, facility design, or other factors (including a change in the expected year of final site closure) affect the plan. CWMNW will submit a written notification of or request for a permit modification at least 60 days prior to the proposed change to authorize the change in the approved post-closure plan in accordance with the applicable requirements in parts 124 and 270. The written notification or

request will include a copy of the amended post-closure plan for review or approval by the Regional Administrator.

The Regional Administrator may request modifications to the plan under the conditions described in § 264.118(d)(2). CWMNW will submit the modified plan no later than 60 days after the Regional Administrator's request.

A certification of completion of post-closure care will be provided by CWMNW to the appropriate agencies no later than 60 days after the established post-closure care period for each hazardous waste management unit. The certification will be signed by CWMNW and an independent registered professional engineer and will certify that all post-closure activities were performed in accordance with the specifications of the approved *Post-Closure Plan*. Documentation to support the certification will be provided to the agencies on request.

### 7.3 Inspection of Closed Units

The post-closure procedures and technical activities for periodic inspections will commence immediately following certification in accordance with timeframes in Table 5-4 that the entire Arlington Facility has been closed in accordance with the requirements of the approved *Closure Plan* and will continue for the period specified by 40 CFR 264.117(a) or, alternately, for the period specified by the EPA Regional Administrator. For the purpose of this *Post-Closure Plan*, this period has been assumed to be 30 years. Throughout the post-closure period, the facility will be inspected, per 40 CFR 264.113 requirements. Please see Attachment #3 – *Inspection Plan,* Inspection Schedule for detailed inspection elements.

Following the occurrence of a recorded 1inch, 24 hour storm, an out of period inspection will be scheduled for the cover, embankments, roads, dikes, surface run-off containments, and drainage ways.

The frequency of inspection has been selected on the basis of CWMNW's experience with its presently closed landfills. These landfills have not required maintenance since closure. The landfills will be the only units containing hazardous waste that will remain at the site after closure and consequently are the only units that will require maintenance. This, coupled with the remote location of the facility, makes it unnecessary to inspect landfills more frequently. Inspection frequency is outlined in Table 5-4

The date, time, results of the inspection, and the maintenance activities performed will be documented electronically or by hard copy and filed in the facility operating record along with dates of repair of identified repairs. The results of the initial semi-annual inspections will provide a data base from which CWMNW will be able to better define the nature and extent of necessary post-closure care activities and costs that will occur after the facility is finally closed.

Any necessary repairs or maintenance of the disposal unit covers, leachate detection and removal systems, groundwater monitoring wells, or fencing will be accomplished during the scheduled inspection or shortly thereafter.

### 7.4 Security Fencing

During each inspection, CWMNW personnel will check the fence for holes, damaged posts, broken or missing wire, gate damage, broken locks, and erosion under the fence and around the posts. Please see Attachment #3 – *Inspection Plan* for detailed inspection procedures.

## 7.5 Erosion Control and Maintenance of Cover and Vegetation

During each inspection, CWMNW personnel will check the cap of landfills for holes, burrows, severe surface cracks, subsidence, and erosion. Please see Attachment #3 – *Inspection Plan* for detailed inspection procedures. The cover vegetation also will be checked to determine whether revegetation is required. The drainage control system will be checked for damaged sections, debris and/or excessive vegetation, or other conditions detrimental to the system's operation. The dry climate and slow growth of vegetation will make mowing unnecessary. However, clearing will take place if weeds or grass threaten to interrupt the flow of surface water in the ditches or threaten the integrity of the closure cap. It is estimated that approximately 1,000 feet of ditch will require major maintenance and 20 feet of culvert will need replacement each year during the post-closure period. Ditches will be inspected for high or low spots and erosion.

The design features of the closure cap slopes and facility drainage system minimize the potential for deterioration. An average annual soil loss of 0.7 tons per acre per year is anticipated from closed areas containing waste. On-site soil will be used for redressing in areas eroded or areas where settlement has occurred that may cause ponding. Other conditions which may necessitate replacement of disturbed soil and/or revegetation include the burrowing activities of rodents or other small animals and the occurrence of a major storm. The soil will be replaced from a borrow area as necessary and vegetated.

## 7.6 Groundwater Monitoring

Groundwater monitoring (GWM) will continue at the Arlington Facility for 30 years following final closure. Waste Management Area (WMA) monitoring wells will be sampled semi-annually throughout this 30-year period. Wells monitoring past practice units will be monitored annually. The post-closure groundwater monitoring program for the facility will be the same program as implemented for active site operations. This program is described in Attachment #7 – *Groundwater Monitoring Program.* All groundwater monitoring wells and devices will be maintained in good repair and kept operational. The wellhead units will be inspected during the groundwater monitoring events and repaired or replaced if necessary.

If damage be found during inspections, wells will be repaired or replaced as necessary. Well integrity issues during the 30 year post closure period are not expected to occur as the facilities groundwater monitoring plan has well decommissioning and replacement of wells using the new monitoring strategy. Monitoring, including reporting requirements, will be conducted in accordance with 40 CFR Subpart F and 264.117. Please see Attachment #3 – *Inspection Plan* for specific inspection procedures. Purge water generated during post-closure groundwater monitoring events will be sent off-site for disposal.

## 7.7 Leachate Collection

Monitoring and maintenance of the leachate collection systems of individual closed landfills will be performed on a monthly basis while the facility is still active. After final facility closure, the leachate collection and removal system will be inspected in accordance with 40 CFR 264.113. The leachate collection sump system will be checked for liquid accumulation. If there is any liquid accumulation, the liquid will be removed using a portable pump and sent to a RCRA hazardous waste facility. Please see Attachment #3 – *Inspection Plan* for specific inspection procedures.

**TABLE 5-4 POST CLOSURE MONITORING TIMEFRAMES**

| Inspection Frequency | 0 to 10 years After Closure | 11 to 30 years After Closure |
|---|---|---|
| Groundwater Monitoring | Semi- Annually | Semi-Annually |
| Site Inspection | Semi- Annually | Annually |
| Final Cover Monitoring | Semi- Annually | Annually |
| Leachate Sumps | Monthly | Semi-Annually |
| Aerial Flyovers | Every 2 years | Every 5 years |

### 7.8 Benchmarks

Benchmarks are not used at CWMNW, the facility employs aerial flyovers to identify areas of subsidence to demonstrate compliance with 40 CFR 264.116 and 264.310(b)(6). Flyover

### 7.9 Post Closure Cost Estimates

A copy of the most recent post closure cost estimates prepared in compliance with 264.144 is maintained in the operating record at CWMNW

### 7.10 Financial Assurance

Financial Assurance in compliance with 264.143 is provided annually and a copy is maintained in the operating record at CWMNW.

**APPENDIX A – SOILS SAMPLING AND ANALYSIS PLAN**

## A1 SOIL SAMPLING AND ANALYSIS PLAN

Soils will be sampled and analyzed to determine the existence or extent of contamination at the Arlington Facility according to the following procedures. Prior to background and closure sampling, CWMNW will consult with Oregon Department of Environmental Quality, to identify the required extent of soil sampling for contamination removal at the Arlington Facility. Additionally, CWMNW will submit the proposed background and closure sampling locations to the department for approval at a minimum of number of days for the applicable type of unit as indicated in 40 CFR 264.112(d) prior to the anticipated final or partial closure.

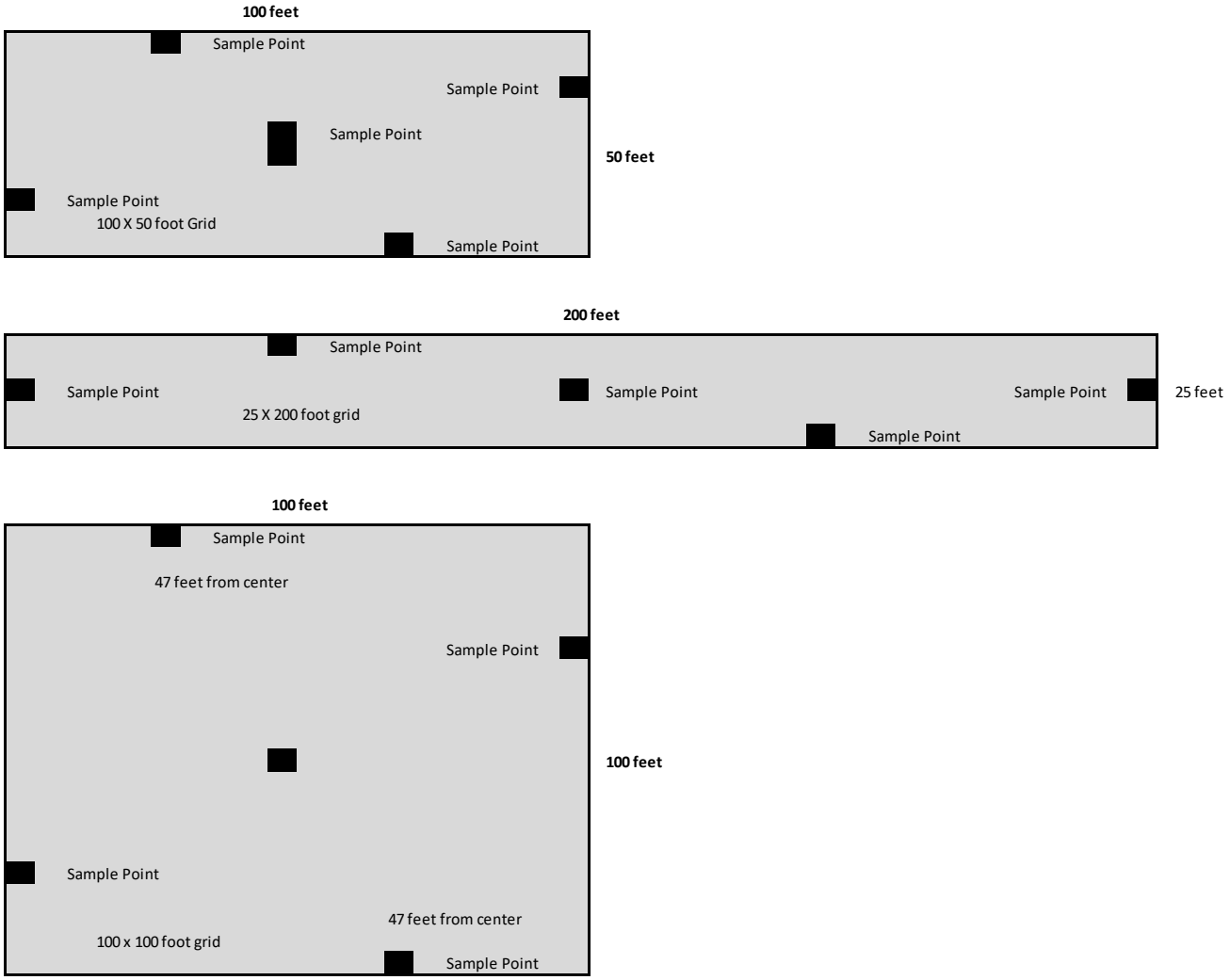
- Surrounding soils will be sampled and analyzed for the presence of contamination for all hazardous waste storage and treatment units, except those which will be constructed with impervious concrete foundations and containments.
- For landfills underlying soil sampling will not be performed, 100 x 100-foot grids will be established around the perimeter of the landfill. Five samples will be collected from each grid area. One (1) sample will be collected at the center of the grid the other four (4) samples will be collected at the 47-foot interval along the diagonals of the grid. Please see Figure 5-1 for more information
- For other treatment and storage units underlying soil sampling will be performed on a 50 x 100-foot grid with samples taken at the 47-foot interval along the diagonals of the grid. 25 x 200-foot grids will be established around the perimeter of each unit with samples taken at the 50-foot interval along the diagonals of the grid. 5 samples will be collected from each grid area. One (1) sample will be collected at the center of the grid the other four (4) samples will be collected along the diagonals of the grid. The 5 samples from each grid will be mixed to form a single composite sample. All sampling locations will be measured and marked with flags for future reference. Please see Figure 5-1 for more information
- In addition to the random sampling grid, at least one sample shall be obtained from each area of known contamination or obvious visual contamination. Samples from such areas shall not be composited with any other samples for analyses.
- Final confirmation of the absence of contamination of hazardous constituents in soil shall be demonstrated by analysis for hazardous constituents as contained in 40 CFR Part 261 Appendix VIII (for which analytical procedures are available), rather than the constituents contained in the priority pollutant list.
- Background samples will be collected from areas where no waste activity has been conducted. At least 5 background samples will be taken with each sampling consisting of 5 samples composited into a single sample. Each background soil location will consist of a single 200 ft. by 200 ft. square. Within each grid, five (5) samples will be collected: one (1) sample will be collected from the midpoint of the grid and four (4) samples will be collected along the grid diagonals at a distance of approximately 97 ft. from the center of the grid. The five (5) individual soil samples from each background grid location will be composited.
- The analytical results from these background samples will serve as the standard against which contaminated area results are compared for detecting the presence of residual contamination. Criteria used for the selection of background sample locations are as follows:

  - Samples must be taken from areas within a nominal 1,200-foot horizontal distance from the contaminated area, but not so close that they could be affected by past operation of the area or by other activity at the facility
  - Samples must be taken from similar geologic strata at similar depths as those samples taken from the contaminated area to which they will be compared.
  - If analysis of any background sample indicates that it is an outlier using the method provided in ASTM E-17880, Section 4.3 as calculated at a one percent significance level, then the Permittee may delete that sample from the background set and may replace it with a new background sample or the Permittee may demonstrate that the outlier sample is a valid background sample, representative of natural background concentrations for the constituent(s) in question. All background values for each parameter shall be subject to review and acceptance or rejection by the DEQ before such values are used to determine the cleanup standard at each unit.

- Soil samples will be taken with a standard sampling shovel at a depth of approximately 2-6 inches below the ground surface. All field sampling equipment will be rinsed between locations to eliminate cross contamination. Soil samples for inorganic analyses will be placed into either polyethylene containers or glass containers and sealed to prevent desiccation during transport to the laboratory. Soil samples for organic analyses will be placed into Teflon sealed glass containers with septum tops (or equivalent). The choice of container size and preservative method will depend on the analytical parameters in accordance with the procedures outlined in the most currently approved version of EPA Publication SW-846 ("Test Methods for Evaluation Solid Waste, Physical/Chemical Methods,") at the time each unit undergoes closure.
- Preliminary sampling and analytical testing will be performed by on-site personnel to assure that all contaminated material has been removed. If such tests show that contamination persists, additional material will be removed until test results are satisfactory. (These tests are discretionary in nature and are not used for closure certification.) Once this has been accomplished, an independent engineer will perform final certification sampling and analysis.

Successful closure is defined as test results showing concentrations of test parameters in the soil below the unit that are at (or below) the measured maximum concentration of these parameters in background samples. On a case-by-case basis, test parameters which are at de minimis levels over the maximum background concentration of that parameter may be approved by the DEQ.

**Figure 5-1 Sampling Grids**



# Approval Attachment 1b

Approval for Commercial Disposal of Polychlorinated Biphenyls
Chemical Waste Management of the Northwest, Inc.
Arlington, Oregon
U.S. EPA ID: ORD089452353

U.S. Environmental Protection Agency, Region 10
Seattle, Washington

In addition to the information provided in Application Appendix H, Closure/ Post-Closure Plan, the following pages contain PCB-specific Closure/Post-Closure Plan information excerpted from the *Final Application for Commercial Disposal of Polychlorinated Biphenyls (PCBs) under the Toxic Substances Control Act (TSCA), Chemical Waste Management of the Northwest, Inc. (CWMNW),* received by U.S. Environmental Protection Agency, Region 10 on May 12, 2023

### 3.31. [40 C.F.R. §761.65(d)(3)(viii)] Written Closure Plan

CWMNW has included the TSCA required closure elements in the sections below of this application. CWMNW has included the RCRA Part B Permit *Attachment #5 – Closure Post Closure Plan* for information on RCRA closure activities that will be occurring in parallel with the RSCA Closure Plan.

### 3.36. [40 C.F.R. §761.65(d)(6)] RCRA Closure Plan

This document is to ensure compliance with all requirements of 40 CFR 761.65 as described below

*(e) Closure*

*(1) A commercial storer of PCB waste shall have a written closure plan that identifies the steps that the owner or operator of the facility shall take to close the PCB waste storage facility in a manner that eliminates the potential for post-closure releases of PCBs which may present an unreasonable risk to human health or the environment. An acceptable closure plan must include, at a minimum, all of the following:*

*(i) A description of how the PCB storage areas of the facility will be closed in a manner that eliminates the potential for post-closure releases of PCBs into the environment.*

Long term storage on PCB Items and containers are stored in units S-2, S-11, B-5, B-6. B-7 and B-8. Storage building S-2 will remain after closure. Units S-11, B-5, B-6. B-7 and B-8 will be closed in compliance with the provisions outlined in the facilities Attachment #5 – *Closure Post Closure Plan*. Samples of materials from these units will also be analyzed for PCB contamination prior to disposal in the on-site landfill to ensure the potential for post-closure releases of PCBs do not present an unreasonable risk to human health or the environment.

*(ii) An identification of the maximum extent of storage operations that will be open during the active life of the facility, including an identification of the extent of PCB storage operations at the facility relative to other wastes that will be handled at the facility.*

*The maximum amounts stored at the facility are as follows:*

- 44 – 55 gallon drums of PCB items with concentrations >500 ppm
- 5,000 tons of PCB containing remediation soils and dredge may be stored prior to processing in Building B-6 or B-8 with concentrations >50ppm but <500ppm. Amounts of these wastes such will likely have PCB contamination in addition to other contaminants, many of these projects may exceed 100,000 tons annually. These remediation wastes are primarily from remediation projects where PCB contamination is identified as one of the many constituents in matrixes with other RCRA contaminants. Some of these materials may require stabilization or solidification prior to disposal in the on-site landfill. Stabilization and/or Solidification of these wastes will occur in Buildings B-6 and B-8, please refer to RCRA Part B Attachment #10 – *Stabilization and Debris Treatment Plan* for

specific information. Costs for these operations are included in the RCRA Permit Financial Assurance calculations. Increases to these storage volumes do not affect the supplemental TSCA financial assurance requirements

*(iii) An estimate of the maximum inventory of PCB wastes that could be handled at one time at the facility over its active life, and a detailed description of the methods or arrangements to be used during closure for removing, transporting, storing, or disposing of the facility's inventory of PCB waste, including an identification of any off-site facilities that will be used.*

CWMNW estimates it will accept 12,000,000.00 Kilograms (~13,227 tons) of PCB wastes from manufactured PCB items and dielectric fluids annually for storage and/or disposal during the life of the facility. Amounts of other wastes such as materials from remediation projects will likely have PCB contamination in addition to other contaminants, many of these projects exceed 100,000 tons annually. These remediation wastes are primarily from remediation projects where PCB contamination is identified as one of the many constituents in matrixes with other RCRA contaminants. Some of these materials may require stabilization or solidification prior to disposal in the on-site landfill. Stabilization and/or Solidification of these wastes will occur in Buildings B-6 and B-8, please refer to RCRA Part B Attachment #10 – *Stabilization and Debris Treatment Plan* for specific information. Closure costs for the stabilization and/or solidification of these materials are covered in the RCRA financial assurance mechanism.

*(iv) A detailed description of the steps needed to remove or decontaminate PCB waste residues and contaminated containment system components, equipment, structures, and soils during closure in accordance with the levels specified in the PCB Spills Cleanup Policy in subpart G of this part, including a description of the methods for sampling and testing of surrounding soils, and the criteria for determining the extent of removal or decontamination.*

CWMNW will follow the facilities removal and decontamination plan described in Attachment #5 – *Closure Post Closure Plan*. Buildings B-6 and B-8 may store, treat, and process wastes with PCB concentrations >50ppm but <500ppm generally from large remediation projects. Remediation type wastes containing PCB contamination stored in Buildings will be treated in accordance with RCRA Part B Attachment #10 – *Stabilization and Debris Treatment Plan* prior to disposal in the on-site landfill. All building demolition closure materials will be tested for PCBs as part of the sampling program described in RCRA Attachment #5- *Closure Post Closure Plan*. PCBs items with concentrations <500ppm will be disposed in the on-site landfill. Wastes with PCBs >500ppm are not expected from these remediation projects.

CWMNW will process three 250 ton batches of materials containing <50 ppm PCBs through building B-6 and B-8 treatment unit processing equipment prior to closure. These piles will be sampled and analyzed in compliance with RCRA Attachment #1 – *Waste Analysis Plan* for the appropriate LDR constituents along with PCBs, if PBCs are found to be <50ppm in these batches the equipment will be considered decontaminated and will be disposed in compliance with RCRA Attachment #1 – *Waste Analysis Plan* in the on-site landfills. Should confirmatory testing identify PCB

concentrations >50 ppm additional 250 ton batches of materials containing <50 ppm PCBs will be processed through the equipment and analyzed as previously discussed.

*(v) A detailed description of other activities necessary during the closure period to ensure that any post- closure releases of PCBs will not present unreasonable risks to human health or the environment. This includes activities such as ground-water monitoring, run-on and run-off control, and facility security.*

CMWNW will follow the procedures contained in RCRA Attachment #5- *Closure Post Closure Plan* to ensure that any post-closure releases of PCBs will not present unreasonable risks to human health or the environment.

*(vi) A schedule for closure of each area of the facility where PCB waste is stored or handled, including the total time required to close each area of PCB waste storage or handling, and the time required for any intervening closure activities.*

CMWNW will adhere to closure timeframes identified in RCRA Attachment #5 – *Closure Post Closure Plan*. CWMNW has been granted extensions of the 180 day closure timeframes for treatment and disposal units, please refer to RCRA Attachment #5 – *Closure Post Closure Pla*n.

*(vii) An estimate of the expected year of closure of the PCB waste storage areas, if a trust fund is opted for as the financial mechanism.*

CWMNW estimates complete closure of the facility in the year 2123. Many factors may affect this estimate including but not limited to inbound volumes of wastes into the facility and regional storage and transfer requirements.

***(3)*** *A separate and new closure plan need not be submitted in cases where a facility is currently covered by a TSCA approval or a RCRA permit, upon a showing to the satisfaction of the Regional Administrator (or the appropriate official at EPA Headquarters, if the commercial storage area is ancillary to a disposal facility for which an official at EPA Headquarters has approval authority) that the existing closure plan is substantially equivalent to closure plans required under paragraphs (d) through (g) of this section, and that the plan adequately accounts for PCB waste inventories.*

CWMNW is submitting this supplemental TSCA Closure Post Closure plan as a supplement to the facilities RCRA Closure Post Closure plan and identifies all necessary TSCA related Closure Post Closure related requirements

***(4)****(i) Changes in ownership, operating plans, or facility design affect the existing closure plan.*

*(ii) There is a change in the expected date of closure, if applicable.*

*(iii) In conducting closure activities, unexpected events require a modification of the approved closure plan*.

CWMNW will submit all required modifications to the TSCA closure supplement to EPA headquarters.

***(5)*** *The Regional Administrator or the Director, appropriate official at EPA Headquarters, if an official at EPA Headquarters approved the closure plan, may modify the existing closure plan under the conditions described in paragraph (e)(4) of this section.*

CWMNW Understands this requirement

***(6)*** *Commercial storers of PCB waste shall comply with the following closure schedule:*

***(i)*** *The commercial storer shall notify in writing the Regional Administrator or the Director, Office of Resource Conservation and Recovery, if an official at EPA Headquarters approved the closure plan, at least 60 days prior to the date on which final closure of its PCB storage facility is expected to begin.*

CWMNW will notify in writing the Regional Administrator at least 60 days prior to the date on which final closure of its PCB storage facility is expected to begin

*(ii) The date when a commercial storer of PCB waste "expects to begin closure" shall be no later than 30 days after the date on which the storage facility received its final quantities of PCB waste. For good cause shown, EPA may extend the date for commencement of closure for an additional 30-day period.*

CWMNW will make notification of unit closure at least 30 days after last waste receipt

*(iii) Within 90 days after receiving the final quantity of PCB waste for storage, a commercial storer of PCB waste shall remove all PCB waste in storage at the facility from the facility in accordance with the approved closure plan. For good cause shown, EPA may approve a reasonable extension to the period for removal of the PCB waste.*

During initial closure period after last waste has been received CWMNW will remove or dispose PCB waste from the facility.

*(iv) A commercial storer of PCB waste shall complete closure activities in accordance with the approved closure plan and within 180 days after receiving the final quantity of PCB waste for storage at the facility. For good cause shown, EPA may approve a reasonable extension to the closure period.*

CMWNW will adhere to closure timeframes identified in RCRA Attachment #5 – *Closure Post Closure Plan*. CWMNW has been granted extensions of the 180 day closure timeframes for treatment and disposal units, please refer to RCRA Part B Attachment #5 – *Closure Post Closure Plan*.

***(7)*** *During the closure period, all contaminated system component equipment, structures, and soils shall be disposed of in accordance with the disposal requirements of subpart D of this part, or, if applicable, decontaminated in accordance with the levels specified in the PCB Spills Cleanup Policy at subpart G of this part. When PCB waste is removed from the storage*

*facility during closure, the owner or operator becomes a generator of PCB waste subject to the generator requirements of subpart J of this part.*

CWMNW will follow the facilities removal and decontamination plan described in Attachment #5 – *Closure Post Closure Plan*. Buildings B-6 and B-8 may store, treat, and process wastes with PCB concentrations >50ppm but <500ppm generally from large remediation projects. Remediation type wastes containing PCB contamination stored in Buildings will be treated in accordance with RCRA Part B Attachment #10 – *Stabilization and Debris Treatment Plan* prior to disposal in the on-site landfill. please refer to RCRA Part B Permit attachment #10. All building demolition closure materials will be tested for PCBs as part of the sampling program described in RCRA Attachment #5- *Closure Post Closure Plan*. PCBs items with concentrations <500ppm will be disposed in the on-site landfill. Wastes with PCBs >500ppm are not expected from these remediation projects.

CWMNW will process three 250 ton batches of materials containing <50 ppm PCBs through building B-6 and B-8 treatment unit processing equipment prior to closure. These piles will be sampled and analyzed in compliance with RCRA Attachment #1 – *Waste Analysis Plan* for the appropriate LDR constituents along with PCBs, if PBCs are found to be <50ppm in these batches the equipment will be considered decontaminated and will be disposed in compliance with RCRA Attachment #1 – *Waste Analysis Plan* in the on-site landfills. Should confirmatory testing identify PCB concentrations >50 ppm additional 250 ton batches of materials containing <50 ppm PCBs will be processed through the equipment and analyzed as previously discussed.

***(8)*** *Within 60 days of completion of closure of each facility for the storage of PCB waste, the commercial storer of PCB waste shall submit to the Regional Administrator (or the Director, Office of Resource Conservation and Recovery, if an official at EPA Headquarters approved the closure plan), by registered mail, a certification that the PCB storage facility has been closed in accordance with the approved closure plan. The certification shall be signed by the owner or operator and by an independent registered professional engineer.*

CWMNW will submit by registered mail within 60 days of closure of each unit, a certification that the PCB storage facility has been closed in accordance with the approved closure plan. The certification will be signed by the owner or operator and by an independent registered professional engineer

### 3.37. [40 C.F.R. §761.65(e)] Closure

CWMNW understand the requirements of this section, long term storage on PCB Items and containers are stored in units S-2, S-11, B-5, B-6. B-7 and B-8. Storage building S-2 will remain after closure. Units S-11, B-5, B-6. B-7 and B-8 will be closed in compliance with the provisions outlined in the facilities Attachment #5 – Closure Post Closure Plan. Samples of materials from these units will also be analyzed for PCB contamination prior to disposal in the on-site landfill to ensure the potential for post-closure releases of PCBs do not present an unreasonable risk to human health or the environment.

# Approval Attachment 2
# PCB Operations Plan

(Application Appendix A, received by U.S EPA May 12, 2023, updated August 11, 2023)

Approval for Commercial Disposal of Polychlorinated Biphenyls
Chemical Waste Management of the Northwest, Inc.
Arlington, Oregon
U.S. EPA ID: ORD089452353

U.S. Environmental Protection Agency, Region 10
Seattle, Washington

# APPENDIX A
# PCB Operations Plan

For

Chemical Waste Management of the Northwest, Inc.

*Received by EPA Region 10 on May 12, 2023*
*updated August 11, 2023*

*Appendix to CWMNW's final TSCA PCB application*

Arlington Facility • ORD 089 452 353
17629 Cedar Springs Lane
Arlington, Oregon

**CWMNW PCB Operations Plan**

**Preface**

Chemical Waste Management of the Northwest, Inc. (CWMNW), has prepared this *PCB Operation Plan* as required by the Code of Federal Regulation (CFR); Title 40, Part 761.

This *PCB Operation Plan* includes detailed procedures which demonstrate the methods used at the Chemical Waste Management of the Northwest, Inc. (CWMNW) Arlington Facility to comply with applicable regulatory requirements from the Toxic Substances Control Act (TSCA), 40 CFR 761 and Oregon Administrative Rule (OAR) Chapter 340 Division 110. Historically the facility's TSCA permit has been included in the facility's RCRA Part B Permit, with the PCB Operations Plan also being part of the RCRA Part B Permit. CWMNW has been approved to manage polychlorinated biphenyls (PCBs) for treatment, storage, and disposal since 1996.

At the request of EPA Region X (EPA-X) and Oregon Department of Environmental Quality Hazardous Waste Division (ODEQ) has separated the existing TSCA permit documents from the current RCRA Permit. Having been determined that a new application is required, CWMNW has submitted an application to renew the approval for CWMNW facility to manage PCB wastes in accordance with 40 CFR, §§761.60, 761.65 and 761.75.

## 1 General Facility Description

CWMNW manages PCB wastes using one or more of the following procedures:

- Storage
- Storage and Transfer
- Drain and Flush
- Immobilization
- Stabilization (PCB wastes contaminated with RCRA constituents)
- Landfilling

PCB wastes are received in bulk form or in containers.

CWMNW is approved to process TSCA regulated (40 CFR Part 761) PCB articles and wastes at the following waste management units:

| WMU | Process | Approval Request |
|---|---|---|
| Landfill L-14<br>Cells 1-4(A – C)[1] | Landfill Disposal | Renewal of existing TSCA permit. |
| Landfill L-14<br>Cells 5 - 8 | Landfill Disposal | New Approval |
| Landfill L-15<br>Cells 1 - 4 | Landfill Disposal | New Approval |
| PCB Flushing/Storage Unit S-2, S-11 | Draining/flushing, repacking, bulking, and storage. | Renewal of existing TSCA permit. |
| PCB Flushing/Storage Unit B-5, B-6, B-7, B-8 | Draining/flushing, repacking, bulking, solidification/stabilization and storage. | New Approval |

Waste management units are confined to the active area of the site. Container and bulk storage areas, containment storage buildings, surface impoundments, stabilization bins, the organic recovery units, wastewater treatment plants, and landfills comprise the major RCRA waste management units at the site.

Figures 1-0, 1-2 and 1-3 showing the facility location, layout and building S-2 plans are provided below. PCBs are stored in storage Units S-2, S-11, B-5, B-6, B-7, and B-8.

## 1.1 Expected Waste Volumes

CWMNW stores and disposes of PCB wastes from manufactured PCB items and dielectric fluids, in addition CWMNW primarily stores, treats, and disposes of wastes as a result of one-time remediation projects. The amounts of wastes from manufactured PCB items and dielectric fluids for the last 5 years are shown below:

| 5 year PCB Waste Acceptance Volumes | |
|---|---|
| **Year** | **PCB Kilograms** |
| 2016 | 5,346,248 |
| 2017 | 9,447,354 |
| 2018 | 7,052,914 |
| 2019 | 2,840,005 |
| 2020 | 1,104,629 |

PCB activity from wastes originating from manufactured PCB items and dielectric fluids is based on the life of the permitted landfills (approx. 50 to 100 years). Landfill L-14 has an approximate remaining capacity of 6.5 million yards. Landfill L-15 has an approximate permitted capacity of 80 million cubic yards. Kilogram volume is dependent on each wastes density per cubic yard and cannot be approximated, however CWMNW has used 1.6 tons per $yd^3$ as an average density. To estimate the annual volume expected of these wastes, CWMNW estimates that 1% of its permitted landfill volume will be used by PCB wastes. Taking the 86 million $yd^3$ of available airspace divided by the midpoint in the facility life of 75 years results in approx. 13,000 tons of annual PCB volumes. Therefore:

CWMNW estimates it will accept 12,000,000.00 Kilograms (~13,227 tons) of PCB wastes from manufactured PCB items and dielectric fluids annually for storage and/or disposal during the life of the facility.

## 1.2 Maximum Amounts Stored

The maximum amounts stored at the facility are as follows:

| Total Waste Unit Storage Capacity | RCRA Solids Capacity $Yd^3$ | TSCA Capacity Containers Gal | TSCA Solids Capacity Yd3 |
|---|---|---|---|
| Building S-2 | NA | 2420 | NA |
| Container S-11 (Inside S-2) | NA | | NA |
| Building B-5 Solids Storage | 58,833 | | |
| Building B-6 Solids Storage | 16,710,000 | | 5,000 |
| Building B-7 Solids Storage | 5,570,000 | | |
| Building B-8 Solids Storage | 5,570,000 | | 5,000 |
| **Total Waste Inventory** | **27,908,833** | **2,420** | **10,000** |

## 1.3 TSCA Waste Storage Considerations

Building S-2 include Container S-11 Maximum storage in S-11 is 44 – 55 gallon drums of PCB items with concentrations >500 ppm

Buildings B-6 and B-8 manage remediation soils and dredge, maximum storage prior to treatment of these materials with PCB concentrations >50ppm and <500ppm is 5,000 tons.

Remediation wastes with PCB concentrations >500ppm are not expected. Many of these projects are projected to exceed 100,000 tons annually. These remediation wastes are primarily from remediation projects where PCB contamination is identified as one of the many constituents in matrixes with other RCRA contaminants. Some of these materials may require stabilization or solidification prior to disposal in the on-site landfill. Stabilization and/or Solidification of these wastes will occur in Buildings B-6 and B-8, please refer to RCRA Part B Attachment #10 – *Stabilization and Debris Treatment Plan* for specific information.

**Figure 1-0 Site Location Map**

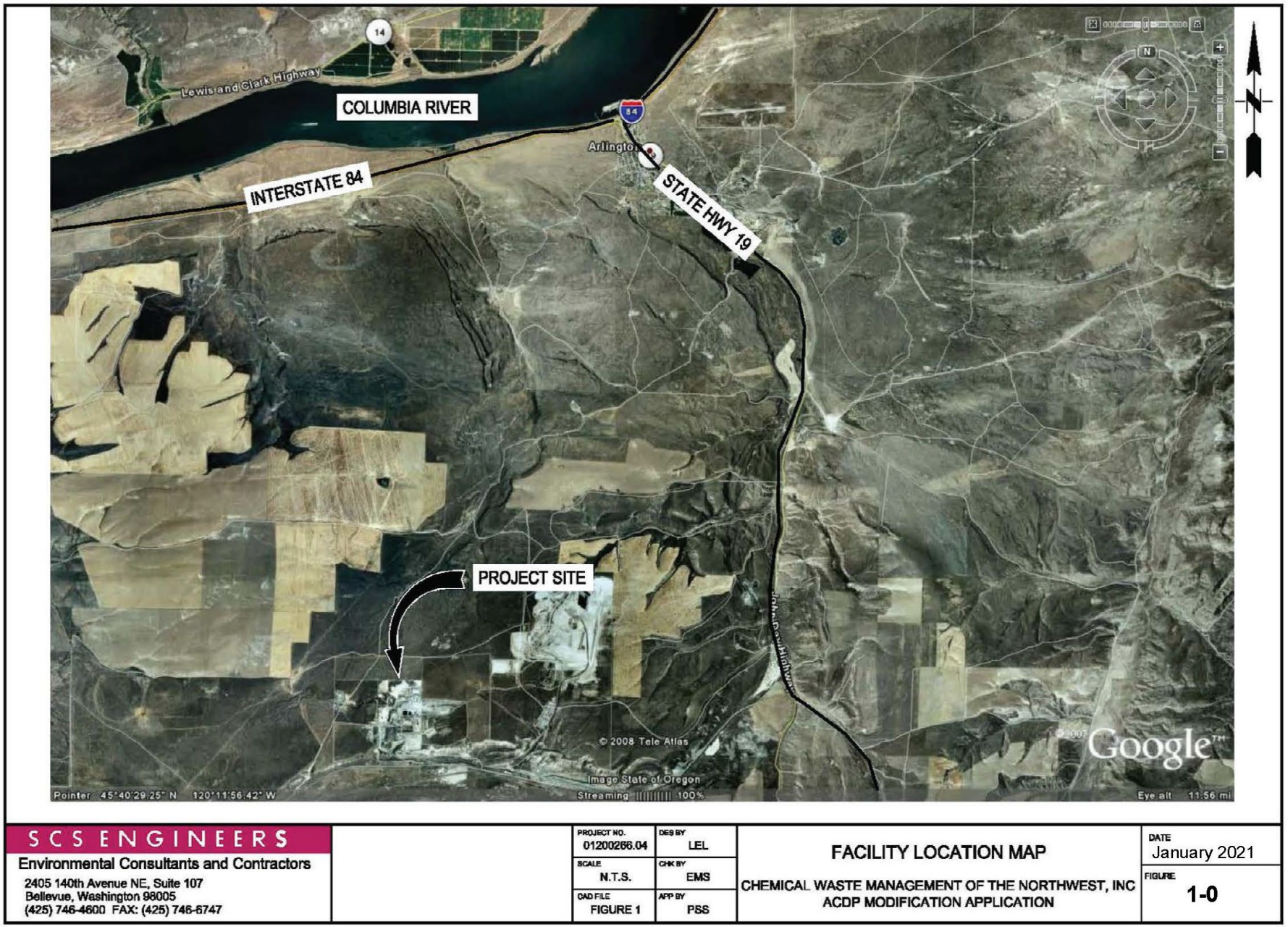


**Figure 1-2 CWM Site Plan**

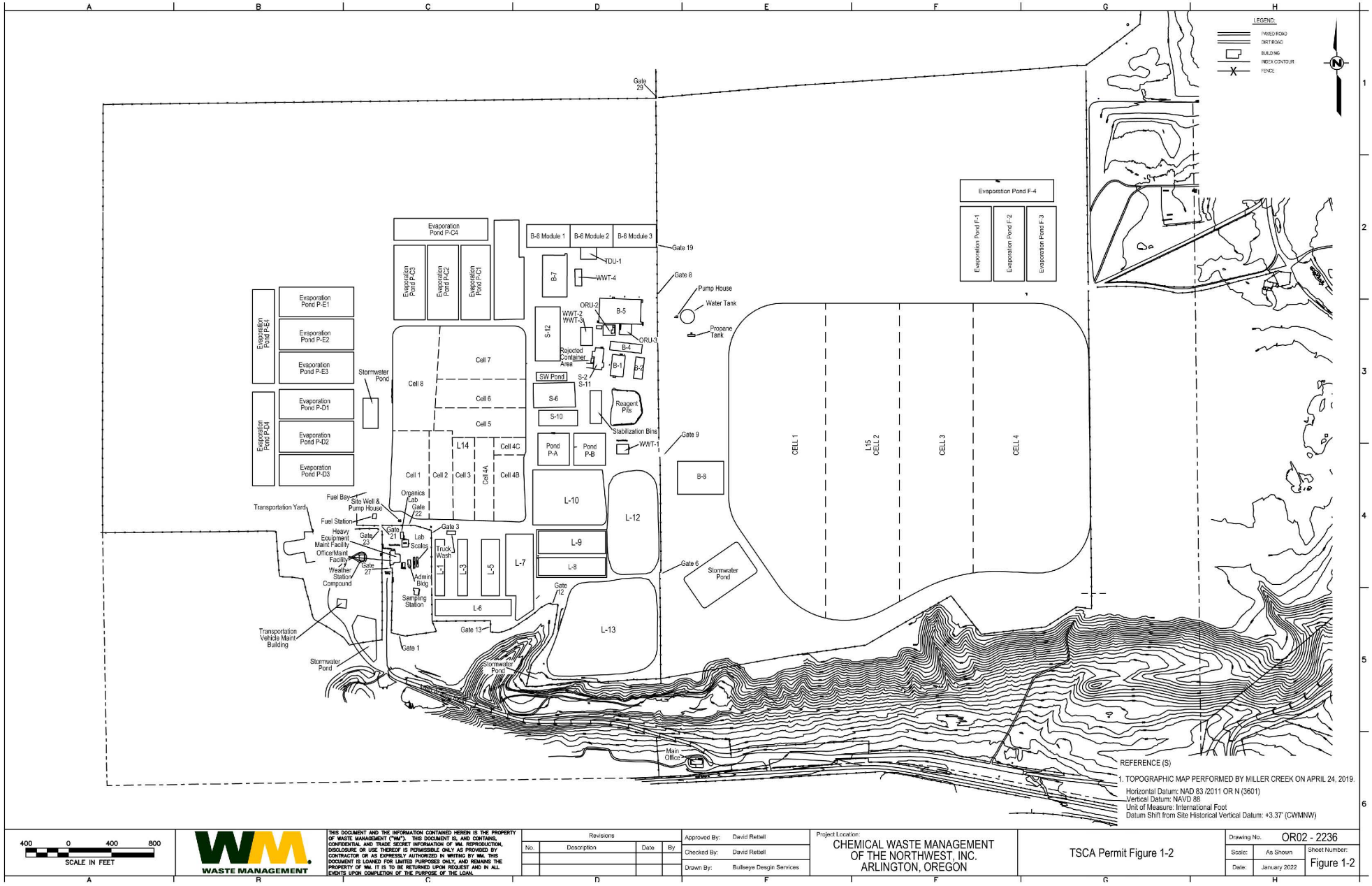
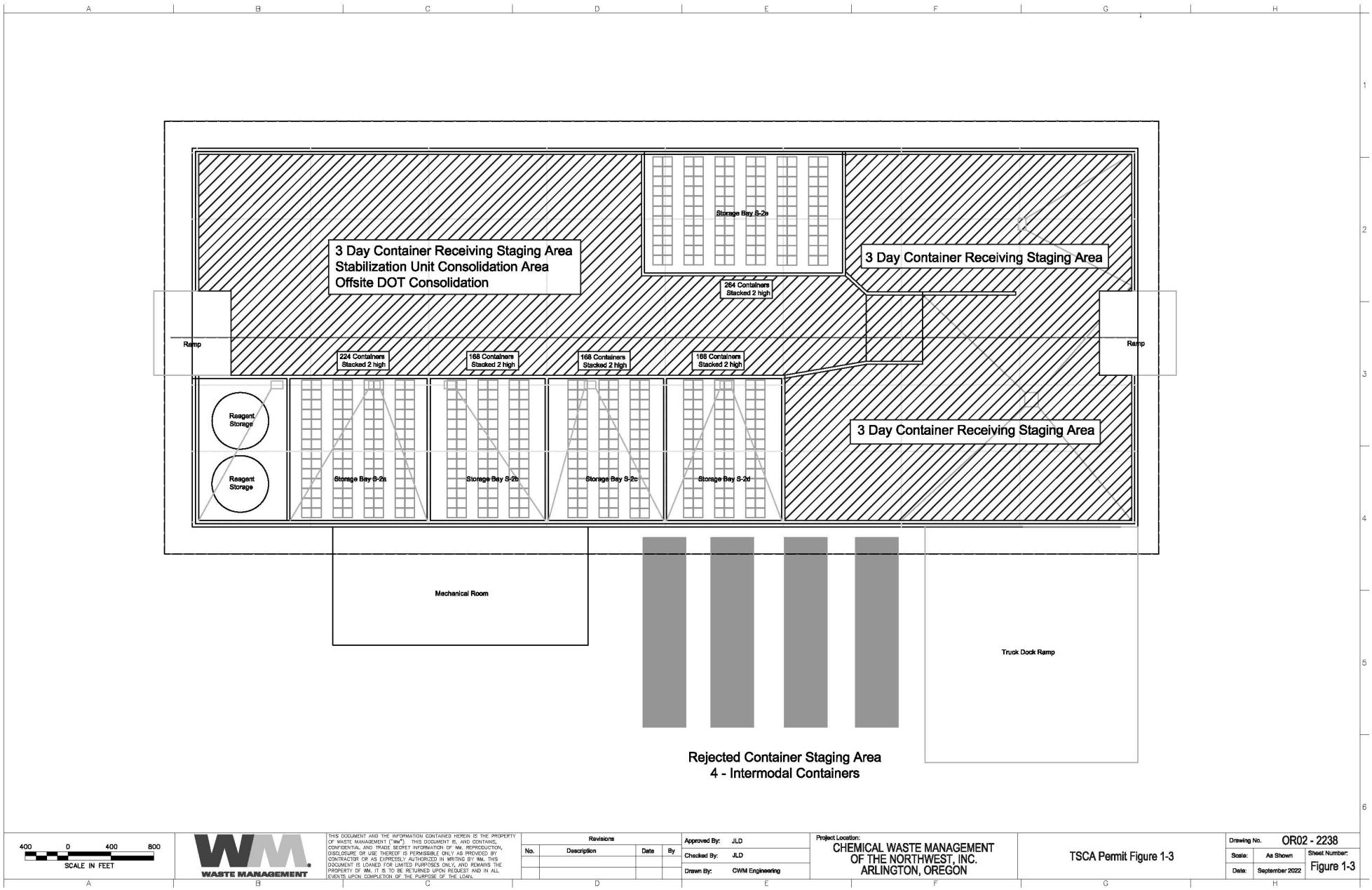


**Figure 1-3 CWM Building S-2 Layout**



# 2 Waste Acceptance Procedures

## 2.1 Introduction

Types of PCB wastes accepted at the Arlington Facility include PCB solids, Sludges, and liquids delivered to the site in bulk or containers. Articles, equipment, and clothing containing or contaminated with PCBs (e.g., PCB capacitors and transformers, gloves or aprons from draining operations, or empty drums that formerly held PCBs) are also accepted at the site.

Waste acceptance procedures for PCB wastes are, in general, similar to procedures for acceptance and analysis of other wastes received at the site. These procedures are described in the facility's RCRA Part B Permit *Attachment #1 - Waste Analysis Plan* (WAP) and are referenced where applicable in the following discussion. Specific waste acceptance procedures applicable to PCB wastes are described in detail below.

Liquid PCBs are not disposed in any landfill at the facility. PCB containing wastes with PCB concentrations of 50 ppm or less are solidified to meet free liquid requirements and disposed in the on-site landfills. Liquid PCB containing wastes with concentrations between 51ppm and 500ppm that are from incidental sources and non-ignitable may be solidified to meet free liquid requirements and disposed in the on-site landfills. PCB fluids with concentrations above 500ppm that are not from an incidental source are shipped offsite for incineration

## 2.2 Waste Identification Procedures

CWMNW has developed a series of control procedures to determine the acceptability of specific wastes for receipt at the facility. The pre-acceptance control procedures dictate what information a potential customer must provide to enable CWMNW to determine the acceptability of the waste for storage, treatment, or disposal. Pre-acceptance control is the mechanism for deciding to reject or accept a particular type of waste prior to its shipment to the facility based on the conditions or limitations of existing permits, and its compatibility with other wastes being stored, treated, or disposed of at the facility.

## 2.3 Waste Acceptance Procedures

Upon arrival at the facility, each load of waste will be inspected, sampled, and analyzed as detailed by CWMNW's WAP before initiation of any further activity. This serves two purposes:

- compares the actual waste characteristics supplied by the generator and the information determined in the pre-acceptance phase, with the information listed on the manifest, and
- further ensures the proper disposition of the waste to treatment, storage, or disposal.

Un-manifested PCB waste are not accepted for treatment, storage, or disposal by CWMNW.

If an un-manifested shipment of PCB waste arrives at the facility, receiving personnel will attempt to contact the generator, using information supplied by the transporter, to obtain a manifest, or to return the PCB waste.

CWMNW personnel ensure that all PCB transformers, capacitors, electrical equipment, and other PCB articles are destined for disposal at the facility's landfill are free of liquids or empty as required by 40 CFR 761.60. PCB articles that are not empty are either drained and flushed in accordance with Section 5.2 and procedures specified in 40 CFR 761.60(b) or stored at the facility until off-site shipment to an incinerator or appropriate treatment facility is arranged.

After waste acceptance procedures are completed, CWMNW personnel direct the vehicle to the appropriate facility's on-site treatment, storage, or disposal area.

## 2.4 PCB Manifests

CWMNW will only accept Generator manifests that are from approved printing source approved under 40 CFR 262.21 (c) and (e).

Upon receipt of PCB waste shipped on a manifest under 40 CFR Part 761.207, CWMNW will manage the manifest in accordance with 40 CFR Part 761.213.

When acting as the generator of a PCB waste CWMNW will obtain, prepare, and utilize the manifest, EPA Form 8700-22, in accordance with 40 CFR Parts 761.207 through 210 and 761.180(b)(4). Records of each signed manifest will be maintained in accordance with 40 CFR Part 761.214(a)(1) and 761.180(b)((1)(i). Periods of retention are extended automatically during unresolved enforcement action regarding the regulated activity or as requested by the Administrator in accordance with 40 CFR Part 761.214(e).

### 2.4.1 Manifest Discrepancies

If possible, manifest discrepancies are resolved by contacting the generator to properly complete the needed information on the waste shipment. Significant manifest discrepancies will necessitate the completion of a Manifest Discrepancy Report if they are not resolved within 15 days in accordance with 40 CFR Part 761.215(c).

Significant manifest discrepancies are differences in the quantity or type of waste received. Significant discrepancies in quantities are:

- Greater or less than 10 percent difference in manifested weight for bulk shipments
- Incorrect piece count for smaller size multiple container shipments

Significant discrepancies in waste type are obvious differences that can be discovered by inspection or waste analysis as conducted using fingerprint procedures, such as a waste flammable solvent substituted for a PCB-contaminated liquid. These are resolved with the generator, if possible, by correctly identifying the waste. If the waste is identified as another approved waste stream, it is tested and may be accepted if it matches the Waste Profile characterization. Significant discrepancies that cannot be resolved with the generator will result in rejection of the shipment and its return to the generator. CWMNW returns rejected shipments of PCB waste to the generator and does not send rejected wastes to an alternate facility.

# 3 Records and Reports

## 3.1 Introduction

PCB liquids, PCB contaminated liquids, and PCB solids are routinely received for treatment, storage and disposal. Depending on the concentration of PCBs contained in the PCB liquids and PCB contaminated liquids, they may be transferred to another permitted facility for required treatment (e.g, incineration). Procedures for maintaining auditable records for receipt, identification, transfer, storage, treatment, drain and flush, and disposal of PCBs are described in this section. Records corresponding to groundwater and leachate monitoring are also generally described in this section. Records will be managed electronically and/or by hard copy in the Operating Record.

## 3.2 PCB Identification Records

PCB identification documents specify the physical state of the PCB waste, the name of the waste, the process generating the waste, and indicate if the PCB content of the waste is greater than 500 parts per million (ppm). Determination of PCB concentration is based upon

1) laboratory analysis performed by an EPA-qualified laboratory, or

2) A written statement from the generator, signed by a responsible individual, providing technical justification for the determination that the liquid contains less than 500 ppm PCBs.

Alternately, PCB liquids may be shipped off site for incineration without verification of PCB content.

### 3.2.1 PCB Acceptance Records

All PCB waste arriving on site is documented and inspected. A Load Inspection Sheet is completed for each PCB shipment to facilitate inspection and acceptance procedures. After the PCB waste is received, CWMNW personnel sign the manifest and provide copies of the manifest to the transporter and generator in accordance with 40 CFR 761.213(a).

### 3.2.2 PCB Transfer/Rejection Records

As PCB wastes are transferred from storage to treatment to disposal or off-site shipment, documentation of these transfers are recorded on waste transfer logs. The date of transfer, the specific type of waste, unique load number, and weight or quantity of PCB Items transferred are recorded on the log.

For rejected loads CWMNW is required to prepare a manifest (EPA Form 8700-22) to transport a rejected load of PCB waste or transport PCB waste offsite. Each manifest is required to contain the information in 761.207(a)(1-3) as applicable. The information on the manifest must also meet the requirements in 761.207(b-f), such as name of the facilities approved to handle the waste.

CWMNW returns rejected shipments of PCB waste to the generator and does not send rejected wastes to an alternate facility.

### 3.2.3 PCB Storage Records

A PCB storage form is maintained for all PCB waste placed in storage at the facility. The information recorded on this form includes the date the material is placed into and removed from storage, the unique load number of the waste, the number and type of containers, and other information as needed. This information is also recorded in the facility's computer tracking system.

### 3.2.4 PCB Treatment Records

#### 3.2.4.1 Drain and Flush Records

Documentation of drain and flush activities for transformer, capacitors, and other electrical equipment is maintained on a transformer processing form.

Information recorded on the form includes the following:

- generator name (from manifest)
- removed from service date
- date the PCB article was received at the Arlington Facility
- unique load number
- amount of oil drained from the article
- amount of diesel or alternate flushing solution in accordance, with 40 CFR 761.60(b)(1)(i)(B) used to fill the article
- length of time that the article was filled with the flushing, solution (a minimum of 18 hours) and
- location where the drained oil and flushed solution will be, stored (tank number or drum number).

### 3.2.4.2 Stabilization Records –

Waste identification records for materials requiring stabilization specify a Stabilization Evaluation Test (SET). The SET is recorded on a stabilization form and represents the amount of reagents required to stabilize that particular waste stream. Information recorded on the stabilization form includes the following:

- date
- EPA codes
- generator
- mix ratio
- stabilization unit bin number, and
- certification and signature.

See Section 5.3 for more information on operational procedures

### 3.2.4.3 Immobilization (Micro and Macro-encapsulation)

**Micro-encapsulation:** Waste identification records for materials requiring microencapsulation specify a mix ratio dependent on the type of RCRA codes present in the waste. Information recorded on the Micro-encapsulation form includes the following:

- date
- EPA codes
- generator
- mix ratio
- stabilization unit bin number, and
- certification and signature

See Section 5.3 for more information on operational procedures

**Macro-encapsulation:** Waste identification records for materials requiring macro-encapsulation are maintained on a Macro-encapsulation Processing Form. The form contains the following information:

- start date
- end date
- part number
- load number
- profile number
- EPA codes; and
- certification statement and signature

See Section 5.3 for more information on operational procedures

### 3.2.5 PCB Disposal Records

A Certificate of Disposal (CD) is prepared and submitted to the generator of all PCBs disposed of in the facility's landfill. The certificate is submitted within 30 days of the disposal date and includes the following information:

- the Name, Address, and EPA Identification Number of the disposal facility
- the identity of the PCB waste disposed of, including reference to the manifest number of the shipment

- a statement certifying that the waste was disposed on site, including the date of disposal and the process used, and
- a certification statement as defined in 40 CFR 761.3.

In accordance with 40 CFR 761.75(b)(8)(iv), records of the disposal location of PCBs buried in the landfill are maintained on a three-dimensional grid. Information maintained on the grid regarding the location of all PCBs disposed in the landfill is incorporated into CWMNW's computer tracking system. The grid map includes the unique load number of the disposed PCB waste and can be tracked back to the manifest that accompanied the PCB shipment, as well as the chemical and physical makeup of the incoming PCBs. Liquid PCBs are not disposed of in the landfill.

### 3.2.6 Monitoring Records

As required by 40 CFR 761.75(b)(6), records of groundwater and leachate sampling and analysis are maintained at the facility electronically or by hard copy in the facilities operating record.

### 3.2.7 Long-Term Record Maintenance [761.180.(d)]

Records, documents, and reports pertaining to PCB landfill disposal at the facility will be maintained electronically or by hard copy in the facilities operating record at least 20 years after the landfill is no longer used to dispose of PCB wastes (or for the length of time necessary to satisfy the regulatory requirements), after the landfill is closed.

### 3.2.8 Other Records

CWMNW will maintain the following Records in compliance with 761.180 electronically or by hard copy in the facilities operating record

- Inspections and cleanups per 761.180(b)(1)(iii)
- Special records as required by 761.180(f), such as documents, correspondence, and data by or to any State or local government agency, and applications and related correspondence to any local, State, or Federal authorities

## 3.3 Reports

### 3.3.1 Annual Document Log

The written annual document log will be prepared by July 1, for the previous calendar year. The log includes information on the Arlington Facility in addition to PCB waste received, stored, generated, and disposed at the facility in accordance with 40 CFR 761.180(b)(2). Information required on the log is as follows:

- Name, Address, and EPA Identification Number of the storage or disposal facility covered by the annual document log for the calendar year
- Manifest numbers generated or received by the facility during the calendar year, the unique manifest number and the name and address of the facility that generated the manifest, and the following information:
    - Bulk PCB Waste:
        - weight (kg)
        - date removed from service
        - date received at the facility
        - date put into transport for off-site storage/disposal (SD)
        - date of disposal

- PCB Article:
    - serial number or equivalent of each PCB article
    - weight of PCBs in transformer/capacitor (kg)
    - date removed from service
    - date received at the facility
    - date put into transport for off-site storage/disposal
    - date of disposal
- PCB Container:
    - unique number to identify container
    - description of contents
    - weight of material in container(kg)
    - date that material in container was first removed from service for disposal
    - date received at the facility
    - date put into transport for off-site storage/disposal
    - date of disposal
- PCB Article Container:
    - unique number to identify container
    - description of contents
    - weight of contents (kg)
    - date when the first PCB article put in the PCB Article Container was removed from service for disposal
    - date received at the facility
    - date placed in transport for off-site storage/disposal
    - date of disposal.

### 3.3.2 Annual Report

The annual report summarizes information retained by the annual document log and additional operating records. The annual report will be prepared by July 1 for the previous year and submitted to the EPA by July 15 of each year. The submitted annual report will be signed by the facility's General Manager or responsible designee, and includes the following information required by 40 CFR 761.180(b)(3):

- Name, Address, and EPA Identification Number of the facility covered by the annual report for the calendar year, a list of the numbers of all signed manifests of PCB waste initiated or received by the facility during that year.
- Total weight in kilograms of bulk PCB waste, PCB waste in transformers, PCB waste in large capacitors, PCB waste in article containers, and PCB waste in containers, in storage at the facility at the beginning of the year, received or generated at the facility, transferred to another facility, or disposed of at the facility during the calendar year, and
- Total number of PCB transformers, PCB large capacitors, PCB article containers, and PCB containers, in storage at the facility at the beginning of the year, received or generated at the facility, transferred to another facility, or disposed of at the facility during the calendar year.

The information must be provided for each category. Any requirements for weights in kilograms of PCBs may be calculated values if the internal volume of containers and transformers is known

and included in the reports together with any assumptions on the density of PCBs in the containers or transformers.

### 3.3.3 Exception Report

In accordance with 40 CFR 761.217(a), if CWMNW as a PCB generator does not receive a signed copy of the manifest from the storage/disposal facility within 35 days from the date that the waste was accepted from the first transporter, CWMNW will contact the facility to determine the status of the PCB waste.

An exception report will be submitted to the EPA no later than 45 days from the date on which the generator should have received the manifest after noting that the following has occurred:

If CWMNW generates a PCB waste, sends if off site for storage or disposal, and does not receive a copy of a signed manifest within 45 days from the date that the waste was accepted by the first transporter.

The exception report must include:

- A legible copy of the manifest for which the generator (CWMNW) does not have confirmation of delivery, and
- A cover letter signed by the generator (or authorized designee) explaining the efforts taken to locate the PCB waste and the results of those efforts.

### 3.3.4 One-Year Exception Report

A one-year exception report must be submitted to the EPA as within 45 days after the 1-year storage for disposal date, per 761.219(a), or 45 days after from the date of the occurrences in 761.219(b)(1-2) after identifying that either of the following has occurred:

- If PCBs are received at CWMNW with a manifest indicating more than nine months from the removed from service date, and CWMNW could not dispose of the waste within 1 year after the removed from service date indicated on the manifest or continuation sheet; or
- If CWMNW, acting as a generator and/or commercial storer, ships PCBs off site less than nine months from the removed from service date, and CWMNW received a Certificate of Disposal which indicates that the waste was actually disposed of more than one year after the removed from service date, or the off-site destination facility did not send CWMNW a Certificate of Disposal within 13 months from the removed from service date.

The one-year exception report must include:

- A legible copy of the manifest relevant to the transfer and disposal of the affected PCB waste,
- A cover letter signed by the General Manager or his designee stating:
- date(s) the PCB waste were removed from service,
- date the PCB waste was received for on-site disposal,
- date the PCB waste was shipped off site,
- name of transporter and designated storage/disposal facility, and
- reason for the delay in bringing about the disposal of the affected PCB waste within one year from the removed from service date.

### 3.3.5 Un-manifested Waste Report

Un-manifested PCB wastes are not accepted for disposal at the Arlington Facility. If an un-manifested PCB waste arrives at the facility, and attempts to obtain a manifest have failed, then the waste will be returned to the generator. Within 15 days after receiving the un-manifested PCB waste, the facility will prepare and submit an un-manifested waste report to the EPA Regional Administrator for the region in which the facility is located, and to the EPA Regional Administrator for the region in which the PCB waste originated, if known. EPA Form 8700-13B may be used, or the report may be submitted by a letter designated "Un-manifested Waste Report". The report will include the following information:

- EPA Identification Number, Name and Address of the facility,
- Date the facility received the un-manifested PCB waste,
- EPA Identification Number, Name and Address of the generator and transporter, if available,
- Description of the type and quantity of the unmanifested PCB waste received at the facility,
- The method of storage or disposal for each PCB waste;
- Signature of the owner or operator of the facility or his authorized representative
- A brief explanation of why the waste was un-manifested, if known, and
- Disposition made of the un-manifested waste by the facility, including:
    - if the waste was stored or disposed by the facility, was the generator identified and was a manifest subsequently supplied,
    - if the waste was sent back to the generator, why and when.

### 3.3.6 Other Reporting

CWMNW understands that should its PCB waste handling practices change, the facility must resubmit EPA Form 7710-53 to reflect those changes no later than 30 days from when a change is made, as 761.205(f) states.

## 4 Landfill Operations

### 4.1 Introduction

Currently, disposal operations are taking place in Landfills L-14 and in the future landfill L-15. Landfill design drawings, cross sections, and design details for all non-closed landfill units are maintained in the facility's RCRA Part B Permit Attachment #18 - *Landfill Design Drawings*.

Personal Protective Equipment for employees handling PCB items is contained in the facility's required PPE Personal Protective Equipment and Clothing Chart Matrix, documented in the facility's OSHA Safety Plans. The PPE Matrix contains requirements for employees handling PCB items that protect against dermal contact or inhalation of PCBs or materials containing PCBs.

### 4.2 Liner Design of Landfill Units

Engineering Design Reports for Landfill L-14 and L-15 are contained in the facility's RCRA Part B Permit Attachment #18 - *Landfill Design Drawings.*

### 4.3 Deposition of Waste and Backfilling

Disposal procedures shall be conducted to prevent the occurrence of:

- Generation of extreme heat or pressure, fire or explosion, or violent reaction,

- Production of uncontrolled toxic mists, fumes, dust, gases in sufficient quantities to threaten human health or the environment,
- Production of uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions, ignitable wastes are not disposed in the landfill in accordance with the CWMNWs
- Disposal of ignitable wastes in the landfill are specifically restricted by the ODEQ RCRA Part B permit
- Damage to the structural integrity of the device or facility containing the waste, and
- Threat to human health or the environment.

Procedures for the operation of Landfills L-14 and L-15 are detailed in the facility's RCRA Part B Permit *Attachment #14 - Landfill Design, Operations, and Response Plan.*

### 4.4 Burial Coordinates

PCB waste shall be disposed of in the landfill at CWM following 761.75 requirements. Waste placement is recorded on a three-dimensional map and in the facilities computerized systems identifying the specific location of the waste.

### 4.5 Landfill Leachate and Run-on Media Testing

CWMNW will perform sampling analysis, for run-on accumulated precipitation, and leachate using SW-846 Methods, 8082a, and other methods as required to properly characterize the media.

### 4.6 Sampling and Monitoring Equipment and Facilities Available

CWMNW maintains stocks of manual sampling equipment on-site and employs this equipment in compliance with the Sampling and equipment methods outlined in Attachment #1 - *WAP*.

# 5 Disposal and Treatment

CWMNW accepts and manages the following types of PCB wastes for the processes below:

- **PCB Transformers >500 ppm PCB** - received for landfill disposal of the drained/flushed carcass. The generator must certify that the PCB transformer has been drained/flushed in accordance with 40 CFR 761.60(b)(1)(B). Waste must contain no free liquids prior to disposal in the active landfill. Any PCB transformer with free liquids present will be drained and flushed in accordance with 761.75(b)(8)(ii). Residual liquids will be sent offsite for incineration.
- **PCB Contaminated Transformers >50 ppm but <500 ppm** - received for landfilling or recycling of the carcass (e.g., shipment to a metal smelter subject to 40 CFR 761.72). The PCB contaminated transformer must arrive drained with no free liquids present prior to landfilling in the active landfill. Any PCB transformer with free liquids present will be drained and flushed in accordance with 761.75(b)(8)(ii).
- **PCB Contaminated Solids Containing No Free Liquids** - received for landfill disposal; or mixed RCRA/TSCA for stabilization, or encapsulation. These include but are not limited to contaminated clothing, rags, environmental media, debris, and equipment. Waste must contain no free liquids prior to landfill disposal in the active landfill.
- **PCB Containers** - received for disposal in the landfill. The contents of each container are managed based on the type of PCB material present (solids, transformer, capacitor, etc.). Waste must contain no free liquids prior to landfill disposal in the active landfill. Any PCB container received with free liquids will be stabilized in accordance with Stabilization section below and 761.75(b)(8)(ii).
- **PCB Articles and Electrical Equipment** - articles/electrical equipment are received for direct landfill. PCB articles and equipment that would require draining must arrive drained of free liquids Any PCB articles/electrical equipment with free liquids present will be stabilized in accordance with Stabilization section below and 761.75(b)(8)(ii).
- **PCB Contaminated Articles and Electrical Equipment** - articles/electrical equipment are received for direct landfill. PCB contaminated articles and equipment that would require draining must arrive drained of free liquids. Any PCB articles/electrical equipment with free liquids present will be stabilized in accordance with Stabilization section below and 761.75(b)(8)(ii).
- **PCB Remediation Waste** – remediation wastes such as soil, concrete, asphalt, etc. are received for landfill disposal. Waste must contain no free liquids. Any PCB remediation waste received with free liquids present will be stabilized in accordance with Stabilization section below and 761.75(b)(8)(ii).
- **PCB Bulk Product Waste** – PCB bulk product wastes including paint, caulk, mastics, sealants, and building surfaces that have been coated with these products are received for landfill disposal. Waste must contain no free liquids. Any PCB bulk product waste received with free liquids present will be stabilized in accordance with Stabilization section below.

Personal Protective Equipment for employees handling PCB items is contained in the facility's required PPE Personal Protective Equipment and Clothing Chart Matrix, documented in the facility's OSHA Safety Plans. The PPE Matrix contains requirements for employees handling PCB items that protect against dermal contact or inhalation of PCBs or materials containing PCBs.

## 5.1 Landfill Disposal

PCB wastes not passing the paint filter test are not disposed of in the landfill units. All PCB containing liquids are stabilized prior to disposal in accordance with 761.75(b)(8)(ii).

Placement of PCB items in the landfills will be in a manner that will prevent damage to containers or articles, and segregate from items not chemically compatible in accordance with 40 CFR 761.75(b)(8)(i).

Expected volumes of PCBs over the life of landfills L-14 and L-15 is estimated as follows:

PCB Activity is based on the life of the permitted landfills (approx. 50 to 100 years). Landfill L-14 has an approximate remaining capacity of 6.5 million yards. Landfill L-15 has an approximate permitted capacity of 80 million cubic yards. Kilogram volume is dependent on each wastes density per cubic yard and cannot be approximated, however CWMNW has used 1.6 tons per yd3 as an average density. To estimate the annual volume expected, CWMNW estimates that 1% of its permitted landfill volume will be used by PCB wastes. Taking the 86 million yd3 of available airspace divided by the midpoint in the facility life of 75 years results in approx. 13,000 tons of annual PCB volumes. Therefore:

CWMNW expects to accept up to 12,000,000.00 Kilograms (~13,227 tons) of waste annually for treatment or disposal during the life of the facility.

## 5.2 Drain and Flush

PCB transformers, capacitors, and other PCB articles containing PCB liquids that are accepted at the Arlington Facility for disposal that contain PCB liquids will first be drained of free flowing liquid, filled with solvent, allowed to stand for at least 18 hours, and drained thoroughly. The flushed PCB liquid will be managed in accordance with 40 CFR 761.60(a). The empty PCB article may be disposed of in the facility's landfill.

Non-leaking and structurally undamaged PCB Large High Voltage Capacitors and PCB-Contaminated Electrical Equipment that have not been drained of free flowing dielectric fluid may be stored on pallets next to a storage Unit. PCB-Contaminated Electrical Equipment that has been drained of free flowing dielectric fluid is not subject to the storage provisions of § 761.65. Storage will be permitted only when the facility has immediately available unfilled storage space equal to 10 percent of the volume of capacitors and equipment stored outside the facility. The capacitors and equipment temporarily stored outside the facility shall be checked for leaks weekly.

Containerized PCBs accepted at the facility may be stored in Building S-2, S-11, B-5, B-6, B-7, and B-8 prior to disposal or transferred off-site for management at another permitted facility. PCBs will be stored in the PCB storage buildings S-2, S-11, B-5, B-6, B-7, and B-8 that meets the criteria listed in 761.65(b)(1), or in accordance with the temporary storage requirements listed in 761.65(c).

## 5.3 Stabilization

PCB waste contaminated with both TSCA and RCRA-regulated constituents received at the facility may be treated by stabilization. These wastes must meet the disposal requirements found at 40 CFR 761.60. This includes any non-liquid PCBs at concentrations of <500 ppm in the form of contaminated soil,, sludges, rags, or other debris. In addition, any non-liquid PCB waste (including sludges) that contain a PCB concentration less than 50 ppm may also be present and treated in the stabilization unit. PCB debris contaminated with RCRA constituents will be treated using immobilization processes described in the facility's RCRA Part B Permit *Attachment #10 - Stabilization and Debris Treatment Plan.* Dust suppression for soils that could release particulate emissions during stabilization and handling will be moisture conditioned.

Free liquids which may accompany a PCB waste contaminated with RCRA-regulated constituents may be stabilized with the waste on a case-by-case basis. CWMNW will contact the generator regarding any associated free liquids and attempt to identify the source of the liquid. If the generator can adequately demonstrate that the liquids are environmental media (e.g., rainwater or groundwater) that are incidental to the PCB waste, the free liquids may be stabilized with the PCB wastes.

## 5.4 PCB Storage/Transfer Operations

The Design for each storage unit is in accordance with Attachment #9 - *Container Storage Design and Operations Plan,* of the RCRA permit.

PCB Storage/Transfer operations of non-leaking PCB Items are conducted in the following units:

- Temporary outdoor storage (<30 days) in units S-6, S-10 and S-12 of containers holding up to 85 gallons of PCB liquids with a concentration between 50 and 500 ppm (each container is labeled to indicate the PCB concentration of container contents does not exceed 500 ppm)
- Temporary outdoor storage (<30 days) in units S-6, S-10 and S-12 of leaking PCB Articles and PCB Equipment if the PCB Items are placed in a non-leaking PCB Container that contains sufficient sorbent materials to absorb any liquid PCBs remaining in the PCB Items;
- Temporary outdoor storage (<30 days) in units S-6, S-10 and S-12 of PCB containers containing non-liquid PCBs such as contaminated soil, rags, and debris
- Temporary and long term (>30 days) storage of containerized PCB liquids and solids, in Units S-2, S-11, B-5, B-6, B-7, and B-8.
- Temporary outdoor storage (<30 days) in units S-6, S-10 and S-12 of PCB containers containing liquid PCBs at concentrations of ≥50 ppm, provided the liquid PCB waste is in packaging authorized in the DOT Hazardous Materials Regulations at 49 CFR parts 171 through 180 or stationary bulk storage tanks (including rolling stock such as, but not limited to, tanker trucks, as specified by DOT).
- Transfer of PCB liquids in Units S-2, S-11, B-5, B-6, B-7, and B-8.
- Storage in preparation for Stabilization/Solidification of PCB containing clean-up and remediation soils and sludges with a concentration >50 and <500 ppm in Building B-6 and B-8
- Storage in preparation for thermal treatment of PCB containing clean-up and remediation soils and sludges with a concentration >50 and <500 ppm in Building B-6.

PCB Wastes are stored within the above units based on its compatibility with other wastes being stored.

CWMNW has prepared a Spill Prevention, Control and countermeasure plan for the facility/

Any mobile equipment, such as a forklift, which enters a PCB storage area or building and comes in contact with PCBs, must be properly decontaminated or verified to be free of PCB contamination before moving from that structure.

## 5.5 Storage Limitations

Any PCB wastes received shall be disposed of within 1-year from the date it was determined to be PCB waste and the decision was made to dispose of it with the exception of wastes stored for wastes generated from the Portland Harbor Superfund remediation projects have been exempted per 40 CFR 268.50(b). The waste will be accumulated in the building until they can undergo

treatment processing by TDU-1. The facility is allowed to store waste pending treatment for longer than one year, not to exceed the life of the permit.. The 1-year disposal due date starts from the date of removal from service for disposal begins.

PCB items including organic solvents shall be segregated throughout the waste handling, storage and disposal activities in accordance with 40 CFR 761.75(b)(8)(i).

### 5.6 Containers

All PCB waste containers used for the storage of liquid or non-liquid PCB are managed in accordance with the requirements set forth in the DOT Hazardous Materials Regulations (HMR) at 49 CFR parts 171 through 180. PCB waste not subject to the HMR (i.e., PCB wastes at concentrations of <20 ppm or <1 pound of PCBs regardless of concentration) must be packaged in accordance with Packaging Group III, unless other hazards associated with the PCB waste cause it to require packaging in accordance with Packaging Groups I or II. For purposes of describing PCB waste not subject to DOT's HMR on a manifest, one may use the term "Non-DOT Regulated PCBs."

### 5.7 Container Marking Formats

***Large PCB Mark - $M_L$*** . Mark $M_L$ shall be as shown in Figure 1, letters and striping on a white or yellow background and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Article, PCB Equipment, or PCB Container. The size of the mark shall be at least 15.25 cm (6 inches) on each side. If the PCB Article or PCB Equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 5 cm (2 inches) on each side.

***Small PCB Mark - $M_s$*** . Mark $M_s$ shall be as shown in Figure 2, letters and striping on a white or yellow background, and shall be sufficiently durable to equal or exceed the life (including storage for disposal) of the PCB Article, PCB Equipment, or PCB Container. The mark shall be a rectangle 2.5 by 5 cm (1 inch by 2 inches). If the PCB Article or PCB Equipment is too small to accommodate this size, the mark may be reduced in size proportionately down to a minimum of 1 by 2 cm (.4 by .8 inches).


Figure 1

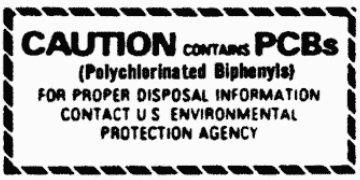



Figure 2

CWMNW does not accept or store PCB/Radioactive wastes at the facility

CWMNW does not store liquid PCB wastes in stationary containers (tanks) at the facility.

## 5.8 PCB Decontamination

In accordance with 761.79, CWMNW will follow decontamination standards and procedures for removing PCBs, which are regulated for disposal, from water, organic liquids, non-porous surfaces (including scrap metal from disassembled electrical equipment), concrete, and non-porous surfaces covered with a porous surface, such as paint or coating on metal except for the following:

Buildings B-6 and B-8 may store and process wastes with PCB concentrations >50ppm but <500ppm generally from large Superfund remediation projects. All building demolition materials will be tested for PCBs as part of the sampling program contained in RCRA Attachment #5-*Closure Post Closure Plan*. PCBs items with concentrations <500ppm will be disposed in the on-site landfill. Wastes with PCBs >500ppm are not expected from these remediation projects.

CWMNW will process three 250 ton batches of materials containing <50 ppm PCBs through building B-6 and B-8 treatment unit processing equipment prior to closure. These piles will be analyzed for the appropriate LDR constituents along with PCBs, if PBCs are found to be >50ppm in these batches the equipment will be considered decontaminated and will be managed in compliance with RCRA Attachment #5 final dispositions. Should confirmatory testing identify PCB concentrations >50 ppm additional 250 ton batches of materials containing <50 ppm PCBs will be processed through the equipment and analyzed as previously discussed.

## 5.9 PCB Item Inspection

All PCB Items in storage shall be checked for leaks at least once every 30 days. Any leaking PCB Items and their contents shall be transferred immediately to properly marked non-leaking containers. Any spilled or leaked materials shall be immediately cleaned up and the materials and residues containing PCBs shall be disposed of in accordance with § 761.61. Records of inspections, maintenance, cleanup and disposal are maintained in accordance with § 761.180(a) and (b).

## 6 Groundwater Management

The environmental monitoring program at the Arlington Facility is designed to detect a potential release from the PCB land disposal units to the groundwater in the uppermost aquifer underlying the facility.

The monitoring system consists of groundwater monitoring wells and leachate monitoring. The groundwater monitoring program is conducted in accordance with the procedures detailed in the facility's RCRA Part B Permit Attachment #7 - *Groundwater Monitoring Plan*.

In accordance with 40 CFR 761.75(b)(7), if there is sufficient liquid to perform the analysis, a representative sample of the liquid removed from at least one of the primary standpipes in the PCB portion of closed landfills L-5, L-7, L-9, L-12, L-13, and active landfills L-14 and L-15 will be analyzed monthly for the following parameters: PCBs, pH, specific conductance, chlorinated organics (TOX), and total chlorides in addition to the volume recorded. The sample of the liquid from L-12, L-13, L-14, and L-15 may be taken after the liquid is transferred to an on-site storage tank. Leachate from the primary and secondary collection sumps of closed landfills L-12, L-13, and active landfills L-14 and L-15 (including the tertiary monitoring sump) will be analyzed for PCBs before it is discharged to any on-site impoundments. Leachate discharged to the active on-site evaporation ponds must meet LDR standards prior to discharge to the ponds. Prior to treatment or disposal, leachate and run-off from the active PCB areas (L-12, L-13, L-14, and L-15) may be accumulated in on-site storage tanks prior to testing, pursuant to CWMNWs RCRA Part B Permit Attachment #23 – *Bulk Liquids Storage Plan*

## 7 Preventive Contingency and Security Measures

### 7.1 Contingency Plan

Spills, leaks, and other uncontrolled discharges of PCBs are managed are reported in accordance with OAR Chapter 340 Division 108. The facility's *Attachment #4 - Contingency Plan* provides an explicit description of response procedures to be used to protect the public, facility personnel, and the environment in the event of an emergency. Such emergencies may include fires, explosions, or unplanned sudden or non-sudden release of PCBs to air, soil, or surface water.

If an emergency occurs, an Emergency Coordinator immediately assesses the situation and directs appropriate response activities including implementing procedures contained in *Attachment #4 - Contingency Plan*, if necessary

### 7.2 Security Measures

Security of the site shall be maintained in accordance with Attachment #2 - Security, Hazard Prevention and Training Plan

## 8 Roadway Use and Vehicle Movement

The CWMNW site is located off Cedar Springs Road. Cedar Springs Road is constructed of bituminous concrete pavement (blacktop). Roads on the site are constructed of compacted gravel-bearing soil, flexible pavement, or asphalt. The compacted soil roads are graded as necessary and maintained throughout the year in a condition to allow transport vehicles and disposal machinery to operate safely and efficiently.

### 8.1 Contamination Control

Wastes are handled and emplaced with front-end loaders, dump trucks and small and medium duty forklifts (fitted with drum-grabbers when necessary). This equipment has been found to be

most effective since it minimizes physical contact of operations personnel with the waste containers.

Several steps are taken to assure that PCB-contaminated material is not carried from the active disposal area. First, only designated equipment is used in handling PCB wastes.

Second, whenever equipment surfaces have contacted PCBs or whenever PCB contamination is suspected to be present, such surfaces are swabbed with a solvent and then dried with suitable absorbent material. The solubility of PCBs in the solvent is 5 percent or more by weight. The solvent may be reused for decontamination until it contains 50 ppm PCBs. It is then disposed of as a PCB liquid in accordance with 40 CFR 761.60(a). Non-liquid PCBs resulting from the decontamination are disposed of in the PCB landfill.

Third, the exposure of the vehicles which haul wastes and machinery which places wastes into the disposal cell is minimized by proper operating practice. In so doing, contaminants are not carried out of the landfill on the tires or treads of the vehicles and machinery which operate in the PCB cell. As an added precaution, any heavy equipment which places waste into the disposal cell that requires maintenance will be inspected and have a standard wipe test for PCBs performed prior to going to the shop for maintenance. As an alternative, maintenance of equipment may be performed in the active area at a safe location. CWMNW implements written procedures which specify decontamination procedures be conducted on clean fill adjacent to a haul road.

Finally, a statistical sampling program is used to ensure that PCB contamination is not carried from the PCB landfills by the disposal machinery. This program consists of two regimes. The first outlines procedures for the sampling equipment surfaces which have contacted PCBs. The second outlines procedures for the sampling of soil from the landfill access ramp.

Equipment sampling is designed to identify PCB contaminants on equipment surfaces that have come into contact with PCB wastes. Before the machinery leaves the PCB disposal cell, the PCB storage areas or buildings, the equipment is sampled and analyzed to show the equipment is decontaminated. Three random samples are taken from tires and the appropriate equipment surface(s), e.g., forklifts and/or tracks of the machinery. These samples are segregated and labeled by location. Samples may be composited by vehicle location to form a 3 to 1 composite. All composite samples are analyzed for PCB contamination. Should contamination be identified, individual samples can be tested to identify the specific source of contamination. Any PCB contaminants are then removed, and the surface resampled until PCB contamination is below 10 micrograms (μg)/100 square centimeters. As a general rule, equipment that has come into direct contact with PCBs does not leave the PCB disposal cell, the PCB storage areas or buildings.

The system for sampling the landfill access ramp is based upon a clustered transect approach suitable for linear surfaces. These transects are plotted across the ramp surface perpendicular to the direction of traffic. The access ramps are divided into approximately 100-foot equal sections. A cluster of three transects placed 3 feet apart is then randomly located in each of these sections. Three samples taken at randomly selected locations across each transect are segregated and labeled individually. For testing, all samples from a transect cluster will be composited to form a 9 to 1 composite sample. Portions of the segregated samples are archived until certification analyses are complete. In the unlikely event that PCB contamination is detected, the applicable section of the access road or ramp will be scraped until repeat sampling and analysis shows PCB contamination is below 25 ppm. Routine sampling of the access ramps will be repeated every quarter. TSCA PCB Storage

**APPENDIX A – EPA Approval Letters**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

31 JAN 2006

Reply to
Attn Of: OCE-084

Mr. Samir M. Jiries
Senior Environmental Manager
Chemical Waste Management of the Northwest
17639 Cedar Springs Lane
Arlington, OR 97812

Re: Request for Amendment of PCB Disposal Approval to Include Landfill Unit L-14
EPA I.D. Number ORD089452353

Dear Mr. Jiries:

This is in response to Chemical Waste Management of the Northwest's (CWMNW) April 14, 2004, letter requesting an amendment to its U.S. Environmental Protection Agency, Region 10 (EPA) issued PCB Disposal Approval to include landfill unit L-14.

In conjunction with this request CWMNW has provided EPA an update to the language in the PCB Disposal Approval, the PCB Operation Plan, and the Closure/Post Closure Plan to include cells 1 through 4 of landfill unit L-14.

EPA has completed its review of the information in CWMNW's submittals of April 14, 2004, and June 30, 2004, in support of this request and the Oregon Department of Environmental Quality's (ODEQ) September 23, 2005, approval of a permit modification to incorporate a groundwater detection monitoring program for landfill L-14 into CWMNW's RCRA Permit No. ORD089452353. Based on this review EPA has decided to modify CWMNW's PCB Disposal Approval to include landfill unit L-14, effective immediately, with the additional clarifying revisions specified in Enclosure A to this letter.

The PCB Disposal Approval and the PCB Operating Plan, as updated by CWMNW are enclosed with this letter as Enclosures B and C (dated December 2005). This updated PCB Disposal Approval does not constitute a reissuance of the PCB Disposal Approval which was originally issued on March 25, 1982, nor does it serve as a final action on the draft PCB Disposal Approval issued on September 18, 1987.

If you have any questions, please feel free to contact Linda Meyer at (206) 553-6636, or Daniel Duncan at (206) 553-6693.

Sincerely,

Michael A. Bussell, Director
Office of Compliance and Enforcement

Enclosures

cc: Brett McKnight, ODEQ
Fredrick Moore, ODEQ

Agency Seattle WA 98101 Oregon Washington

EPA

May 23, 1996

Reply to
Attn of: WCM-127

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Stephen H. Seed
General Manager
Chemical Waste Management of
the Northwest, Inc.
17629 Cedar Springs Lane
Arlington, Oregon 97812

Dear Mr. Seed:

This is in response to Chemical Waste Management of the Northwest, Inc.'s (CWMNW) June 21, 1995 letter requesting the following revisions to its PCB Disposal Approval:

1. Addition of Landfill L-12 to the PCB Disposal Approval.

2. Consolidation of all CWMNW's Chemical Landfill approvals for the Arlington facility into one document.

3. Incorporation of an updated PCB Operating Plan, dated June 1995.

4. Modification of the groundwater monitoring plan to substitute the monitoring of chlorinated organics for monitoring total organic halogens.

5. Updating of regulatory citations.

6. Clarification of what types of PCBs CWMNW is authorized to stabilize.

7. Miscellaneous clarifications, including definition of point of measurement for one(1) foot leachate head level restriction and movement of PCB shipments at CWMNW Arlington facility.

8. Miscellaneous updates, including correcting company name, references to trenches corrected to landfills, and updating legal description of landfills.

I have decided to grant these requests for revision of CWMNW's PCB Disposal Approval, with the additional clarifying revisions listed below. A revised PCB Disposal Approval, including an Updated PCB Operating Plan, is enclosed with this letter as

Appendixes A and B, respectively. This revised PCB Disposal Approval does not constitute a reissuance of the PCB Disposal Approval, which was originally issued on March 25, 1982, nor does it serve as final action on the draft PCB Disposal Approval issued on September 18, 1987:

1. Revision of the PCB Landfills' groundwater monitoring program for consistency with CWMNW's RCRA Part B, No. ORD089452353, including using the same monitoring well network specified for landfills L-5, L-7 and L-9.

2. Other miscellaneous updates, including correcting 40 CFR Part 265 citations to Part 264 citations and corrections of typographical errors.

All correspondence or inquiries on this matter should be directed to Catherine Massimino of my staff, at (206) 553-4153.

Sincerely,

Michael A. Bussell, Director
Office of Waste and
Chemicals Management

Enclosures

# Approval Attachment 3
# Contingency Plan

(Application Appendix G, Received by U.S EPA December 1, 2022)

Approval for Commercial Disposal of Polychlorinated Biphenyls
Chemical Waste Management of the Northwest, Inc.
Arlington, Oregon
U.S. EPA ID: ORD089452353

U.S. Environmental Protection Agency, Region 10
Seattle, Washington

# APPENDIX G
# Contingency Plan

For

Chemical Waste Management of the Northwest, Inc.

*Received by EPA Region 10 on December 1, 2022*

*Appendix to CWMNW's final TSCA PCB application*

# Contingency Plan

**For**

**Chemical Waste Management of the Northwest, Inc.**

**Arlington Facility- ORD 089 452 353**
**17629 Cedar Springs Lane**
**Arlington, Oregon**

**Attachment #4**

This Document is issued by the
Oregon Department of Environmental Quality

Table of Contents

## Preface Contingency Plan

The information contained herein is submitted in accordance with the requirements of [40 CFR 264.50 through 264.56 and 270.14(b)(7)]. These regulations require facilities that treat, store, or dispose of hazardous wastes to have contingency procedures to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, groundwater, or surface water at the facility. The provisions of this Contingency Plan are implemented when it is determined that an event could threaten human health or the environment. A copy of the Contingency Plan is maintained at the facility and has been submitted to all agencies which may be called upon to provide emergency services.

During the period of the permit, changes may be made to the facility that necessitates changes in drawings of physical layouts/plans in the Contingency Plan. These changes in drawings of physical layouts/plans will be submitted to ODEQ and all Contingency Plan holders.

## 1 General Information

This Contingency Plan is for Chemical Waste management of the Northwest Inc. (CWMNW) treatment, storage, and disposal facility located at 17629 Cedar Springs Lane, Arlington, Oregon. Access to this facility is by way of Interstate I 84 to Arlington: south on Highway 19: west on Cedar Springs Lane approximately 5 miles. The site entrance is clearly marked on the right-hand side of Cedar Springs Lane. The facility primarily treats, stores and disposes of RCRA Hazardous waste as defined in [40 CFR Part 261], TSCA wastes as defined in 40 CFR 761 and other types of solid, non-hazardous and non-regulated wastes. The facility location is shown on Figure 4-3 (at the end of the document). The Arlington Facility is located in a remote upland area of northeastern Oregon. Approximately 7.5 miles by air from the Columbia River.

The facility manages hazardous wastes in a variety of ways:

- Hazardous wastes, including debris, are treated in a variety of units.
- Hazardous wastes are stored in a variety of units.
- Hazardous wastes are disposed of in landfill cells and surface impoundments.
- Storm water run-off is collected in surface impoundments.
- Hazardous wastes are transferred off-site to other treatment, storage, and disposal facilities.

The active waste handling operations at the facility are described in detail in Table 4-1 below

## Table 4-1 Waste Contained in Active Areas

| | |
|---|---|
| **Waste Present - Surface Impoundments** | |
| The waste impoundments receive pumpable wastes and sludges. | Aqueous waste with pH greater than two, TCLP wastes and metals less than 268.40 LDR limits |
| Aqueous waste with pH less than 12.5, TCLP wastes and metals less than 268.40 LDR Limits | |
| **Waste Present - Container Storage Areas** | |
| Various containerized liquids and solids are stored in segregated sections of this area. Site records must be consulted for specifics as inventory turnover is high. Waste profile, analytical and SDS information are contained in site records that are readily available | |
| **Waste Present - Landfills** | |
| Stabilized pond residues, contaminated soil, stabilized liquids and sludges, bulk solids, and containerized solids are disposed of in the landfills. The following is a list of waste types deposited in active landfill cells. | |
| **Solid** waste that may be any of the following: | |
| Corrosive | Primary and secondary metals waste |
| Spent halogenated solvents | Pesticide wastes |
| Spent non-halogenated solvents | commercial chemical products |
| Electroplating wastes | Off-specification species |
| Wood products wastes | Spill residues |
| Petroleum refining wastes | Liquids present in "lab packs." |
| **Waste Present - Stabilization Units** | |
| Electroplating sludges | Liquids with pH greater than 2 with characteristic regulated constituents |
| Liquids with pH greater than 2 and metals greater than the 268.40 LDR limits | Liquids with pH 12.5 or greater |
| Electric arc furnace dust | Soils and solids with characteristic regulated constituents |
| Inorganic liquids or solids | Potliner (K088) and various reagents |
| Off-spec materials requiring stabilization | Non-regulated liquids |
| **Waste Present - Waste Water Treatment Units** | |
| Landfill Leachate - F039 | Various Reagents |
| Acid and Alkaline wastewaters | Sodium Hydroxide |
| Wastewaters contaminated with heavy, medium, and/or light petroleum distillate | Acids (HCL, $H_2S0_4$) |
| Heavy metal contaminated wastewater | Ferric Sulfate |
| Cyanide contaminated wastewater | Ferric Chloride |
| Organic solvent contaminated wastewater | Sodium Hypochlorite/Calcium Hyperchlorite |
| ORU wastewaters and process waters | Calcium Carbonate |
| | Hydrogen Peroxide |
| **Waste Present - 90 Day/Sattellite Acumulation Areas** | |
| Flammable Liquids | Corrosive Liquids |
| Various containerized liquids and solids from well drilling operations | Various containerized liquids and solids from lab analysis |
| Various containerized liquids and solids from maintenance buildings | |
| **Waste Present - Containment Buildings** | |
| Potliner Soils or other waste materials contaminated with: | |
| Petroleum hydrocarbons | Chlorinated pesticides |
| Residuals from explosives | Organic compounds |
| **Waste Present - Crushing Facility** | |
| K088 Aluminum Potliner | All Debris types |
| **Waste Present - Organic Recovery Units** | |
| Organic Contaminated Wastes | |
| Petroleum refinery waste | Other organic wastes |
| Pesticide contaminated waste | |
| | |

This Contingency Plan is implemented if there is a fire, explosion, or any unplanned release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

Delegated Corporate authority for emergency coordinators is included as Figure 4-1 below;

**Figure 4-1**

**CORPORATE AUTHORITY**

**FOR EMERGENCY COORDINATOR**

**CHEMICAL WASTE MANAGEMENT OF THE NORTHWEST, INC.**

**CERTIFICATE**

I, Jason Rose, the duly qualified and Area Vice President of the Pacific Northwest Market Area of Waste Management, Inc., a Delaware Corporation, hereby certify that I am authorized by the corporation to grant the authorization below.

**RESOLVED:** That the Corporation hereby grants to the individual(s) designated as "Emergency Coordinator" in the approved Contingency Plan for Chemical Waste Management of the Northwest, Inc. – Arlington to commit such of the Corporation's resources as are needed to carry out such Contingency Plan; and

**BE IT FURTHER RESOLVED:** That such individual(s) designated as "Emergency Coordinator" in such approved Contingency Plan be and hereby are authorized, directed, and empowered to execute and deliver for and on behalf of the Corporation any and all such contracts, agreements, documents and memoranda to be necessary and appropriate to execute the herein authorized resolution.

Dated: 1/16/20

Jason Rose, Area Vice-President
Pacific Northwest Market Area

**Figure 4-1 Delegated Authority**

## 2 Emergency Coordinators

In accordance with [40 CFR 264.52(d) and 264.55], the facility maintains a list of Emergency Coordinators (ECs). The list of ECs designates a primary contact as well as alternates in the order in which they assume responsibility in the absence of the primary contact. This list of ECs is provided as Table 4-2 below.

**Table 4-2 Emergency Coordinators and Warning System**

| Table 4-2 (40 CFR 264.52(a);264.56) Report all emergencies to the Emergency Coordinator or Alternate. | | |
|---|---|---|
| **Emergency Coordinators** | | |
| **Emergency Coordinator** | **Phone #** | **Address** |
| Robert Mulholland (Primary) | Cell (541)-371-0646<br>Office 541-454-3265 | 1310 Childers Road Arlington, OR 97812 |
| Jeff Bufton (Alternate 1) | Cell (541)980-1716<br>Office 541-454-3251 | 1225 W. 2nd ST. Arlington, OR 97812 |
| Jerry Gabbey (Alternate 2) | Cell (541)-965-3038<br>Office 541-454-3228 | 901 Airport Way Arlington, OR 97812 |
| Russ Hayter (Alternate 3) | Cell (541)-656-9084 | 850 Main, Arlington, OR |
| **On-Site Warning System** | **Phone #/Channel #** | **Alt Phone #** |
| Site Paging System | | |
| HF Radio Emergency | Channel 10 | |
| HF Radio Operations | Channel 5 | |
| Base Station; Base 1 | 541-454-3227 | 541-454-3215 |
| Alt Base Station; Base 1 | 541-454-3313 | |

At all times there is an EC on the facility premises or on call (i.e. available to respond to an emergency by reaching the facility within a short period of time) who has the responsibility for coordinating all emergency response measures. The EC is thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of wastes handled, the location of all records within the facility, and the facility layout. In addition, the EC has the authority to commit any resources needed to carry out the contingency plan. Each EC is provided a copy of the Contingency Plan that may be kept at their residence. The EC has complete authority to commit all the resources of CWMNW to implement the Contingency Plan in the event of an emergency. Table 4-3 lists Agency emergency contacts, that may be contacted by the EC in the event of an emergency.

**Table 4-3 Agency Emergency Contacts**

| Table 4-3 Agency Emergency Contacts | | |
|---|---|---|
| **Emergency** | **Organization/Agency²** | **Phone Number** |
| **Any Emergency** | Good Shepherd Medical Center | 541-567-6483 |
| | Mid Columbia Medical Center | 541-296-1111 |
| | Gilliam County Sheriff Non-emergency | 541-351-9530 |
| | Oregon State Police | 866-442-0776 |
| | North Gilliam Ambulance Service | 911 |
| **Fire/Explosion** | Oregon Emergency Management Division | 800-452-0311 |
| | North Gilliam Fire Department | 911 |
| **Poison Information, Hazardous Material Spill or Release** | National Poison Control Center | 800-222-1222 |
| | Chemtrec | 800-424-9300 |
| | National Response Center | 800-424-8802 |
| **National Disaster** | Oregon Emergency Communication Center | 800-452-0311 |
| | American Red Cross | 541-296-3210 |

This table, as well as any other emergency contacts and telephone numbers in the Contingency Plan, is reviewed annually and revised as necessary.

In accordance with 40 CFR 264.55, ECs are selected based on their familiarity with:

- The Facility Layout
- The Contingency Plan
- Operations and activities at the facility
- Location and characteristics of the wastes handled
- Location of records within the facility

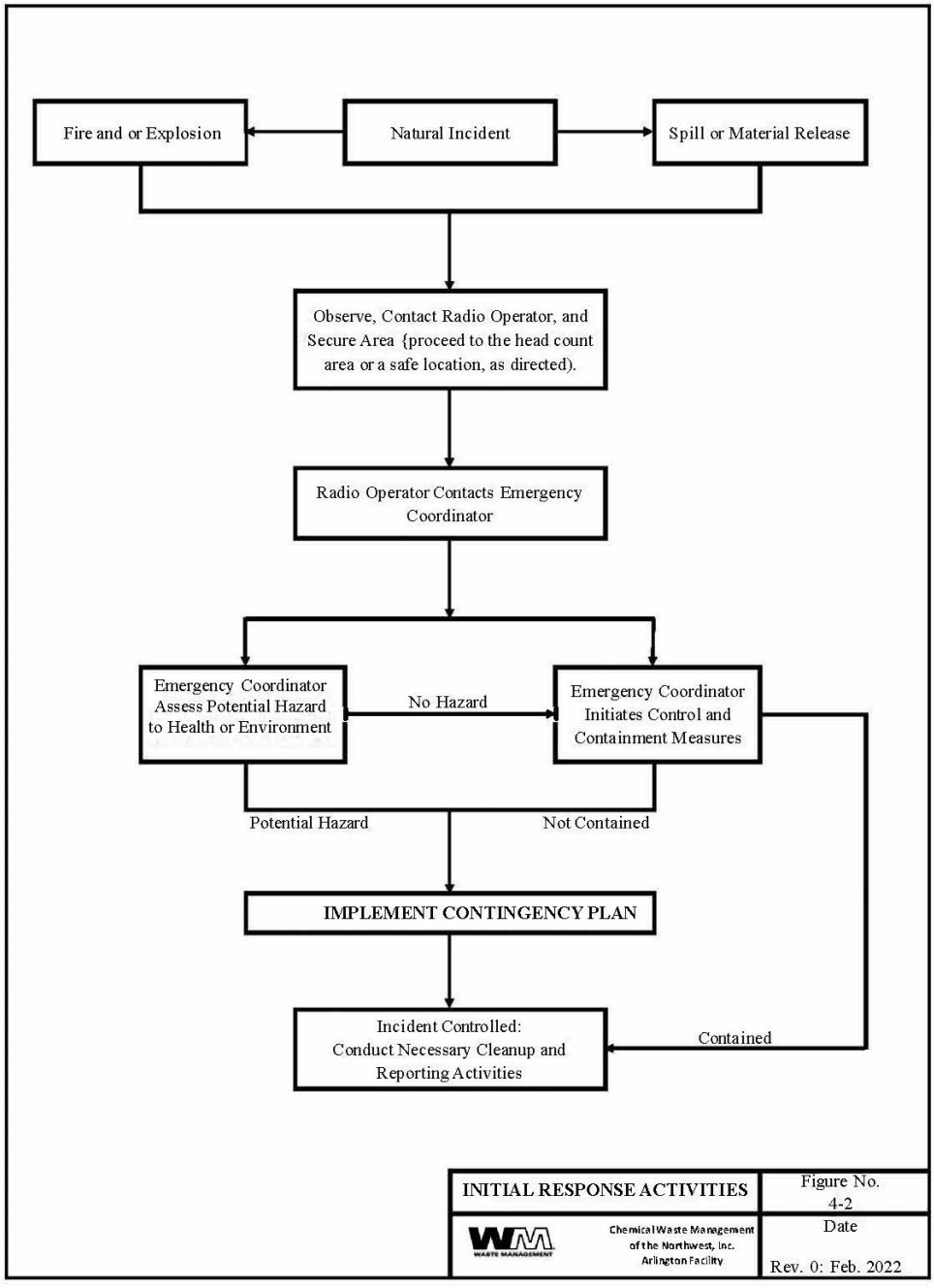
ECs have completed site training requirements, exhibit leadership qualities, and have completed CWMNW probationary employment period. Training records and job descriptions of the EC and Alternate ECs are maintained at the facility for review.

This plan describes the actions ECs must or may carry out during any particular incident. The EC may delegate certain activities to other qualified facility personnel (e.g.; outside notifications may be delegated to the Environmental Manager or other qualified facility personnel). The Emergency Coordinator (or Alternate) will be on call 24 hours a day, 365 days per year. A "On-Call" duty roster will be maintained in all offices and lunchrooms.

# 3 Initiation of the Contingency Plan

In accordance with 40 CFR §§264.52(a) and 264.56(d), the decision to implement the Contingency Plan depends on whether or not an imminent or actual incident could threaten human health or the environment (e.g., release, fire or explosion). This paragraph provides guidance for making these determinations by specifying decision-making criteria to be used during the implementation of the Contingency Plan. The general response and implementation procedures to be used when an incident occurs and the potential notification requirements are outlined in Figure 4-2 below.

**Figure 4-2 Initial Response Activities**



The EC can implement the Contingency Plan in full or in part to meet the needs of the particular incident. A full implementation is appropriate if outside assistance is needed from any emergency agency or if complete facility evacuation is warranted. The following situations require either partial or full implementation of the Contingency Plan:

**Fire and/or explosion**:

- A fire involving hazardous waste or hazardous materials that could threaten human health or the environment (does not include small fires incidental to hot work permits or oxidation of gasses from hydrolysis during treatment).
- The fire spreads and could possibly ignite materials at other locations on-site or could cause heat-induced explosions.
- The fire could spread to areas outside the facility.
- A danger exists that an explosion could occur.
- A danger exists that an explosion could ignite other hazardous wastes at the facility.
- A danger exists that an explosion could result in the release of toxic material.
- An explosion has occurred.
- Any fire or explosion requiring an off-site agency for emergency response.

**Spills or Material Release**:

- A spill that results in release of flammable liquids or vapors that could cause a fire or gas explosion hazard.
- The spill causes the release of toxic liquids or fumes that could threaten human health or the environment.
- The spill cannot be contained inside the facility.
- Any spill or material release that requires an off-site agency for emergency response.

A partial implementation is appropriate when the facility has the resources to address the situation without outside emergency resources in a timely fashion.

The EC implements the Contingency Plan and coordinates the activities of available personnel. All facility employees have received training in implementing the Contingency Plan. It is the responsibility of the individual who detects an incident at the facility to promptly contact a supervisor, the EC, or their designee. When contacted, the supervisor will make a preliminary assessment of the situation and, if warranted, will promptly contact the EC. If the primary EC is unavailable, an alternate EC will be contacted (See Table 4-2). When work is being conducted without an EC present at the site, the Primary EC will appoint a trained designee to carry out EC duties, including notifications, in case of an emergency. In the event an emergency situation should arise, the EC is responsible for assessing the severity of the incident and implementing the Contingency Plan as required.

Should an incident occur after the normal working hours, the designated EC can implement the Contingency Plan, as appropriate, without being at the facility. To do this, the designated EC uses the observations of personnel and security officers who are at the facility to make preliminary determinations of the appropriate course of action.

# 4 Emergency Response Procedures

## 4.1 Notification

In accordance with 40 CFR 264.56(a), upon the discovery of any imminent or actual emergency, the discoverer will promptly notify their supervisor. All employees actively mixing or managing hazardous waste will either have handheld radios, vehicle radios or landline telephones (scale house, lab, shop and transportation) available. The Supervisor will, as necessary, notify the primary EC (or his alternate when the primary EC is unavailable and/or the alternate is a more appropriate contact for the particular situation) of the situation. For after hours incidents, the primary EC or his alternate is generally contacted by phone. Specific notification procedures and requirements for the various types of incidents that would require implementation of this Contingency Plan are provided in the other portions of this plan. A facility map is available to assist personnel in providing necessary details to the EC available. If not immediately available at the facility, the ECs have the authority to issue preliminary decisions prior to arriving at the facility. The EC is responsible for contacting the necessary personnel (response team, cleanup crew, etc.) and instructing them how to proceed.

Supervisors of unaffected areas will generally stay with their personnel and be ready to evacuate and account for the personnel under their supervision.

The siren or other communication systems may be activated to notify facility personnel at the ECs discretion. In the event of a power outage, the radio transponder/repeater is equipped with a battery backup that can last up to 48 hours, depending on usage, so that radios may still be used for communication. Evacuation may be initiated using radios and/or the siren. All employees working in the active treatment area will be equipped with handheld radios, and all site vehicles are equipped with Motorola radios, so that the siren can be activated if needed. Radios are issued in sufficient numbers so that each employee either has a radio or is with an employee who has a radio, including heavy equipment operators. The sites paging system activated thru the phone system is used to notify office personnel at CWM and CRLRC of the contingency. The radios are battery operated and not dependent on electrical power. The sirens are located on top of the water tank at Well 5 near the Lab and the top of the S-2 building in the active area.

The EC will contact available supervisors to inform them of the incident. Site radio channel 10, emergency channel will be used for initial announcement of the emergency, this also alerts neighboring Columbia Ridge Landfill of the incident. During active emergencies, administrative personnel are instructed to curtail routine business calls so the phone lines will remain open to handle emergency calls. Personnel are assigned to the access gates by the EC to control the access of persons during emergencies. The EC is responsible for contacting the appropriate federal, state, or local authorities if their assistance is required. The EC is also responsible for recording those incidents requiring activation of the Contingency Plan in the operating record (recording incidents in the operating record may be delegated to the Environmental Manager or other qualified facility personnel).

Notification of the appropriate agencies is the responsibility of the EC. Pertinent phone numbers are listed in Table 4-2 and Table 4-3.

If a release, fire, or explosion that could threaten human health or the environment outside the facility or that is beyond the facility's emergency response capabilities to control occurs, the EC is responsible for ensuring the appropriate persons/agencies are notified. The following information is typically given to the appropriate persons/agencies:

- Name and telephone number of the reporting individual
- Name and address of facility
- Time and type of incident (e.g., release, fire)
- Name and quantity of material(s) involved, to the extent known
- Extent of injuries, if any
- Possible hazards to human health or the environment outside the facility

Based on the type and severity of the reported injury, the EC will contact the appropriate emergency service and medical facilities. The responding medical unit will direct medical emergency responses once they arrive at the scene. These responsibilities include assessment of the emergency and communication with medical facilities to ascertain which facility the injured person(s) will be sent to for treatment. The EC and medical personnel will evaluate chemical exposures and the need for personnel decontamination prior to leaving the facility. Place the injured person in the care of qualified medical personnel. The facility will notify the appropriate hospital of any information on toxicity and decontamination and any other pertinent information. North Gilliam County Fire Department will be notified in the event of a fire if their participation is needed to contain the fire to the facility. They will protect areas outside the facility and outside the active areas.

## 4.2 Identification of Hazardous Materials

In accordance with 40 CFR 264.56(b) and in the event of a release, the EC will attempt to identify the character, exact source, amount, and areal extent of any release. The initial identification method will include visual inspection, if possible. Paperwork documentation, such as shipping Manifests, Internal Load Inspection Sheets (LIS), Waste Profile Forms (WPF) and other available sources of information will also be reviewed.

Certain wastes that come into the facility are bulk liquids or solids. Should a problem occur during the unloading, storage, treatment, stabilization, or disposal of these wastes, the material can be identified by the WPF numbers and LISs associated with these wastes. Bulk wastes unloaded and disposed of within a landfill can be identified using waste disposal records.

Wastes in containers can be identified at the time of their unloading by WPF numbers, during storage by the LISs and, finally, by their position in the landfill area as indicated in the waste location records.

Wastes being treated in surface impoundments can be identified by manifests and WPF numbers at the time of their deposition and, subsequently, by LISs.

Wastes being treated or stabilized can be identified by WPF numbers, waste characterization review information, and manifests. Inventory records are maintained for all wastes stored at the facility.

Samples will be taken in accordance with the Attachment #1 - *Waste Analysis Plan* (WAP), for chemical analysis if there is a release of materials from containers, tanks, stabilization areas, disposal areas, or surface impoundments that cannot be identified from existing records. Personnel who may have knowledge of the materials involved will be interviewed as necessary.

### 4.3 Assessment

In accordance with CFR 264.56(c) and 264.56(d), the EC will assess possible hazards, both direct and indirect, to human health or the environment. This assessment will be based on:

- The character of the released material(s)
- The exact source of the released material(s)
- The amount of the released material(s)
- A determination of the areal extent of the released material(s)
- An assessment of the possible hazards to human health and the environment

The information used in making assessments may include:

- EC observations
- Reports from facility personnel
- Manifests
- Operating logs
- Operation records
- Waste characterization data
- Miscellaneous sources of information and response assistance maintained at the facility

Once the area of involvement is identified, the EC will acquire and review the appropriate facility records of the wastes stored, treated, or disposed at the site location, including waste analyses, manifests, and other pertinent data, as needed.

Based on this information, the EC will assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment will consider both direct and indirect effects of the release, fire, or explosion (including the effects of any toxic, irritating, or asphyxiating gases that are generated), of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions, of the possibility of heat-induced explosions and spreading fire, and of the potential exposures of personnel to hazardous materials while attempting to control a fire.

If the EC determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, the EC must report their findings where applicable as follows:

- If the ECs assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. The EC must be available to help appropriate officials decide whether local areas should be evacuated; and
- The EC must immediately notify Oregon State Police, North Gilliam Fire Department, Gilliam County Sheriffs Department and the National Response Center (using their 24-hour toll free number 800-424-8802). The report must include:
    - Name and telephone number of the reporter;
    - Name and address of the facility;
    - Time and type of incident (e.g. release, fire);
    - Name and quantity of material(s) involved, to the extent known;
    - The extent of injuries, if any; and
    - The possible hazards to human health, or the environment, outside the facility.

All spills and leaks of hazardous waste greater than the minimum reportable quantity of releases (as defined in 40 CFR 302.4), which do not threaten human health or the environment outside the facility will be reported to the Oregon Emergency management Division (800/452-0311) (ODEQ) and NRC within 24 hours.

If the EC determines the facility has had a release or explosion which could threaten human health or the environment and deems that an evacuation is necessary, the EC will contact the appropriate local authorities (see Table 4-3) and proceed with evacuation procedures as further addressed in the Evacuation Plan section of this document

## 4.4 Control Procedures

In accordance with [40 CFR 264.52(a)], potential releases fall under two general classifications: fire/explosions and spills/releases of materials. Natural disasters such as earthquakes or tornadoes could also result in implementation of the Contingency Plan by causing an event that would fall into one of these two classifications. Because of the facility's location and elevation, inundation by flood is not a probable threat. Run-on and run-off from precipitation events are controlled by a system of dikes, ditches, swales, and collection ponds. The subsections that follow discuss specific control procedures utilized in the event of a fire, explosion, or material spill/release. In all emergency procedures, the initial response is to first protect human health and safety, then protect the environment. Identification, containment, treatment, and disposal assessment are subsequent phases to the contingency implementation process.

### 4.4.1 Fire and/or Explosion

Response personnel will be on standby during all facility emergencies. If a response to a fire has occurred, remote firefighting efforts will concentrate on preventing the fire from spreading to nearby areas. During nonworking hours (evenings, holidays, weekends), the Response Team will be contacted at home. The Organic Recovery Units (ORU) at the facility operate 24/7, these are 3-4 man crews, contact can be made to the ORU crew in the event of an emergency, the ORU crew will then contact the on call EC in the event of a fire, CWMNW will only utilize minimal remote fire suppression techniques as appropriate in order to protect the health and safety of the response crew.

All areas for loading, off-loading, treatment, storage, and disposal are readily accessible by fire-fighting and other emergency vehicles and equipment. The roads leading to the storage, treatment and landfill areas are kept clear of obstructions.

The following general procedures are used for rapid and safe response and control of fire/explosion situations. When an employee discovers a fire or explosion or a situation that could lead to either of these events (spill of flammable material, etc.), they will report it to their supervisor or the EC via the Motorola radio on the Emergency Channel. When contacted, the EC is responsible for obtaining the following information where appropriate:

- The area of the fire and/or explosion or the unsafe condition
- The materials involved and the intensity of the fire or explosion if they have occurred
- Any personnel injuries

The following actions will be taken where applicable in the areas affected by the fire or explosion:

- Work in all potentially impacted areas will be immediately terminated.

- Complete evacuation of the affected area will be initiated if a threat to human health is possible.
- Medical attention will be obtained for any injured person(s) through notification of 911.
- The emergency alarm warning system as necessary, will be used to notify site personnel of an emergency condition if it requires site evacuation. This signal also indicates to employees that 2-way radios will be used only for emergency communication and that all facility personnel who are involved with emergency response should turn on their radios at this time. Also, "EMERGENCY" will be called three (3) times over the 2-way radios to provide an open communication line for emergency use.
- If safe to do so, operating equipment will be shut down, feed lines and additional equipment will be shut down, and nearby containers will be removed or isolated.
- If necessary, the area will be cleared of personnel not actively involved in fire suppression. For site evacuation, these persons will report to the designated rally points for accountability. Rally points are designated in Figure 4-3. The figure shows that several rally points are established around the site so an area upwind of the fire is available. Additional personnel safety equipment will be distributed if needed.
- If safe to do so, injured persons will be removed from the area and medical treatment will be administered by qualified personnel.
- As appropriate, facilities will be inspected for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment where appropriate and safe to do so.
- Fires may be suppressed with water, soil, or dry chemicals. Heat-exposed containers will be cooled with water spray and removed from the fire, if appropriate and possible. Warning/Caution: If a rising sound comes from a venting device or a tank begins to discolor, withdraw from the area immediately. (Possible Boiling Liquid/Expanding Vapor Explosion).
- North Gilliam Fire Services will be called if a fire cannot be controlled or is too dangerous for facility personnel (as determined by EC). North Gilliam Fire Services will assist in perimeter control of the fire

Based on the severity of the fire/explosion, the potential for injury to personnel, and the materials involved, the EC will determine if fire suppression activities/explosion response activities can be safely accomplished by CWMNWpersonnel. The EC is responsible for assessing all fire-fighting/explosion response efforts.

The EC will determine when the fire emergency has passed and will consult with other facility personnel, as appropriate, before the "all clear" message is sent. The "all clear" message will be communicated to facility personnel via two-way radios phones or verbally when the fire has been extinguished and the personnel are no longer endangered. All required dedicated equipment used in the emergency will be cleaned and prepared for use prior to being placed back in service as required by [40 CFR 264.56(h)(2)].

### 2.2.1 **4.4.2 Spill or Material Release**

CWM is responsible for all spill and material releases in the active areas, the following general procedures outline rapid and safe response for the control of spills or material release situations. Figure 4-2 outlines the determination process. When an employee discovers a hazardous chemical spill or process upset resulting in a release, he will immediately report it

to his supervisor or the EC. When contacted, the designated EC will attempt to obtain the following information where applicable:

- Location of the release or spill of hazardous material
- The identity, properties, and characteristics of the material spilled or released
- The direction in which the spill, vapor, or smoke release is heading
- An estimate of the quantity released and/or the rate at which it is being released.
- Any injuries involved

This information is used to assess the magnitude and potential seriousness of the spill or release. If the spill or release is within the facility's emergency response capabilities, the EC will contact and deploy the necessary facility personnel. The EC will contact the appropriate agencies for assistance and reporting.

Because fire is always a potential hazard in spills of flammable materials, possible sources of ignition near the fire will be eliminated, whenever possible. Vehicular traffic will be directed away from the area to avoid ignition of the vapor. Routine work in the area will cease until the spill is contained and safety is restored. If spilled materials are flammable and pose a threat of fire, response personnel may respond with water and hoses for vapor suppression. If advised by the EC, the spill may be flushed with large quantities of water. Materials will be contained and collected for proper treatment and disposal.

If the chances of an impending explosion are high, an appropriate area will be evacuated as determined by the EC. The closest local residence is approximately 1.6 miles from the site. Therefore, a release of even highly flammable material should not threaten local residences with any danger of fire.

Isolation distances and evacuation requirements are dependent on the nature and magnitude of the spill. Small and large spills are defined using the 2016 edition of the North American Emergency Response Guidebook. A small spill is one which involves quantities less than 55 gallons for liquids and less than 660 pounds for solids. A large spill is one which involves quantities that are greater than 55 gallons for liquids or greater than 660 pounds for solids.

The Contingency Plan will be activated for all spills that could directly threaten human health or the environment. The Contingency Plan may not be activated for small spills that do not exceed reportable quantities (as defined in 40 CFR 302.4) and do not pose a threat to human health or the environment. *De minimis* losses include those from normal material handling/processing operations (e.g., loading and unloading, or leaks from pipes) or other facility operations; these small losses are handled as part of the normal site operations and do not require implementation of the Contingency Plan. Spills and releases into secondary containment are generally not considered to pose a threat to human health and the environment and do not generally require implementation of the Contingency Plan.

The following actions will be immediately taken where applicable in the areas affected by a spill or release:

- Initiate complete evacuation of the affected area if a threat to human health is possible
- Clear radio by calling "EMERGENCY" three (3) times over the radio.
- Obtain medical attention for any injured person(s) through notification to 911.
- Dispatch emergency personnel to the site to take the appropriate action as needed.

- Contact the proper authorities if the uncontained spill or release directly threatens human health or the environment outside of the facility.
- Contact the Oregon State police and the Gilliam County Sheriff's Office first so that, if necessary, persons downwind or downgradient of the spill or release can be notified and, if necessary, evacuated. If a large spill occurs, the initial evacuation area downwind will depend on the nature and volume of the material spilled. Evacuation distances established by the latest edition of the North American Emergency Response Guidebook will be referenced where applicable. A copy of this guidebook is kept at the facility for use in the event of an emergency. The EC will use this guidebook or other appropriate guidebooks as a reference for determining safe evacuation distances for spills or releases.

Emergency response personnel will address spills and releases where applicable as follows:

- Put on protective clothing and equipment.
- Once the area can be safely accessed, remove all injured and unnecessary persons from the hazard area.
- Use 2-way radios for emergency-related communication only.
- If a flammable waste is involved, remove all ignition sources, and use spark and explosion-proof equipment and clothing in containment and cleanup.
- If applicable and can be safely attempted, stop the leak and/or eliminate the feed source via valves, fittings, pumps, barriers, dikes, engineering controls, and/ or other appropriate methods.
- In the event of an uncontrolled leak or spill in the tank or treatment areas, close all feedlines to the affected unit.
- As soon as practical after the spill is detected, initiate removal of standing liquids. Treat and dispose of cleanup materials in an appropriate fashion, in accordance with the WAP.
- Remove surrounding materials that could be dangerously reactive with materials in the spill or release. Determine the major and hazardous components in the spilled or released material.
- Contain, divert, and/or absorb spills not contained by dikes or sumps. Spills contained within the dike or sump can be pumped into an appropriate storage tank, drum, or tank truck.
- Where applicable, neutralize spilled material with the appropriate reagent.

### 4.4.3 Power Outages/Equipment Failures

Response to power outages are area specific. If the power outage is facility wide, the first consideration is the communications systems. The phone system will be checked. If the phone system is not active, then the radio-phone or cellular phones systems will be checked to determine if they are working.

The internal radio and alarm systems will also be checked. For internal areas where lighting is critical to operations, emergency lighting will be provided or operations will be suspended. If additional lighting is needed for safe operations, then portable, self-powered light facilities will be used.

Power outages occur periodically at the facility and do not present an emergency condition unless they create or exacerbate other incidents. Back-up power in the form of portable generators are available for certain uses during a power outage.

### 2.2.2 4.4.4 Prevention of Recurrence or Spread of Fires, Explosions, or Releases

Actions to be taken to prevent the recurrence or spread of fires, explosions, or releases include shutting down processes and operations, collecting and containing released waste, and/or recovering or isolating containers. If the facility stops operations in response to an emergency, site personnel will monitor valves, pipes, and other equipment for leaks, pressure buildup, gas generation, or ruptures, as necessary, practical, and safe. General inspection requirements are used as guidelines for these activities. Any areas that appear to have the potential for ignition of a fire or explosion will be isolated (if possible) and contingency procedures will be considered.

## 4.5 Storage and Treatment of Released Material

The EC will make proper arrangements for treatment, storage, or disposal of recovered waste, contaminated soil, water, or any other contaminated material as soon as practical after a release or spill. Waste management activities conducted at the facility will be in accordance with the WAP.

## 4.6 Incompatible Waste

Wastes that are incompatible with the released material will not be treated, stored, or disposed in the affected area until decontamination procedures are complete, to the extent necessary. This will be accomplished by checking the existing WPFs, laboratory data, and/or manifest data to determine the type of material and its compatibility category. Data and procedures described in the WAP will be utilized in making compatibility determinations.

## 4.7 Post-Emergency Equipment Maintenance

All emergency equipment utilized will be cleaned, utilizing on site pressure washers and the truck wash if applicable. Damaged equipment will be repaired by on-site maintenance personnel and emergency response equipment such as fire extinguishers and first aid equipment will replaced after an emergency event. Inspection of all utilized emergency equipment required by this Contingency Plan will be conducted before normal operations are resumed in the affected areas. When there has been full implementation of this Contingency Plan, ODEQ will be notified that cleanup and post-emergency equipment maintenance have been performed in accordance with [40 CFR 264.56 (h) and (i)] before operations are resumed in the affected area(s) of the facility.

# 5 Emergency Equipment

In accordance with 40 CFR 264.52(e)], the facility maintains equipment necessary for emergency situations. A list of the minimum emergency equipment maintained at the facility is located in Table 4-4.

## Table 4-4 Emergency Equipment

| Table 4-4 CWMNW Emergency Equipment | | | | |
|---|---|---|---|---|
| **Emergency Category** | **Equipment Description** | **Quantity** | **Equipment Location** | **Equipment Capability** |
| Reference Materials | 2016 or current edition North American Emergency Response Guidebook | 1 Copy | Scale House Offices | Provide information on evacuation distances, PPE, etc. in case of chemical emergency. |
| | NIOSH Pocket Guide to Chemical Hazards | 1 Copy | Scale House Offices | Provides general industrial hygiene informat |
| Alarm System | Siren | 1 Copy | Well 5 Water tanks<br>S-2 Drum Building | Capable of activating emergency response teams, alerting employees that an emergency has occurred and initiating site evacuation. |
| Facility Communications | Radio System | Multiple | All on site vehicles, scalehouse, lab, Sample Rack, Maintenance Build, WWTP-1 and ORU-2 | Radios are capable of communication between employees, management and Columbia Ridge |
| | Comercial Phone System | Multiple | Scalehouse, lab, Sample Rack, Maintenance Build, WWTP-1 and ORU-2 | Phone lines are capable of communicating with outside emergency response agencies (e.g., County Sheriff). |
| Fire Extingushing Systems | Portable Fire Extinguishers ABC | Multiple | In all buildings and heavy equipment | Capable of extinguishing Class A, B, and C fires |
| | Fire Hoses | 2 | Stored at Outdoor Stabilization Facility | Capable of spraying water onto fire. |
| | Water tank truck (3,500 gallon) Fire Truck 400 gallons | 1 | Parked on site when not in use elsewhere | Capable of moving fire- fighting water and spraying water onto fire. |

Additionally, the following safety and emergency items and equipment are also available at the facility:

- Two-way radios, installed in all vehicles and heavy equipment, handhelds for individual personnel
- Off-site telephone communications
- Additional off-site communications devices include cellular phones
- First aid kits are located in the Lab, Scale house and Maintenance building
- Eye washes are located at all processing areas, SU, Evaporation ponds, WWTPs, ORU, S-2, and the Sample Rack
- oxygen units for supplied air are available at the site
- Showers are available at the site in the following locations: Laboratory, maintenance Shop, SU, WWTPs, S-2, ORU, Sample Rack and evaporation ponds.
- Spill kits are located in all buildings and at all processing areas,
- heavy equipment is such as track hoe, dozers, front end loaders and ADTs are used for mitigating and cleaning up large spills
- Equipment decontamination will occur in areas with impermeable surfaces and liquid containment
- Personnel decontamination will occur in safety showers

**Table 4-5** provides information on the type, location and intended use of decontamination materials for personnel and equipment.

**Table 4-5: Equipment and Personnel Decontamination**

| Material Type | Equipment Description | Quantity | Equipment Location | Equipment Capability |
|---|---|---|---|---|
| Equipment Decontamination Equipment | Miscellaneous cleaning supplies, brooms | Multiple | ORU/TDU, Truck Wash, Maintenance Shop | Pressure washers, broom, and air compressors are capable of cleaning dry and wet material from heavy equipment and containment areas |
| | Pressure washer, | | ORU/TDU, Truck Wash, Site Management Vehicles | |
| | air compressors | | Maintenance Shop, ORU/TDU, B-5, B-4, S-2, B-2, SU | |
| Personnel Decontamination Equipment | Eye washes, showers, garbage bags, brushes, disposable wipes | Multiple | Maintenance Shop,<br>Laboratory, Impoundment A and B<br>Truck sampling rack<br>WWTP1 and 2, ORU, TDU, S-2 | Capable of decontaminating persnonel in a safe manner |
| Spill Kits | Booms, floor dry, brooms and shovels | Multiple | Maintenance Shop, WWTP1 and 2, S-2, | Capable of containing and holding spills prior to final clean up and aiding in final cleanup of small spills |
| Spill Control Equipment | Dozers, Graders, Front end loaders, Track Hoes | Multiple | Landfill, SU, | Capable of excavating and cleaning up large spills |

Emergency eyewash fountains and showers are located in varies areas and buildings and in the laboratory.

Fire extinguishers are available in all buildings, on-site vehicles, and heavy equipment throughout the facility. These portable fire extinguishers are primarily dry chemical types A,

B, and C. Type A is capable of extinguishing fires involving ordinary combustible materials such as wood, cloth, paper, rubber, and many plastics. Type B is capable of extinguishing fires involving flammable liquids, oils, greases, tars, oil-base paints, lacquers, and flammable gases. Type C is capable of extinguishing fires involving energized electrical equipment. All extinguishers comply with National Fire Code standards for portable fire extinguishers. They are inspected after each use (or at least monthly) and recharged as necessary. Records of these inspections are kept in the operating record for a period of 1 year.

PPE maintained at the facility includes protective suits, gloves, boots, goggles, hard hats, face shields and half-face and full-face air purifying respirators. Airline respirators and self-contained breathing apparatus (SCBA) are also available at the facility. The personal protective equipment (PPE) is readily available for implementation of contingency response procedures. Fire specific PPE is maintained in the Fire Truck.

Fire fighting water with adequate volume and pressure to supply water hose stream is available at the facility from supplied on site wells, water trucks, and storage tanks to supply the fire truck in case of emergencies. Onsite Well SW1-5 is 620 ft deep and provides 300 GPM, Well SW1-3 is 1325 ft deep and provides 838 gpm. The fire truck is located on site and contains proper fire fighting PPE for fire response. Soil is also available for emergency fire control and for use as an absorbent material for containment of spills or leaks.

## 6 Coordination Agreements

In accordance with 40 CFR 264.52(c), 264.37, written working agreements are already in existence between CWMNW and the organizations shown in Table 4-6. These agreements are maintained electronically and hard copy in the facility's lower office.

**Table 4-6 Response and Coordination Agreements**

| **Table 4-6 Response and Coordination Agreements** | |
|---|---|
| **North Gilliam County Fire Department 911** | |
| Local Fire Fighting Services | Fire Services Coordinator |
| Department has copy of approved *Contingency Plan*/ Permit Attachment #4 and will Receive any Revised Plan | |
| **Oregon State Police 866-442-0776** | |
| Local Law Enforcement | Sgt./Lt. On-Duty |
| Department has copy of approved *Contingency Plan*/ Permit Attachment #4 and will Receive any Revised Plan | |
| **North Gilliam County Ambulance 911** | |
| EMS Services | Operations Officer |
| Department has copy of approved *Contingency Plan*/ Permit Attachment #4 and will Receive any Revised Plan | |
| **Good Shepherd Medical Center (541) 567-6483** | |
| Hospital/Medical Services | Emergency Depart Director |
| Department has copy of approved *Contingency Plan*/ Permit Attachment #4 and will Receive any Revised Plan | |
| EC will provide applicable MSDS's to the medical center for exposed personnel or upon request | |
| **Mid Columbia Medical Center (541)-296-1111** | |
| Hospital/Medical Services | Emergency Services Coordinator Safety Officer |
| Facility has copy of approved *Contingency Plan*/ Permit Attachment #4 and will Receive any Revised Plan | |
| **Arlington Medical Center (541)-454-2888** | |
| Hospital/Medical Services | Administrator |
| Facility has copy of approved *Contingency Plan*/ Permit Attachment #4 and will Receive any Revised Plan | |
| **Gilliam County Emergency Management (541)-351-9530** | |
| Emergency Services/Law Enforcement | Sheriff - Emergency Management Coordinator |
| County has copy of approved *Contingency Plan*/ Permit Attachment *#4* and will Receive any Revised Plan | |
| **Life Flight (800)-452-7434** | |
| Emergency Services | Flight Desk |
| County has copy of approved *Contingency Plan*/ Permit Attachment *#4* and will Receive any Revised Plan | |

In accordance with 40 CFR 264.53(b)] copies of the Contingency Plan are provided to all of the organizations listed in Table 4-6 to alert them to the fact that the facility treats, stores, and disposes of hazardous wastes and that the potential exists for injuries relating to chemical exposures, burns, respiratory distress, etc. This information alerts the local responders and hospitals of the potential for injuries at the facility. Notification of the need for services is provided thru the local Fontier 911 center located in Condon Oregon (Gilliam County).

In compliance with 40 CFR 264.37(b) and 264.52(e), it is CWMNW's understanding that the local authorities (i.e., Gilliam Sheriff's Department) will respond and provide services to emergency incidents involving hazardous materials as the incident dictates. It is also expected that emergency response services will be available from U.S. EPA and the Oregon Department of Environmental Quality in accordance with [40 CFR 264.37(a)(3)]. Since these agencies must be notified of emergency situations or have teams and individuals that

routinely respond to hazardous materials spills, no special agreement is needed for these services. CWMNW has sent notification letters to various emergency response agencies.

Coordination/contact with emergency response agencies and services may be handled through contact with the Oregon Emergency Management Division at 1-800-452-0311. Because of the rural and isolated setting of CWMNW, site staff and personnel are trained and equipped to provide the necessary response to on site spills and events. The facility will maintain all necessary spill response and fire suppression equipment and supplies on site. If assistance is required, local 911 is contacted, assistance from local fire will be provided at the fence line to the facility property to protect and keep the fire from leaving the facility. This negates the need for an Emergency Response Contractor or on-call Equipment Supplier as described in 40 cfr 264.37(a)(3).

## 7 Evacuation Plan

In accordance with 40 CFR 264.52(f)], in the event of an emergency that could threaten human health or the environment as described herein, it will be necessary to follow an established set of procedures. These procedures will be followed as closely as possible; however, in specific emergency situations, the EC may deviate from the procedures to provide a more effective plan for bringing the situation under control. The EC is responsible for determining which emergency situations require facility evacuation.

The facility employs a warning system with a specific alarm to initiate evacuation of facility areas. The warning is a long blast on the civil defense siren, and a verbal evacuation order on the radio. The radios are issued to personnel throughout the facility and are not dependent on alternating current electrical power. The radio transponder is dependent upon a power source but has a battery back-up with sufficient power to last for 48-hours. Locations are listed in Table 4-4.

In addition to the siren, two-way radios, cellular telephones, and the internal telephone system may be used to notify key facility personnel of the nature of the emergency and the recommended plan of action. Telephones can also be used to summon aid in emergency situations. Employees are trained to respond to the evacuation signals. Total facility evacuation can only be initiated by the EC or their designee.

Evacuation routes and rally points for the facility are shown in Figure 4-3 below. These routes are as follows:

- Route No. 1 - Main Entrance to Cedar Springs Lane
- Persons evacuating by this route will proceed south and east to the main gate. They will rally outside the main gate
- Route No. 2 - Gate 9
- Persons evacuating by this route will proceed east through Gate 9 and then to the rally point at the lower entrance to CWMNW
- Route 3 - Gate 23
- Persons evacuating by this route will proceed west through Gate 23 to the rally point indicated in Figure 4-3 at evacuation route 3.

If the needed evacuation route is blocked due to the incident, an alternate route to the rally point may be used. The EC or their designee will determine the safest route to the rally point and will relay the information to site personnel.

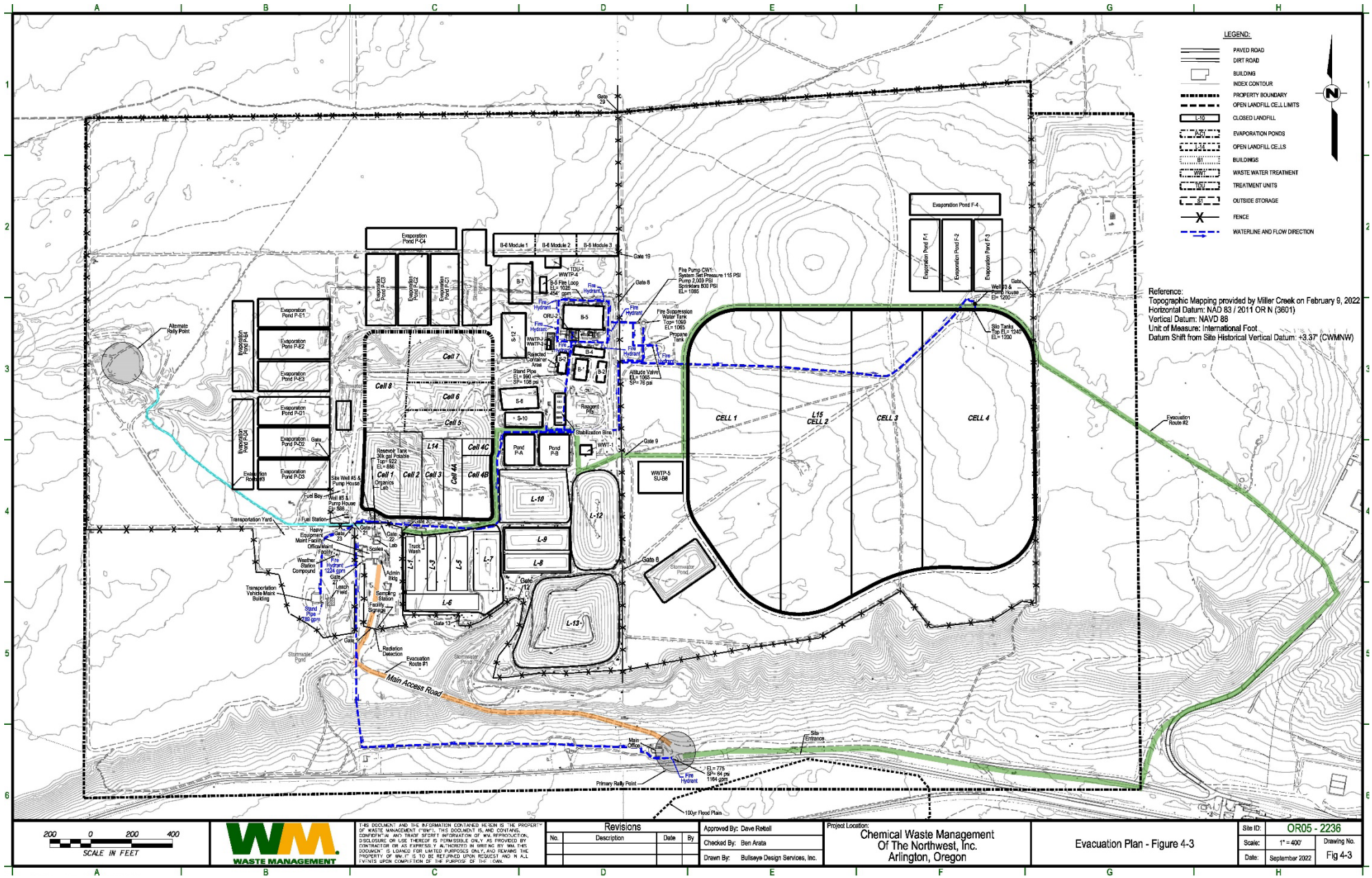



**Figure 4-3 Evacuation Plan**

In the event facility evacuation is called for by the EC, the following actions where applicable will typically be taken:

- The siren signal for facility evacuation will be activated, and a verbal evacuation order will be given over the two-way radios.
- No further entry of unnecessary visitors, contractors, or trucks will be permitted. Vehicular traffic within the facility will cease.
- Site personnel, visitors, and contractors will leave through the exit gates (see Figure 4-3) for general evacuation routes), except for properly equipped employees who may be assigned to control access through the gates.
- No persons will be allowed to remain in or re-enter the area unless specifically authorized by the EC. Those within the fenced area will normally include only the rescue team/emergency response and authorized emergency response personnel.
- Site personnel will be accounted for by area. Supervisors may designate certain gates as the safest exits for employees and may identify an alternate exit if the first choice is inaccessible. To assist in the endeavor, the EC will use the internal telephone/radio system to contact the area supervisors and update them of the nature of the emergency.
- Rally points for specific routes are shown on Figure 4-3. Immediately upon exiting through a gate, the first person from each work area will begin preparing a list to determine if all personnel by area have been evacuated. Master lists of employees are kept on file at the scale house building.
- Upon completion of the employee list, the list will be conveyed to the EC. Personnel will remain at their assigned rally points until the "all clear" signal is given to re-enter the facility. In the case of a more severe emergency situation, employees, once accounted for may rally at a position further from the facility.
- Contract personnel and visitors shall be listed with the name of their company.
- The names of emergency team members involved in emergency response will be determined by the EC.
- A final accounting of personnel will be made by the EC.
- An updated list of all personnel will be maintained to aid in the accountability procedure. Employees will prevent entry of any unauthorized persons into the facility.
- Re-entry will be made only after the "All clear" signal is given by the EC. At the EC's direction, a signal or other notification will be given for re-entry into the facility.
- In all questions of accountability, immediate supervisors will be held responsible for those persons reporting to them. Visitors will be the responsibility of those employees admitting the visitor to the facility. Contractors are the responsibility of those persons administering the individual contracts. Truck drivers are the responsibility of the area supervisor where the truck is loading/unloading. Employees will be assigned to aid in accounting for visitors, contractors, and truckers by reference to the sign-in sheets.
- Drills will be held annually, at a minimum, to practice emergency evacuation.

If the EC's assessment of the situation indicates that evacuation of local areas may be advisable, he will immediately notify the Gilliam County Sheriff. The EC will be available to help appropriate officials decide whether local areas should be evacuated. The Gilliam County Sheriff will notify the local population in accordance with the Gilliam County Emergency Plan.

## 8 Required Reports

There are various reporting requirements applicable to the Contingency Plan and periods of non-compliance contained in 40 CFR 264.56(d) (Emergency Procedures), 40 CFR 270.30(l)(6) (Permit Conditions: 24 hour reporting), OAR 340-104-0056 (Emergency Conditions). The conditions located in the Part B permit, include all the applicable verbal and written requirements.

A report format for emergency events is shown in Table 4-7

**Table 4-7 Emergency Event Reporting Form**

| **Emergency Event Report Form** |
|---|
| Name, address, and phone number of owner or operator |
| Name, address, and phone number of facility |
| Date, time and type of incident (e.g. fire, explosion, etc.) |
| Name and quantity of material(s) involved |
| Extent of injuries (if any) |
| Assessment of actual or potential hazards to human health or the environment |
| Estimated quantities and disposition of material recovered |

## 9 Amendments to the Contingency Plan

The Contingency Plan will be reviewed and updated and/or amended, as necessary, whenever the following occurs:

- The facility permit is revised.
- The Contingency Plan fails in an emergency.
- The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous wastes or hazardous waste constituents, or where there are changes in the responses necessary in any emergency.
- The list of ECs changes.
- The list of emergency equipment changes.
- There are relevant changes in the requirements of Oregon Rule or 40 CFR Part 264.

At a minimum, the Contingency Plan will be reviewed annually and amended and/or updated (as needed). Plan revisions are recorded, and copies of the revisions are sent by the EC to the organizations listed in Table 4-6.

LEGEND:

- PAVED ROAD
- DIRT ROAD
- BUILDING
- INDEX CONTOUR
- PROPERTY BOUNDARY
- OPEN LANDFILL CELL LIMITS
- L-10 — CLOSED LANDFILL
- P-C1 — EVAPORATION PONDS
- L-14 — OPEN LANDFILL CELLS
- B1 — BUILDINGS
- WWT — WASTE WATER TREATMENT
- TDU — TREATMENT UNITS
- ST — OUTSIDE STORAGE
- FENCE
- WATERLINE AND FLOW DIRECTION

Reference:
Topographic Mapping provided by Miller Creek on February 9, 2022
Horizontal Datum: NAD 83 / 2011 OR N (3601)
Vertical Datum: NAVD 88
Unit of Measure: International Foot
Datum Shift from Site Historical Vertical Datum: +3.37' (CWMNW)

Gate 29
Gate 19
Gate 8
Gate 9
Gate 6
Gate 12
Gate 13
Gate 5
Gate 7
Gate 21
Gate 22
Gate 23
Gate 27
Gate 1
Evaporation Pond P-C4
Evaporation Pond P-C3
Evaporation Pond P-C2
Evaporation Pond P-C1
Evaporation Pond P-E1
Evaporation Pond P-E2
Evaporation Pond P-E3
Evaporation Pond P-E4
Evaporation Pond P-D1
Evaporation Pond P-D2
Evaporation Pond P-D3
Evaporation Pond P-D4
Evaporation Pond F-4
Evaporation Pond F-1
Evaporation Pond F-2
Evaporation Pond F-3
Alternate Rally Point
Evacuation Route #3
Evacuation Route #2
Evacuation Route #1
Primary Rally Point
Site Well #5 & Pump House
Well #5 & Pump House El= 886
Well #3 & Pump House El= 1200
Fuel Bay
Fuel Station
Transportation Yard
Transportation Vehicle Maint Building
Heavy Equipment Maint Facility
Office/Maint Facility
Weather Station Compound
Fire Hydrant 1224 gpm
Stand Pipe 789 gpm
Admin Bldg
Sampling Station
Facility Signage
Leach Field
Lab
Scales
Truck Wash
Organics Lab
Radiation Detection
Main Access Road
Main Office
Site Entrance
EL= 775 SP= 64 psi 1164 gpm
100yr Flood Plain
Stormwater Pond
Stormwater Pond Pumps
Reservoir Tank 30k gal Potable Top= 922 EL= 886
Cell 1
Cell 2
Cell 3
Cell 4A
Cell 4B
Cell 4C
Cell 5
Cell 6
Cell 7
Cell 8
L14
L15
CELL 1
CELL 2
CELL 3
CELL 4
L-1
L-3
L-5
L-6
L-7
L-8
L-9
L-10
L-12
L-13
B-1
B-2
B-4
B-5
B-6 Module 1
B-6 Module 2
B-6 Module 3
B-7
S-2
S-6
S-10
S-12
TDU-1
WWTP-4
B-5 Fire Loop EL= 1026 4541 gpm
ORU-2
WWTP-2
WWTP-3
Rejected Container Area
Stand Pipe EL= 990 SP= 108 psi
Reagent Pits
Stabilization Bins
WWT-1
Pond P-A
Pond P-B
WWTP-5 SU-B8
Fire Pump CW1: System Set Pressure 115 PSI Pump 2,000 PSI Sprinklers 600 PSI EL= 1065
Fire Suppression Water Tank Top= 1090 EL= 1065
Propane Tank
Altitude Valve EL= 1065 SP= 76 psi
Silo Tanks Top EL= 1240 EL= 1200
Fire Hydrant

200 0 200 400
SCALE IN FEET

WASTE MANAGEMENT



Revisions

| No. | Description | Date | By |
|---|---|---|---|
| | | | |

| | |
|---|---|
| Approved By: | Dave Rettell |
| Checked By: | Ben Arata |
| Drawn By: | Bullseye Design Services, Inc. |

Project Location:
Chemical Waste Management Of The Northwest, Inc.
Arlington, Oregon

Evacuation Plan - Figure 4-3

| | |
|---|---|
| Site ID: | OR05 - 2236 |
| Scale: | 1" = 400' |
| Date: | September 2022 |
| Drawing No. | Fig 4-3 |

Or05_Overall Site Plan 2022.dgn 9/29/2022 7:55:33 AM

# Approval Attachment 4
# Table 3-1 of Inspection Plan

(excerpt from Application Appendix F, received by U.S EPA December 1, 2022)

Approval for Commercial Disposal of Polychlorinated Biphenyls
Chemical Waste Management of the Northwest, Inc.
Arlington, Oregon
U.S. EPA ID: ORD089452353

U.S. Environmental Protection Agency, Region 10
Seattle, Washington

## Table 3-1 Daily Inspections – Each Operational Day

| Daily Inspections - Each Operational Day | Inspection Element | Frequency |
|---|---|---|
| *Non-Treatment Areas Subject to Spills* | Potential Problems | |
| Truck Scale | Inspect for Spills and removal of previously identified spills | Daily |
| Sampling Area At Entrance | Inspect for Spills and sampling being conducted in approved areas | Daily |
| Sampling Area inside Building S-2 | Inspect for Spills and sampling being conducted in approved areas | Daily |
| Roads | Inspect for Drivability, Spills and removal of previously identified spills | Daily |
| | | |
| *Active Waste Water Treatment Units- Each Operational Day* | Potential Problems | Frequency |
| Active Bulk Storage Tanks WWTP-1, WWTP-2, WWTP-3, WWTP-4, WWTP-5 | Inspect for Spills, Debris and removal of previously identified spills | Daily |
| Active System Components WWTP-1, WWTP-2, WWTP-3, WWTP-4, WWTP-5 | Inspect for structural integrity of system components, cracks in coating, floors | Daily |
| Equipment Storage Active WWTP-1, WWTP-2, WWTP-3, WWTP-4, WWTP-5 | Inspect for improperly stored equipment, used spill cleanup absorbant, debris and housekeeping | Daily |
| Overflow Controls Active WWTP-1, WWTP-2, WWTP-3, WWTP-4, WWTP-5 | Operate High Level Alarms, inspect overflow controls | Daily |
| Active Tanks and Containers WWTP-1, WWTP-2, WWTP-3, WWTP-4, WWTP-5 | Inspect tanks and containers deformation, corrosion, leaks, Compatable storage, and proper labeling | Daily |
| Sumps in Active WWTP-1, WWTP-2, WWTP-3, WWTP-4, WWTP-5 | Inspect sumps for presence of liquids (pump daily by End of Day) | Daily |
| Hoses, Piping, Valves in Active WWTP-1, WWTP-2, WWTP-3, WWTP-4, WWTP-5 | Inspect Piping and Hoses for leaks including WWTP to Pond discharge piping | Daily |
| Discharge Piping in Active WWTP-1, WWTP-2, WWTP-3, WWTP-4, WWTP-5 | Inspect WWTP to Pond discharge piping and secondary containment (>1 gal report) | Daily |
| Containers in Active WWTP-1, WWTP-2, WWTP-3, WWTP-4, WWTP-5 | Inspect container isle space (2.5 ft Min), compatibility, not stored in standing liquids | Daily |
| Containment in Active WWTP-1, WWTP-2, WWTP-3, WWTP-4, WWTP-5 | Inspect for Floor and Sump damage, cracks or deterioration | Daily |
| Containers in Active WWTP-1, WWTP-2, WWTP-3, WWTP-4, WWTP-5 | Inspect 90day containers and tanks for acculumation dates and compliance | Daily |
| Emergency Spill Kits in Active WWTP-1, WWTP-2, WWTP-3, WWTP-4, WWTP-5 | Inspect for proper location and if seal is removed | Daily |
| | | |
| *Active Stabilization Units OSU-1 through OSU-6 - Each Operational Day* | Potential Problems | Frequency |
| OSU-1, OSU-2, OSU-3, OSU-4, OSU-5, OSU-6 | Inspect tanks, sumps, and lined area for damage, corrosion and integrity | Daily |
| OSU-1, OSU-2, OSU-3, OSU-4, OSU-5, OSU-6 | Inspect tanks for spills and leaks | Daily |
| OSU-1, OSU-2, OSU-3, OSU-4, OSU-5, OSU-6 | Inspect for sufficient freeboard in tanks (2 feet) | Daily |
| OSU-1, OSU-2, OSU-3, OSU-4, OSU-5, OSU-6 | Inspect standpipe for damage and integrity | Daily |
| OSU-1, OSU-2, OSU-3, OSU-4, OSU-5, OSU-6 | Inspect for evidence of liquis in primary sumps | Daily |
| | | |
| *Active Stabilization Units B-8 - Each Operational Day* | Potential Problems | Frequency |
| Active Stabilization Unit SU-B8 - Spills and Leaks | Inspect for Spills, Debris and removal of previously identified spills | Daily |
| Active Stabilization Unit SU-B8 - Structural integrity | Inspect for structural integrity of system components, cracks in coating, floors | Daily |
| Active Stabilization Unit SU-B8 - Equipment and cleanup materials | Inspect for improperly stored equipment, used spill cleanup absorbant, debris and housekeeping | Daily |
| Active Stabilization Unit SU-B8 - overflow alarms and controls | Operate High Level Alarms, inspect overflow controls | Daily |
| Active Stabilization Unit SU-B8 - Tanks and Containers | Inspect tanks and containers deformation, corrosion, leaks, Compatable storage, and proper labeling | Daily |
| Active Stabilization Unit SU-B8 - Sumps | Inspect sumps for presence of liquids (pump daily by End of Day) | Daily |
| Active Stabilization Unit SU-B8 - Piping and Hoses | Inspect Piping and Hoses for leaks | Daily |
| Active Stabilization Unit SU-B8 - Discharge pipe | Inspect WWTP to Pond discharge piping and secondary containment (>1 gal report) | Daily |
| Active Stabilization Unit SU-B8 - Containers | Inspect container isle space (2.5 ft Min), compatibility, not stored in standing liquids, lids closed | Daily |
| Active Stabilization Unit SU-B8 - Floor and Sump | Inspect for Floor and Sump damage, cracks or deterioration | Daily |
| Active Stabilization Unit SU-B8 - 90 day containers | Inspect 90day containers and tanks for acculumation dates and compliance | Daily |
| Active Stabilization Unit SU-B8 - Spill Kits | Inspect for proper location and if seal is removed | Daily |
| | | |
| *Active PCB Storage and Transfer Units S-2, S-11, B-5, B-6, B-7, and B-8* | Potential Problems | Frequency |
| Active Drip Pans | Inspect for any liquids in pans, Absorb and containerize spilled or leaked liquids | Daily |

## Table 3-1 Daily Inspections Continued – Each Operational Day

| Daily Inspections - Each Operational Day | Inspection Element | Frequency |
|---|---|---|
| *Active TDU-1 Unit - Each Operational Day* | Potential Problems | Frequency |
| Active TDU-1 Unit - Spills and Leaks | Inspect for Spills, Debris and removal of previously identified spills | Daily |
| Active TDU-1 Unit - Structural integrity | Inspect for structural integrity of system components, cracks in coating, floors | Daily |
| Active TDU-1 Unit - Equipment and cleanup materials | Inspect for improperly stored equipment, used spill cleanup absorbant, debris and housekeeping | Daily |
| Active TDU-1 Unit - overflow alarms and controls | Operate High Level Alarms, inspect overflow controls | Daily |
| Active TDU-1 Unit - Tanks and Containers | Inspect tanks and containers deformation, corrosion, leaks, Compatable storage, and proper labeling | Daily |
| Active TDU-1 Unit - Sumps | Inspect sumps for presence of liquids (pump daily by End of Day) | Daily |
| Active TDU-1 Unit - Piping and Hoses | Inspect Piping and Hoses for leaks including WWTP to Pond discharge piping | Daily |
| Active TDU-1 Unit - Discharge pipe | Inspect WWTP to Pond discharge piping and secondary containment (>1 gal report) | Daily |
| Active TDU-1 Unit - Containers | Inspect container isle space (2.5 ft Min), compatibility, not stored in standing liquids, lids closed | Daily |
| Active TDU-1 Unit - Floor and Sump | Inspect for Floor and Sump damage, cracks or deterioration | Daily |
| Active TDU-1 Unit - 90 day containers | Inspect 90day containers and tanks for acculumation dates and compliance | Daily |
| Active TDU-1 Unit - Spill Kits | Inspect for proper location and if seal is removed | Daily |
| | | |
| *Active Organic Recovery Units ORU-2 and ORU-3 Each Operational Day* | Potential Problems | Frequency |
| Active Organic Recovery Units ORU_2 and ORU-3 - Spills and Leaks | Inspect for Spills, Debris and removal of previously identified spills | Daily |
| Active Organic Recovery Units ORU_2 and ORU-3 - Structural integrity | Inspect for structural integrity of system components, cracks in coating, floors | Daily |
| Active Organic Recovery Units ORU_2 and ORU-3 - Equipment and cleanup materials | Inspect for improperly stored equipment, used spill cleanup absorbant, debris and housekeeping | Daily |
| Active Organic Recovery Units ORU_2 and ORU-3 - overflow alarms and controls | Operate High Level Alarms, inspect overflow controls | Daily |
| Active Organic Recovery Units ORU_2 and ORU-3 - Tanks and Containers | Inspect tanks and containers deformation, corrosion, leaks, Compatable storage, and proper labeling | Daily |
| Active Organic Recovery Units ORU_2 and ORU-3 - Sumps | Inspect sumps for presence of liquids (pump daily by End of Day) | Daily |
| Active Organic Recovery Units ORU_2 and ORU-3 - Piping and Hoses | Inspect Piping and Hoses for leaks including WWTP to Pond discharge piping | Daily |
| Active Organic Recovery Units ORU_2 and ORU-3 - Discharge pipe | Inspect WWTP to Pond discharge piping and secondary containment (>1 gal report) | Daily |
| Active Organic Recovery Units ORU_2 and ORU-3 - Containers | Inspect container isle space (2.5 ft Min), compatibility, not stored in standing liquids, lids closed | Daily |
| Active Organic Recovery Units ORU_2 and ORU-3 - Floor and Sump | Inspect for Floor and Sump damage, cracks or deterioration | Daily |
| Active Organic Recovery Units ORU_2 and ORU-3 - 90 day containers | Inspect 90day containers and tanks for acculumation dates and compliance | Daily |
| Active Organic Recovery Units ORU_2 and ORU-3 - Spill Kits | Inspect for proper location and if seal is removed | Daily |
| | | |
| *Security and Measuring Devices - Each Operational Day* | Potential Problems | Frequency |
| Rain Gage | Record Rainfall, inspect for damage | Daily |

## Table 3-1 Weekly Inspections

| Weekly Inspections | Inspection Element | Frequency |
|---|---|---|
| *Emergency, Security and Measuring Devices* | Potential Problems | |
| Fence | Inspect Entire Perimeter for Breaches and Damage | Weekly |
| Employee Entrance | Inspect access controls are functioning, employees are checking in/out | Weekly |
| Primary Gates | Inspect for Controlled Entry, Damage, and in Working Order | Weekly |
| Secondary Gates | Inspect for Controlled Entry, Damage, Closed and Locked | Weekly |
| Emergency Plan - General Inspection | visual inspection for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment | Weekly |
| | | |
| *Active Container Storage Structures* | Potential Problems | Frequency |
| Active Container Storage Areas S-2, S-6, S-10, S-12, B-1, B-2, B-4, B-5, B-6, B-7, and/or B-8 | Inspect for damage to floors, sumps, berms and/or curbing | Weekly |
| Active Container Storage Areas S-2, S-6, S-10, S-12, B-1, B-2, B-4, B-5, B-6, B-7, and/or B-8 | Inspect for gaps, cracks or other damage | Weekly |
| Active Container Storage Areas S-2, S-6, S-10, S-12, B-1, B-2, B-4, B-5, B-6, B-7, and/or B-8 | Inspect for presence of liquids in sumps, and physical integrity of sumps and standpipes if equipped | Weekly |
| Active Container Storage Areas S-2, S-6, S-10, S-12, B-1, B-2, B-4, B-5, B-6, B-7, and/or B-8 | Inspect storage areas for signs of deterioration of structures | Weekly |
| Active Container Storage Areas S-2, S-6, S-10, S-12, B-1, B-2, B-4, B-5, B-6, B-7, and/or B-8 | Inspect for Spills and removal of spill cleanup materials | Weekly |
| Active Container Storage Areas S-2, S-6, S-10, S-12, B-1, B-2, B-4, B-5, B-6, B-7, and/or B-8 | Inspect waste storage piles to ensure retaining walls are not being overtopped | Weekly |
| Fugitive Emission Controls all active units | Inspect to ensure no visible emissions in each active area, including doors, vents, and louvers using Method 22 | Weekly |
| Emissions Control Equipment all active units | Inspect stacks for visible emissions using Method 22 | Weekly |
| Contamination Control - Decontamination Areas all active units | Inspect for adequate housekeeping, presence of wastes, trackout | Weekly |
| Storage Area Capacity all active units | Check to ensure capacity is not exceeded | Weekly |
| | | |
| *Containers in Storage* | Potential Problems | Frequency |
| Containers General 264.174 | Check for Deterioration, Leaks, Swelling, Lids are attached, | Weekly |
| Containers Labeling | Inspect all containers (incl 90day) to ensure load sheet number and compatability label are visable and readable | Weekly |
| Containers Compatability | Visual Check to ensure containers in segrigated storage are compatable | Weekly |
| Containers Drums, Totes, Pails | Adequate Isle Space (2.5 ft) between rows of containers | Weekly |
| Subpart CC and FF Container Compliance | Inspect affected containers covers for Visiable cracks, holes, gaps | Weekly |
| Subpart CC and FF Container Compliance - Biotreatment Containers | Inspect affected Biotreatment containers covers for Viable Cracks, holes, gaps | Weekly |
| | | |
| *Active Landfills* | Potential Problems | Frequency |
| L-14 and/or L-15 - General | Inspect for wind dispersal of wastes and dust control effectiveness on access roads | Weekly |
| L-14 and/or L-15 Run-On/Run-Off Controls | Inspect for removal of rainfall volumes | Weekly |
| L-14 and/or L-15 Run-On/Run-Off Controls | Inspect berms and ditches for silting, debris, erosion, and ponded water | Weekly |
| L-14 and/or L-15 Leachate Application | Inspect for ponding, runoff, seepage | Weekly |
| Active Landfill L-14 and L-15 | Inspect for Ponding, Run-on, and Runoff | Weekly |
| Active Landfill L-14 and L-15 - Primary Leachate Sumps | Inspect/Record Liquids removed in **Primary** sumps (Report if >48") | Weekly |
| Active Landfill L-14 and L-15 - Secondary Leachate Sumps | Inspect/Record Liquid for Levels in **Secondary** sumps (Report any), riser cover and lock | Weekly |
| Active Landfill L-14 and L-15 - Tertiary Leachate Sumps | Inspect/Record Liquid for Levels in **Tertiary** sumps (Report any), riser cover and lock | Weekly |
| Active Landfill L-14 and L-15 - All Risers | Inspect to ensure riser cover and lock are in place | Weekly |
| Active Landfill L-14 and L-15 - Wind Dispersal | Proper functioning of Wind Dispersal control systems where present | Weekly |
| | | |

## Table 3-1 Weekly Inspections Continued

| Weekly Inspections | Inspection Element | Frequency |
|---|---|---|
| *Active Surface Impoundments* | Potential Problems | Frequency |
| Pond P-A/P-B General | Inspect for Freeboard, must be >1.4 ft | Weekly |
| Active Pond P-A, P-B, P-C, P-D, P-E and/or P-F Sump Accumulated Liquids | Inspect/Record Liquid Levels and volume if pumpable from **Primary Leak Detection** riser(s) (report any) | Weekly |
| Active Pond P-A, P-B, P-C, P-D, P-E and/or P-F | Inspect for indications of sudden decrease/increase in levels | Weekly |
| Active Pond P-A, P-B, P-C, P-D, P-E and/or P-F General and Unloading Areas | Inspect for proper Housekeeping and condition of, Hoses, Pumps, Spills, Piping | Weekly |
| Active Ponds P-C, P-D, P-E and/or P-F | Inspect for Freeboard, must be <2.0 ft | Weekly |
| Active Ponds P-C, P-D, P-E and/or P-F Sumps | Inspect/Record Liquid Levels and volume if pumpable from **Secondary** sumps (Report any) | Weekly |
| Active Ponds P-C, P-D, P-E and/or P-F Sumps | Inspect/Record Liquid Levels and volume if pumpable from **Tertiary** sumps (Report any) | Weekly |
| Active Ponds P-A, P-B, P-C, P-D, P-E and/or P-F Level Indicator | Inspect for indications of sudden decrease/increase in levels | Weekly |
| Active Ponds P-A, P-B, P-C, P-D, P-E and/or P-F Runon/Runoff | Inspect berms and ditches for silting, debris, erosion, and ponded water | Weekly |
| Active Ponds P-A, P-B, P-C, P-D, P-E and/or P-F Structural integrity | Inspect for containment berm failure if pond is above ground | Weekly |
| Active Pond P-A, P-B, P-C, P-D, P-E and/or P-F | Inspect riser cover and lockare in place | Weekly |
| Active Pond P-A, P-B, P-C, P-D, P-E and/or P-F | Inspect for hose damage or leaks | Weekly |
| | | |
| *Active ORU-2, ORU-3 and TDU-1 Treatment Units* | Potential Problems | Frequency |
| Pumps 61.242.2(a)(2) | Visually Inspect Pumps for Leaks from the pump seal | Weekly |
| Active unit leak assesment | visual inspections for visible, audible, or olfactory indications of leaks | Weekly |
| OWS-1 Carbon Adsorption Vent | The exhaust vent stream from the carbon adsorption system is monitored using Method 21 in compliance with 61.355(h) on a regular schedule. Readings exceeding 500ppm VOCs, the existing carbon will be replaced with fresh carbon immediately. | Weekly |
| | | |
| *Active PCB Storage and Transfer Units S-2, S-11, B-5, B-6, B-7, and B-8* | Potential Problems | Frequency |
| Active Storage Areas S-2, S-11, B-5, B-6, B-7, and B-8 | Inspect for unused pans, berm integrity | Weekly |
| Active Drip Pans | Inspect for any liquids in pans, Absorb and containerize spilled or leaked liquids | Weekly |
| Vehicles and Equipment | Visually inspect mobile equipment for presence of contamination, and for unauthorized vehicles | Weekly |
| Active Storage Area floors S-2, S-11, B-5, B-6, B-7, and B-8 | Inspect floors, berms and curbing for cracks, deterioration and area allows safe transfer | Weekly |
| PCB Containers in storage 761.65(c)(5) | Visually inspect PCB Items for out of service dates, spilled or leaked materials | Weekly |
| | | |
| *Active Container Storage Units* | Potential Problems | Frequency |
| Active Storage Units S-2, S-6, S-12, B-1, B-2, B-4, B-5, B-6, B-7, B-8 | Inspect active Outdoor/Building units for Spills and removal of previously identified spills | Weekly |
| Containers in Active Storage S-2, S-6, S-12, B-1, B-2, B-4, B-5, B-6, B-7, B-9 | Inspect for container closure devices being inplace and intact (lids, tarps and | Weekly |
| Active Storage Units S-2, S-6, S-12, B-1, B-2, B-4, B-5, B-6, B-7, B-8 | Inspect for container compatibility | Weekly |
| | | |
| *Closed Landfills L-12 and L-13* | Potential Problems | Frequency |
| Presence of Liquids in Sumps | inspect for presence of pumpable liquids in sumps Record volumes pumped | Weekly |

## Table 3-1 Semi-Annual, Quarterly, and Monthly Inspections

| Semi-Annual Inspections | Inspection Element | Frequency |
|---|---|---|
| *Closed Landfills L-5, L-7, L-9, and L-10* | Potential Problems | |
| Final Cap Condition | Visually Inspect for Ponding, Settling, Cracking, Fractures, Erosion and signs of burrowing animals | Semi-Annual |
| Final Cap Condition - Vegetation | Inspect for areas without vegetation | Semi-Annual |
| Run-On/Run-Off Structures | Inspect for damage, and erosion | Semi-Annual |
| | | |
| *Groundwater Monitoring Wells* | Potential Problems | |
| Groundwater Monitoring Wells | Inspect for wells being visable and accessable | Semi-Annual |
| Groundwater Monitoring Wells | Inspect for area around wells for good housekeeping, Clean | Semi-Annual |
| Groundwater Monitoring Wells | Inspect for casing and cap for damage and cap is locked | Semi-Annual |
| | | |
| | | |
| **Quarterly Inspections** | **Inspection Element** | **Frequency** |
| *Security and Measuring Devices* | Potential Problems | |
| Internal Radio Communications 264.33 | Inspect accessibility and operations | Quarterly |
| | | |
| *Stabilization Units OSU-1 through OSU-6* | Potential Problems | Frequency |
| OSU-1, OSU-2, OSU-3, OSU-4, OSU-5, OSU-10 | Inspect Secondary Sumps for presence of liquids | Quarterly |
| | | |
| *Active Organic Recovery Units ORU-2 and/or ORU-3* | Potential Problems | Frequency |
| Subpart FF inspection | Inspect for visible defects that could result in air pollutant emissions | Quarterly |
| OWS-1 Carbon Adsorption System | Inspect carbon tanks, piping, connection, and covers for evidence of defects and/or deterioration | Quarterly |
| | | |
| *Active Containment Buildings* | Potential Problems | Frequency |
| Emission unit preventive maintenance | Confirm that preventive maintenance is being completed frequency recommended by manufacturer | Quarterly |
| Standby Generators and other engine driven equipment | Confirm that preventive maintenance is being completed frequency recommended by manufacturer | Quarterly |
| | | |
| | | |
| **Monthly Inspections** | **Inspection Element** | **Frequency** |
| *Safety and Emergency Devices* | Potential Problems | |
| Fire Water Line 264.33 | Check for Adequate Pressure (60 psi) | Monthly |
| Emergency Plan - Alarm Systems (Sirens and Flashing Beacon) 264.33 | Check Accessability, Activate Siren, Activate Flashing Beacon | Monthly |
| | | |
| *Closed Landfills L-12. L-13* | Potential Problems | Frequency |
| Final Cap Condition | Inspect for Ponding, Settling, Cracking, Fractures, Erosion and signs of burrowing animals | Monthly |
| Final Cap Condition - Vegetation | Inspect for areas without vegetation | Monthly |
| Run-On/Run-Off Structures | Inspect for damage, and erosion | Monthly |
| Leachate Collection System | Inspect for damaged risers and instrumentation, presence of liquids in the sumps | Monthly |
| | | |
| | | |
| *OWS-1 inside Building B-5* | Potential Problems | Frequency |
| OWS-1 Tanks, Equipment and Piping | Inspect for visible leaks and general condition. . | Monthly |
| OWS-1 Overfill Alarms and systems | The overfill alarm systems shall be tested to insure they are in working order. | Monthly |
| OWS-1 Containment, Sumps | Inspected for evidence of any liquid collection and evidence of any leakage | Monthly |

## Table 3-1 Initial, Annual, and Event Inspections

| Event Based Inspections | Inspection Element | Frequency |
|---|---|---|
| **Rain Event greater than 0.1"** | | |
| Surface water diversion and retention structures | Visually inspect landfill cover, sumps, ponds, embankments, roads, dikes, surface run-off structures, and drainage ways | Rain Event |
| | | |
| Power Outage Greater than 8 Hours | Visual inspections of various areas onsite that would normally be monitored using electronic mechanisms | |
| | | |
| | | |
| *Active Organic Recovery Units ORU-2 and ORU-3* | Potential Problems | **Frequency** |
| Closed Vent Air Pollution Control Equipment | Inspect for visible defects that could result in air pollutant emissions | Initial |
| Subpart FF inspection | Inspect for visible defects that could result in air pollutant emissions | Initial |
| | | |
| | | |
| **Annual Inspections** | **Inspection Element** | **Frequency** |
| *Security and Measuring Devices* | Potential Problems | |
| Warning Signs | Visually Inspect for presence of signage around active areas and for legibility of printing | Annual |
| | | |
| *Active Organic Recovery Units* | Potential Problems | |
| Closed Vent Air Pollution Control Equipment | Visually Inspect Active Organic Recovery Units for defects that could result in air pollutant emissions | Annual |
| | | |
| | | |
| | | |
| **Semi-Annual Inspections** | **Inspection Element** | **Frequency** |
| *Closed Landfills L-5, L-7, L-9, and L-10* | Potential Problems | |
| Final Cap Condition | Visually Inspect for Ponding, Settling, Cracking, Fractures, Erosion and signs of burrowing animals | Semi-Annual |
| Final Cap Condition - Vegetation | Inspect for areas without vegetation | Semi-Annual |
| Run-On/Run-Off Structures | Inspect for damage, and erosion | Semi-Annual |
| | | |
| *Groundwater Monitoring Wells* | Potential Problems | |
| Groundwater Monitoring Wells | Inspect for wells being visable and accessable | Semi-Annual |
| Groundwater Monitoring Wells | Inspect for area around wells for good housekeeping, Clean | Semi-Annual |
| Groundwater Monitoring Wells | Inspect for casing and cap for damage and cap is locked | Semi-Annual |

# Approval Attachment 5
# Landfill Design, Operations and Response Action Plan

(Application Appendix L, received by U.S EPA December 1, 2022)

Approval for Commercial Disposal of Polychlorinated Biphenyls
Chemical Waste Management of the Northwest, Inc.
Arlington, Oregon
U.S. EPA ID: ORD089452353

U.S. Environmental Protection Agency, Region 10
Seattle, Washington

# APPENDIX L
# Landfill Design, Operations and Response Action Plan

For

Chemical Waste Management of the Northwest, Inc.

*Received by EPA Region 10 on December 1, 2022*

*Appendix to CWMNW's final TSCA PCB application*

# Landfill Design, Operations and Response Action Plan

For

Chemical Waste Management of the Northwest, Inc.

Arlington Facility · ORD 089 452 353

17629 Cedar Springs Lane

Arlington, Oregon

Attachment No. 14

This document is to be issued by the
Oregon Department of Environmental Quality

## Contents

TABLES

# LANDFILL DESIGN AND OPERATIONS PLAN

## 1 INTRODUCTION

This *Landfill Design and Operations Plan* addresses existing landfill units included in the Part B permit at the Chemical Waste Management of the Northwest, Inc. (CWMNW) Arlington Facility. Locations of the landfills are shown on Permit Figure 1-1 Facility Layout Map (as contained in the Part B Permit). As shown on the figure, there are two not closed landfills in the Part B permit; L-14, and L-15 and eight landfills, which have been completely filled and closed in accordance with an approved closure plan (L-1, L-3, L-5, L-6, L-7, L-8, L-9, L-10, L-12, and L-13). Permit Figure 1-1 Facility Layout Map (as contained in the Part B Permit) also shows the location of all landfills described above.

Landfill units at the Arlington Facility are used for the permanent disposal of solid hazardous and industrial wastes. On reaching final design grades, the active landfills L14 and L-15 are covered by a final cover designed to minimize soil erosion and infiltration of rainwater through the final cover. Final cover design details for the currently active and future proposed landfills are presented in the following documents:

- *Alternative Final Cover Design Report, Landfills L-12, L-13 and L-14*, Chemical Waste Management Arlington Facility, Gilliam County, Oregon, Applied Soil Water Technologies, August 2014.
- *Alternative Final Cover Design Modification Report, Landfills L-13 and L-14*, Chemical Waste Management Arlington Facility, Gilliam County, Oregon, Geo-Logic Associates, Inc., July 2020.

All types of commercial, industrial, and agricultural wastes, including those identified or listed as hazardous wastes in 40 CFR Part 261, are potential candidates for landfill disposal at the Arlington Facility. Wastes that are not accepted at the facility are listed in Attachment #1 - *Waste Analysis Plan*. In addition, bulk and containerized liquid wastes are not accepted for landfilling, unless:

- The waste has been stabilized so that free liquids no longer are present.
- The container is very small (such as an ampule) or is a lab pack, or
- The container is designed to hold free liquids for use other than storage, such as a battery.
- Waste analysis procedures, which dictate what wastes will be accepted for landfilling, are presented in the facility's Attachment #1 - *Waste Analysis Plan*.

Landfill L-14 was originally permitted with a disposal capacity of $3.1 \times 10^6$. In 2013 CWMNW received approval of the addition of Cell 5 which increased the disposal capacity of Landfill L-14 from $3.1 \times 10^6$ cubic yards to $6.2 \times 10^6$ cubic yards. In 2022 as part of the Part B Renewal CWMNW increased the capacity of L-14 by adding Cells 6 through 8 which increased the capacity by $3.9 \times 10^6$ cubic yards giving a total of $10.1 \times 10^6$ cubic yards. All landfill units are located well above the saturated zone (i.e., the uppermost aquifer). A comprehensive description of the site geology/hydrogeology can be found in the following documents previously submitted to the Oregon Department of Environmental Quality (DEQ):

*Geologic and Hydrogeologic Site Characterization Report*, Part B Permit Application, prepared for Chem-Security Systems, Inc., by Dames and Moore, dated April 1987.

*RCRA Facility Investigation Report for Landfill Units L-9 and L-10*, prepared for Waste Management, Inc. (Arlington, Oregon), by $CH_2$MHill and Rust Environment and Infrastructure, Inc., dated May 20, 1996; and

*Hydrogeologic Investigation and Engineering Design Report for Landfill L-14, Arlington, Oregon*, prepared for Chemical Waste Management of the Northwest, Inc., by Rust Environment and Infrastructure Inc., dated February 1998.

The uppermost aquifer which may potentially be impacted as a result of the landfill activities is monitored in accordance with the facility's Attachment #7 - *Groundwater Monitoring Plan*.

## 1.1 Active Landfills

This *Landfill Design and Operations Plan* focuses on design features and landfill operational procedures for currently active and future landfill cells. Supporting geotechnical studies and engineering analyses performed as part of the landfill siting/design have been previously submitted to the DEQ prior to each landfill unit construction. Active landfill L-14 has been constructed in accordance with approved construction drawings and technical specifications prepared specifically for each phase of construction. Phases approved for waste placement in landfill L-14 include Cells 1, 2, 3 and 4 (modules A, B and C) . Waste placement in Landfill L-14 (cells 5 through 8) will be initiated once all construction CQA documents are approved. Waste Placement in landfill L-15 (Cells 1-4) will be initiated once all documents in accordance with 40 CFR 264.301 through 264.304 (i.e., engineering design report, construction CQA) are submitted and approved by the Department. Construction quality assurance for all landfill cell construction will be in accordance with Attachment #16 - *Construction Quality Assurance Plans*.

Applicable key design components for the currently active landfills and the remaining unconstructed cells within Landfill L-14 and L-15 are summarized in Table 14-2, and Table 14-3.

Active landfills are inspected at least weekly in compliance with Attachment #3 – *Inspection Plan*

## 1.2 Closed Landfills

Ten landfill units (L-1, L-3, L-5, L-6, L-7, L-8, L-9, L-10, L-12, and L-13) have been closed, via placement of a final cover, in accordance with approved closure plan specifications at the time of closure. Table 14-1 summarizes the size and capacity of the closed landfill units. Copies of the closure certifications for all closed landfills are on file at the facility. Closed landfills are regularly inspected in compliance with Attachment #3 – *Inspection Plan*

## Table 14-1 SUMMARY OF SIZE AND CAPACITY OF CLOSED LANDFILL UNITS

| Landfill Unit | Size/Capacity | Operating Status |
|---|---|---|
| L-1 | 60' x 500' x 25' (deep) | Completely filled: July 15, 1981<br>Final closure cover: completed |
| L-3 | 65' x500' x 32.5' (av. depth) | Completely filled: December 1, 1981<br>Final closure cover: completed |
| L-5 | 160' x 350' x 34.5' (av.depth) (RCRA wastes)<br>160' x 150' x 31.75' (av. depth) (non-RCRA wastes) | Completely filled: May 20, 1981<br>Final closure cover: completed |
| L-6 | 175' x 700' x 30' (av. depth) | Completely filled: May 20, 1981<br>Final closure cover: completed |
| L-7 | 255' x 525' x 48' (deep) (RCRA wastes)<br>187' (av.) X 135' x 42' (deep) (non-RCRA wastes)<br><br>Capacity 167 acre-feet (1) | Completely filled: 1990<br>Final closure cover: completed |
| L-8 | 120' x 600' x 30' (deep) (accepted potlining wastes)<br><br>Capacity 65 acre-feet (1) | Completely filled: 1989<br>Final closure cover: completed |
| L-9 | 200' x 400' x 50' (deep) (RCRA wastes)<br>200' x 200' x 40' (deep) (non-RCRA wastes)<br><br>Capacity 101 acre-feet (1) | Completely filled: 1990<br>Final closure cover: completed |
| L-10 | 400' x 600 x 66' (deep)<br><br>Capacity 362 acre-feet | Completely filled: 2002<br>Final closure cover: completed |
| L-12 | 900’ X 440’ X 52’ 493 acre feet | Final closure March 2018 |
| L-13 | 850’ X 900’ X 78’ 1487 acre feet | Final closure December 2020 |

**Notes:**

(1) This is the total capacity of the landfill during its active life and included mounding of waste above grade. The capacity for non-RCRA waste is not included in this amount.

# 2 Active Landfill L-14 and L-15 Design

There are two landfill units in the Part B Permit at the Arlington Facility, L-14 and L-15. These active landfills all received hazardous wastes after November 19, 1980 (the date when hazardous wastes were first regulated under RCRA). Detailed engineering design documents, plans, and specifications for construction of the active landfills are maintained in Attachment #18 - *Landfill Design Drawings*. Pertinent design details are summarized in Tables 14-2, and 14-3.

All landfill cells are surveyed once constructed as part of the CQA process contained in Attachment #16 – *Construction Quality Assurance Plan* in compliance with 40 CFR 264.309.

The following sections discuss the design specifics relating to the active landfills.

# 3 Landfill L-14 Design

## 3.1 General Configuration

Landfill L-14 is designed in compliance with 40 CFR 264.301 and is designed as a multi-phase unit divided into eight hydraulically separated cells. The 2013 expansion of Landfill L-14 added Cell 5 which increased landfill L-14 acreage to 67.9 acres. As part of the Part B Renewal in 2022, Cell 5 was rotated and Cells 6 through 8 were added which added 16.4 acres. Therefore L-14 Cells 1 through 8 now have a planar area 84.3 acres and a total design capacity of approximately $10.1 \times 10^6$ cubic yards. Supporting engineering analyses performed in support of the currently permitted landfill siting/design have been previously submitted to the DEQ in the following documents:

> *Hydrogeologic Investigation and Engineering Design Report for Landfill L-14, Arlington, Oregon*, prepared for Chemical Waste Management of the Northwest, Inc., by Rust Environment and Infrastructure Inc., dated February 1998 - Section 8.0 and Appendix G.
>
> *Engineering Design Report for Landfill L-14 Expansion*, by Civil & Environmental Consultants, dated March 30, 2020

The overall design for L-14 Cells 5-8 remains similar to previously constructed landfill unit Cell 4 which meets or exceeds the minimum technology requirements for landfill units. General design details for the currently permitted Landfill L-14 are summarized in Table 14-2 and 14-4.

Cells 1 through 4(Phases A-C) of Landfill L-14 were constructed as originally designed in 2003, 2005, 2010,2011, 2017, 2018 and 2021.

The 2013 and 2022 expansions of Landfill L-14 resulted in the need to revise the site's surface water management system, because the expanded footprint encroaches into existing or designed surface water management impoundments located directly north of L-14, and some of the surface water conveyance systems, such as surface water conveyance ditches around the new footprint of L-14. Details of the revised surface water management system are provided in the facility *Surface Water Management Plan,* previously Standalone Document #6, which has been removed from the Part B permit.

## 3.2 Landfill L-14 Foundation

Detailed geotechnical analyses were conducted as part of the original L-14 siting/design to evaluate settlement/heave, bearing capacity, and cut slope stability under static and dynamic loading conditions. The results of these evaluations and other analyses presented in this section have been previously submitted to the DEQ in the following document as part of the design/siting documents required for landfill construction approval:

*Hydrogeologic Investigation and Engineering Design Report for Landfill L-14, Arlington, Oregon*, prepared for Chemical Waste Management of the Northwest, Inc., by Rust Environment and Infrastructure Inc., dated February 1998.

*Bearing Capacity, Settlement and Slope Stability Analysis, L-14 Cells 5-8,* by Geosyntec, dated May 20, 2020. The overall geotechnical results for L-14 Cells 5-8 remains similar to previously analysis with the design meets or exceeds the requirements for landfill units.

## 3.3 Foundation Settlement and Bearing Capacity

Soils beneath L-14 have relatively high strength and low compressibility characteristics. Since the landfill's foundation grades are well above (>100 feet) the groundwater table, most of the anticipated settlement is elastic and will occur as the loads are applied.

Settlement of the soils underlying the landfill (and of the soil/bentonite component of the base liner system, for Cells 4 – 8 was evaluated along a select leachate flowline within each of the eight cells. Loads for each cell were calculated based on the proposed final grades of the expanded landfill.

For the eight sections analyzed, the base grade slopes on the floor of L-14 meet the requirement of 40 CFR § 264.301(c)(3)(i) to be constructed at a minimum slope of 1.5%. Conservative estimates of post-settlement slopes show that all sections will maintain positive drainage.

Bearing capacity of the landfill was evaluated in 2013 for Cells 1-5 and also re-evaluated for the expansion of Cell 6-8 to ensure that the base of the landfill would remain stable under the increased load resulting from the landfill expansion. The bearing capacity of the soils underlying the landfill was evaluated assuming that general shear failure will control since the landfill is a relatively non-rigid foundation on the subgrade soils.

For Cells 1-5, two scenarios were evaluated that cover the range of possible failure conditions. Both scenarios used long term or drained soil strength and assume the landfill is at the maximum height. A third scenario that used undrained or short-term soil strength was considered but not evaluated because rapid soil loading conditions that induce undrained conditions in the soil have not occurred as the existing landfill has been filled, nor are they anticipated as part of the landfill development from expansion. Results of the calculations show the soils underlying Landfill L-14 has sufficient bearing capacity to support the Cells 1-5 expanded landfill under the design conditions.

For the expansion of Cells 6-8, L-14 bearing capacity was rechecked using the maximum height and thickness of the landfill. The 2022 L-14 expansion did not increase the overall height of the landfill. Results confirmed past bearing capacity results of sufficient bearing capacity to support the expanded landfill.

## 3.4 Landfill L-14 Liner and Leachate Collection System Design

The liner system for Landfill L-14 was designed in accordance with applicable regulations and EPA guidance. The liner system in certain cells is similar to those of Landfills L-12 and L-13; however, several key enhancements have been made in cells going forward:

Tertiary Sump – Each cell within L-14 has a tertiary sump constructed beneath the primary and secondary leachate collection sump system. The tertiary sump acts as an "engineered vadose zone" in an area of the landfill with the highest likelihood of a potential release (i.e., leachate collection sumps). The tertiary sumps are designed to provide the landfill unit with the earliest possible indication of a release that can be effectively monitored.

Incorporation of Geosynthetic Clay Liner – The liner system in all cells of L-14 utilizes a geosynthetic clay liner (GCL) in the upper composite (primary) liner, instead of the soil/bentonite liner used in Landfills L-12 and L-13. For Cells 4 through 8, GCL will also be used in the construction of the lower composite (secondary) liner as a replacement for the compacted soil/bentonite layer because of the lower permeability of the GCL.

An equivalency evaluation was conducted as part of the original Landfill L-14 permitting in 1998. It was not revised as part of this update because the design conditions have not changed. The original evaluation determined that the flux of water through the soil/bentonite liner was approximately 2.7 times greater than that for a GCL. This, along with other factors (scarcity of soil materials for soil liner, favorable weather conditions, production quality, cost, installation, repairs etc.), makes the GCL a suitable replacement to the soil/bentonite layer and will further reduce the possibility of a release from Landfill L-14. The liner system (base and sideslope) for Landfill L-14 is summarized in Table 14-2.

Within each cell, leachate from the primary and secondary collection systems is channeled toward primary and secondary leachate collection sumps, respectively, located on the landfill bottom. Each primary sump in Cells 1 – 3 is equipped with a sideslope riser to permit sampling and removal of leachate during the operational and post closure periods. Cells 4 through 8 have two primary sideslope risers to provide additional access for pumps and other equipment. In addition, Cells 5 through 8 include a smaller diameter monitoring conduit. This pipe is located along the spine of the herringbone pattern of the base grades, runs through the primary leachate collection sump, and up the sideslope (adjacent to the primary sump risers) to daylight at the landfill perimeter. The pipe is perforated along the floor of each cell, and solid on the sideslope. 40 CFR 264.301 (c)(3)(ii) a geosynthetic drainage composite within the LDS with a transmissivity equal to or greater than $3 \times 10^{-5}$ meters squared per second (m2/sec). The secondary leachate collection layer was also designed using a geonet/geotextile drainage composite meeting this requirement. Per 40 CFR 264.301(c)(3)(iii) the liner material is chemically resistant to the waste managed in the landfill and leachate expected to be generated and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wases, waste cover materials and equipment used at the landfill.

The secondary leachate collection sumps are also equipped with a single riser for each cell located on the sideslopes. The secondary risers are sandwiched between the upper and lower liners to eliminate penetration of the geomembrane liners.

Sampling equipment used for the sampling of the leachate sumps is in accordance with appropriate section of Attachment #1 - WAP.

Leachate is removed from the primary leachate removal sump when leachate levels are near or above the action level. The leachate is pumped through a conveyance system over the lined area or into a vacuum truck and used for dust control within the landfill. Leachate may be transported to WWTP-1 or WWTP-5 on-site wastewater treatment plant for treatment prior to placement in any of the on-site surface impoundments for solar evaporation.

Responses required to address liquids which accumulate in the secondary and tertiary leachate collection sumps are presented in the *Landfill Response Action Plans* (RAP) included in this document.

### 3.5 Base Grade Configuration

The floors of Cells 1 through 3 are planar and slope between 1 and 1.5 percent, from north to south toward a collection sump located along the southern edge of each cell. The base of Cell 4 also slopes from north to south but in a herringbone configuration with a sump at the toe of the southern sideslope. The floor of Cells 5 through 8 is also configured in a herringbone pattern, but slopes at 1.5 percent toward the spine of the herringbone. Cells 1 through 3 each have a shallow trench at the toe of the

sideslope that directs liquids to that cell's sump. Due to the shape of and the herringbone configuration of Cell 4-8, a toe trench is not necessary. The lined sideslopes of the landfill are at a 3:1 (H:V) slope.

Each cell is hydraulically separated from adjacent cells by an intercell berm. Each berm is three feet high (minimum) and is incorporated into the liner and leachate collection system.

### 3.6 LCRS Geocomposite Flow Capacity

The geocomposite layer of the primary leachate collection system is designed to remain free draining under the maximum expected impingement rate. A design method was utilized that has been developed and refined over a number of years by several organizations within the geosynthetics industry and is the industry standard for evaluating flow performance of geonets and geocomposites. The method accounts for various mechanisms that can impact the transmissivity of a drainage layer over time. These include clogging due to biological and chemical activity, clogging due to sediment, and creep of the HDPE ribs of the geonet material. Conservative safety factors were used to account for all these mechanisms in the analysis.

Calculations were performed for several scenarios using the maximum impingement rates from the HELP modeling performed as part of the 1998 permitting. Critical flow lines were analyzed for each cell to ensure that the geocomposite had sufficient flow capacity under the design impingement rate. The calculations document that a geocomposite in Cells 1 through 4 will perform satisfactorily under the loading imposed by the design waste thickness. A minimum required transmissivity was calculated for Cells 5 through 8 which will be used when specifying material for the construction of those cells.

### 3.7 Sump Riser Pipe Structural Integrity

The structural integrity of the sump riser pipes were evaluated based on the design waste thickness. These calculations were prepared for the original L-14 and 2022 design. The expansion of the landfill did not increase the design waste thickness above the sump riser pipes, so no design modifications were required for Cells 1 – 3. For Cells 4 through 8, the diameter of the sump riser pipes was increased from 18 to 24 inches. The updated calculations for Cells 4 through 8 demonstrate that the 24-inch diameter riser pipes satisfy the established factor of safety for structural integrity.

### 3.8 Slope Stability

Slope stability a were performed in the original design and in the 2022 expansion to document that the design grades of Landfill L-14 meet the regulatory requirements. Analyses were performed to model conditions during construction and operation of the landfill as well as after closure of the landfill. The analyses demonstrate that landfill slopes will be stable within the target factor of safety under the design conditions over the life of the landfill and throughout the post-closure period.

### 3.9 Slope Stability Evaluation Methods

The stability of the landfill slopes was evaluated using the limit equilibrium method. In general terms, this method is based on balancing translational and rotational forces of a waste mass sliding along a slip surface. Forces (moments or stresses) resisting instability (resisting forces) of the mass are balanced against those that cause instability (disturbing or driving forces).

Based on industry experience and an analysis of the shear strength of the various materials, it can safely be assumed that the weakest and therefore critical material in the landfill stability is one of the interfaces within the base liner system. The soils beneath the liner system and the waste are stronger than either liner system interface with those materials. Therefore, the calculations were performed to determine the

lowest allowable interface strength of the liner system that meets the established minimum factors of safety.

### 3.10 Interface Friction Angles and Shear Strength

Shear strength data for the base liner system of Cells 1 through 3 was taken from testing performed as part of the detailed design of Cell 3 in 2010. Since the liner system of Cells 1 through 4 are identical and similar materials were used throughout, this is representative.

For Cells 5 through 8, shear strength data from testing performed on the lining system in 2013 was used in the stability analyses. The lining system included the incorporation of GCL as a replacement for the soil/bentonite layer. Representative geosynthetic and soil materials were used in the testing. Cell-specific testing can be performed prior to the construction of Cells 4 through 8 to confirm that the strength envelope of the proposed materials meets the requirements established by this analysis.

### 3.11 Static and Seismic Analysis Parameters

Analyses were performed for static and seismic conditions. Seismic conditions were assessed using a pseudo-static approach where a horizontal force equal to the peak design earthquake acceleration is applied to the waste mass.

Target factor of safety for static interim conditions was a minimum of 1.25, static final waste mass of 1.5 and seismic interim and final waste mass of 1.0.

A peak ground acceleration of 0.22g was chosen for the 2022 Expansion seismic analysis. For the site location, this is the value that has a 2 percent chance of being exceeded in 50 years or a 10% chance of being exceeded in 250 years. The value was obtained from USGS Uniform Hazard Response Spectrum. Conservatively, the peak ground acceleration was increased by a coefficient of 1.2 to a value of 0.22 to take in account the stiffness of soil overlying bedrock.

### 3.12 Stability of Intermediate Grade Slopes

Conservative configurations of intermediate waste slopes were analyzed for the current landfill configuration as well as anticipated future filling patterns. The most critical section for the intermediate filling conditions was assessed to be a north-south section through Cells 4 through 8. It represents the point at which Cells 1 through 4 are filled to their interim capacity and Cell 5 is excavated but has no waste in place. Note that the section analyzed is the most critical, therefore, it is used in the analysis.

The section was analyzed under both static and seismic conditions using conservative assumptions for waste strength, liner and final cover system strength, and earthquake forces. The analyses indicate that the stability of the proposed intermediate filling plans meet or exceed the target minimum factors of safety.

### 3.13 Stability of Final Waste Mass and Cover

The stability of the landfill at final grade was also reevaluated for the 2022 expansion. The critical section is a north-south line that passes through the thickest parts of the landfill and has the longest and steepest slopes with the smallest buttresses. The east and west section was also analyzed. Both sections were analyzed under both static and seismic conditions using conservative assumptions for waste strength, liner and final cover system strength, and earthquake forces. The analyses indicate that the stability of the proposed final grading plan meet or exceed the target minimum factors of safety.

### 3.14 Landfill L-14 Liner Specifications and Installation

The landfill liner systems for the existing Landfill L-14 Cells 1 through 4 have been installed in accordance with approved construction drawings and technical specifications prepared for each cell prior to construction. Quality assurance is conducted during construction as described in Attachment #16 – *Construction Quality Assurance Plan*. Construction Quality Assurance (CQA) reports have been previously submitted to the DEQ certifying that the currently active landfills were constructed in accordance with the approved technical specifications at the time of construction.

Construction of Landfill L-14 cells 5 through 8 will be completed in accordance with construction plans in Attachment #18 - *Landfill Design Drawings*, and construction drawings and technical specifications submitted to the Department. Construction inspection of L14 Cells 5 through 8 will be completed in accordance with approved facility Construction Quality Assurance Plan *Attachment #16 - Construction Quality Assurance Plan*.

### 3.15 Landfill L-14 Final Cover

Final cover systems that will be constructed in Landfill L-14 at closure are presented in the following facility documents:

- *Construction Quality Assurance (CQA) Manual For Landfill Closure Construction*, Chemical Waste Management Arlington Facility, Gilliam County, Oregon, Geo-Logic Associates Inc., January, 2022
- *Alternative Final Cover Design Report, Landfills L-12, L-13 and L-14*, Chemical Waste Management Arlington Facility, Gilliam County, Oregon, Applied Soil Water Technologies, August 2014.
- *Alternative Final Cover Design Modification Report, Landfills L-13 and L-14*, Chemical Waste Management Arlington Facility, Gilliam County, Oregon, Geo-Logic Associates, Inc., July 2020. The final cover report specific for Landfill L-15 will be completed and submitted for approval prior to constructing the final cover on the landfill.

2022 Expansion includes the Alternate Final Cover design. Landfill closure procedures and post-closure maintenance of the landfill cover are described in Attachment #5 - *Closure/Post-Closure Plans.*

### 3.16 Landfill L-14 Final Cover Soil Erosion

The potential erosion of the upper soil layers of the final cover was evaluated to ensure that the cover will continue to perform as intended over the design period. Software developed by the U.S Department of Agriculture, Natural Resources Conservation Service was used to calculate a rate of soil erosion based on factors such as slope length, steepness, soil types, vegetative coverage, and type of vegetation.

Two scenarios were evaluated: (1) unvegetated slopes, which represents a short-term condition just after final cover construction is completed but before vegetation is established; and (2) vegetated slopes which represent the long-term scenario once vegetation has become established. The predicted soil loss rates calculated by the software for the short-term condition indicate that some form of erosion protection may be required on the sideslopes (diversion berms, erosion blankets, etc.) until vegetation is established. For the long-term scenario with established vegetation, predicted soil loss rates are substantially less than the established maximum allowable rate, indicating that minimal erosion is expected and permanent erosion control features such as diversion berms are not required.

**Table 14-2A SUMMARY OF LANDFILL L-14 DESIGN CELLS 1-3**

| Landfill Units | Liner System Design (top to bottom) | Sideslope Design (top to bottom) | Leachate Collection Sumps | Final Cover Design | Approximate Landfill Design Size/Capacity |
|---|---|---|---|---|---|
| L-14<br>(Cells 1-3) | **Upper (Primary) Leachate Collection System**<br>Primary Protective Soil 18-inches(min.)<br>Primary Geocomposite LCRS Layer<br>Primary Liner 60-mil HDPE<br>Primary GCL<br><br>**Lower (Secondary) Leachate Collection System**<br>• Secondary Geocomposite LCRS Layer<br>• Secondary Liner 60-mil HPDE<br>• Secondary Clay Liner<br>• Subgrade | **Upper (Primary) Leachate Collection System**<br>• Primary Protective Soil 12-inches (min.)<br>• Primary Geocomposite LCRS Layer<br>• Primary Liner 60-mil HPDE<br><br>**Lower (Secondary) Liner System**<br>Secondary Geocomposite LCRS Layer<br>Secondary Liner 60-mil HPDE<br>Secondary Clay Liner Minimum 3-ft (min.)<br>Subgrade | **Primary Sump**<br>• Primary Protective Soil 18-inches (min.)<br>• One Primary Leachate Collection Sump Riser 18" HDPE, SDR-11. 3-ft Sump Aggregate with Non-Woven Geotextile wrap.<br>• Primary Geocomposite LCRS Layer<br>• Primary Liner 60-mil HDPE<br>• Primary GCL Two Layers in Sump<br>**Secondary Sump**<br>• One Secondary Leachate Collection Sump Riser 18" HDPE, SDR-11. 2-ft Sump Aggregate with Non-Woven Geotextile wrap.<br>• Secondary Geocomposite LCRS Layer<br>• Secondary Liner 60-mil HPDE<br>• Secondary GCL (sump only)<br>• Secondary Clay Liner (sump only)<br>**Tertiary Sump**<br>• One Tertiary Leachate Collection Sump Riser 18" HDPE, SDR-11. 2-ft min. Sump Aggregate or General Soil with Non-Woven Geotextile wrap.<br>• Tertiary Geocomposite LCRS Layer<br>• Tertiary Liner 60-mil HPDE<br>• Tertiary GCL (sump only).<br>• Subgrade | Approved alternative final cover design; 3 feet of onsite soils over daily cover, see *Attachment #17 Landfill Final Cover Design Plans* | 2013 expansion with Cells 1-5 Size: 1,260' x 1,280' x 104<br><br>Cells 1-5 Capacity: Approx. 6.3 x $10^6$ cubic yards<br><br>2022 Expansion with Cells 1 through 8; Capacity approx. 10.5 x $10^6$ Cubic Yards |

**Table 14-2B SUMMARY OF LANDFILL L-14 DESIGN CELLS 4-8**

| Landfill Units | Liner System Design (top to bottom) | Sideslope Design (top to bottom) | Leachate Collection Sumps | Final Cover Design | Approximate Design Size/Capacity |
|---|---|---|---|---|---|
| L-14<br>Cells 4-8 | **Upper (Primary) Leachate Collection System**<br>Primary Protective Soil 18-inches(min.)<br>Primary Geocomposite LCRS Layer<br>Primary Liner 60-mil HDPE<br>Primary GCL (floor only)<br><br>**Lower (Secondary) Leachate Collection System**<br>• Secondary Geocomposite LCRS Layer<br>• Secondary Liner 60-mil HPDE<br>• Secondary GCL<br>• Subgrade | **Upper (Primary) Leachate Collection System**<br>• Primary Protective Soil 12-inches (min.)<br>• Primary Geocomposite LCRS Layer<br>• Primary Liner 60-mil HPDE<br><br>**Lower (Secondary) Liner System**<br>Secondary Geocomposite LCRS Layer<br>Secondary Liner 60-mil HPDE<br>Secondary GCL<br>Subgrade | **Primary Sump**<br>• Primary Protective Soil 18-inches (min.)<br>• Two Primary Leachate Collection Sump Riser 24" HDPE, SDR-11. One 8" HDPE, SDR-11 monitoring conduit Cells 5-8. 3-ft (min.) Sump Aggregate with Non-Woven Geotextile wrap.<br>• Primary Geocomposite LCRS Layer<br>• Primary Liner 60-mil HDPE<br>• Primary GCL Two Layers in Sump<br><br>**Secondary Sump**<br>• Secondary Leachate Collection Sump Riser 24" HDPE, SDR-11. 3-ft Sump Aggregate with Non-Woven Geotextile wrap.<br>• Secondary Geocomposite LCRS Layer<br>• Secondary Liner 60-mil HPDE<br>• Secondary GCL Two Layers in Sump<br><br>**Tertiary Sump**<br>• One Tertiary Leachate Collection Sump Riser 24" HDPE, SDR-11. 3-ft min. Sump Aggregate or General Soil with Non-Woven Geotextile wrap.<br>• Tertiary Geocomposite LCRS Layer<br>• Tertiary Liner 60-mil HPDE<br>• Tertiary GCL (sump only)<br>• Subgrade | Approved alternative final cover design; 3 feet of onsite soils over daily cover, see *Attachment #17 Landfill Final Cover Design Plans* | 2013 expansion with Cells 1-5 Size: 1,260' x 1,280' x 104<br><br>Cells 1-5 Capacity: Approx. 6.3 x $10^6$ cubic yards<br><br>2022 Expansion with Cells 1 through 8; Capacity approx. 10.1 x $10^6$ Cubic Yards |

# 4 Landfill L-15 Design

Landfill L-15 is designed in compliance with 40 CFR 264.301 and is a multi-phase unit divided into 4 hydraulically separated cells which may be constructed in phases based on operational need. The permitted planar area of L-15 is 202 acres. The design of Landfill L-15 has a total design capacity of approximately (80.4 x$10^6$ cubic yards).

The overall design concept for L-15 is consistent with currently approved Landfill L-14 Cells 4 through 8 at the Arlington Facility, this design meets or exceeds the minimum technology requirements for landfill units. General design details for the currently permitted Landfill L-15 are summarized in Table 14-3.

Landfill L-15 is designed to meet or exceed 40 CFR 264.301 standards and will accept all hazardous and non-hazardous wastes not restricted by Attachment #1 – WAP. These waste are typically generated from but not limited to clean-up, remediation, and industrial waste sources contaminated with PFAS, Pesticides, PCB's. Solvents, PAH's, Dioxins and Furans, heavy metals, and other constituents.

## 4.1 Landfill Configuration

Landfill L-15 is divided into four cells which are further divided into modules for development and disposal purposes. Three inter-cell berms in the north-south direction divide the base area into the four cells, modules are developed based on operational need. The primary and secondary leachate collection and detection systems have been designed to be hydraulically independent.

The landfill base grades (i.e., top of protective layer) vary between 950 feet MSL and 986 feet MSL which vary from approximately 70 feet to 150 feet below the existing grade. The maximum top of landfill elevation is approximately 1,452 feet. The maximum depth of waste in the landfill is approximately 490 feet.

## 4.2 Foundation Settlement and Bearing Capacity

CWMNW has reviewed the subsurface geology of the facility and the soils underlying landfill L-14 and the Columbia Ridge landfill along with the limited well boring logs in the area and has found that soils beneath L-15 are reasonably believed to be consistent across the area and generally have relatively high strength and low compressibility characteristics. Since the landfill's foundation grades are well above (>100 feet) the groundwater table, most of the anticipated settlement is elastic and will occur as the loads are applied. Foundation soil characteristics will be provided in the Engineering Design Report package along with the construction documents prior to construction and waste placement. Additional geotechnical soil borings will be part of the groundwater site characterization development work prior to construction and waste placement

## 4.3 Description of Landfill Lining System

The lining system components of Landfill L-15 have been designed in accordance with 40 CFR Part 264 Subpart N 264.301. Landfill L-15 has been designed with four cells which have a total capacity of approximately 80.4 x$10^6$ cubic yards. The design of L-15 meets or exceeds the requirements detailed in 40 CFR Part 264.301, OAR 340-104, and guidelines for landfill construction as described in *Minimum Technology Guidance on Double Liner Systems for Landfill and Surface Impoundment Design, Construction and Operation* - EPA 530SW85015, and is based on the currently approved liner and final cover system designs for Landfill L-14 cells 4 through 8.

## 4.4 Landfill L-15 Liner and Leachate Collection System Design

The liner system for Landfill L-15 was designed in accordance with applicable regulations (e.g., 40 CFR 264 Subpart N) and EPA guidance for hazardous waste landfills. Each cell within L-15 is designed with a primary liner system draining to a leachate collection sump. The primary liner system is underlain by a secondary leachate collection and removal system draining to a secondary sump. Both the primary and secondary leachate collection sump system are underlain by a tertiary sump. The tertiary sump acts as an "engineered vadose zone" in the area of the landfill with the highest likelihood of a potential release (i.e., leachate collection sumps). The tertiary sumps are designed to provide the landfill unit with the earliest possible indication of a release that can be effectively monitored.

Within each cell, leachate from the primary and secondary collection systems is channeled toward primary and secondary leachate collection sumps, respectively, located on the landfill bottom. Each primary sump has two primary sideslope risers to provide redundant access for pumps and other equipment and a smaller diameter monitoring conduit. The leachate riser pipes, and the monitoring conduit is located along the spine of the herringbone pattern of the base grades, runs through the primary leachate collection sump, and up the sideslope (adjacent to the primary sump risers) to daylight at the landfill perimeter. The riser pipes are perforated along the floor of each cell and in the sump, and non-perforated on the sideslope. 40 CFR 264.301 (c)(3)(ii) a geosynthetic drainage composite within the LDS with a transmissivity equal to or greater than 3 X 10to the minus 5 meters squared per second (m2/sec). The secondary leachate collection layer was designed using a geonet/geotextile drainage composite meeting this requirement. Per 40 CFR 264.301(c)(3)(iii) the liner material is chemically resistant to the waste managed in the landfill and leachate expected to be generated and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wases, waste cover materials and equipment used at the landfill.

The secondary leachate collection sumps are also equipped with a single riser for each cell located on the sideslopes. The secondary risers are sandwiched between the upper and lower liners to eliminate penetration of the geomembrane liners.

Leachate is removed from the primary leachate removal sump by a dedicated pump when leachate levels are near or above the action level. The leachate is either pumped to the on-site evaporation ponds or delivered to the on-site wastewater treatment plant for treatment depending on the concentrations of the contaminants in the leachate.

Responses required to address liquids which accumulate in the secondary leachate collection sumps are presented in the leachate detection discussion below. Responses required to address liquids which accumulate in the tertiary sump are also presented in the RAP.

The geocomposite layer of the primary leachate collection system is designed to remain free draining under the maximum expected impingement rate. The design method for evaluating flow performance of geonets and geocomposites, equivalent to industry standard that have been developed and refined over a number of years by several organizations within the geosynthetics industry and is the industry standard. This standard method accounts for various mechanisms that can impact the transmissivity of a drainage layer over time. These include clogging due to biological and chemical activity, clogging due to sediment, and creep of the HDPE ribs of the geonet material. Conservative safety factors were used to account for all these mechanisms in the analysis. Calculations are provided in the Engineering Design Report package along with the construction documents prior to construction and waste placement.

## 4.5 Geosynthetic Clay Liner

The geosynthetic clay liner system in cells 1- 4 of L-15 meets the design requirements of 40 CFR 264 Subpart N including the requirements of 264.301(c) and utilize a geosynthetic clay liner (GCL)

specifically Resistex® or equivalent, in both the upper composite (primary) and lower (secondary) layers as a replacement for the compacted soil/bentonite layer due to the better performance and the lower permeability of the GCL versus clay/bentonite liner systems.

### 4.6 Base Grade Configuration

The floors of Cells 1 through 4 are planar and slope between 1 and 1.5 percent, from north to south toward a collection sump located along the southern edge of each cell. The lined sideslopes of the landfill are at a 3:1 (H: V) slope.

### 4.7 LCRS Geocomposite Flow Capacity

The geocomposite layer of the primary leachate collection system was designed to remain free draining under the maximum expected impingement rate. A design method was utilized that has been developed and refined over a number of years by several organizations within the geosynthetics industry and is the industry standard for evaluating flow performance of geonets and geocomposites. The method accounts for various mechanisms that can impact the transmissivity of a drainage layer over time. These include clogging due to biological and chemical activity, clogging due to sediment, and creep of the HDPE ribs of the geonet material. Conservative safety factors were used to account for all these mechanisms in the analysis.

Calculations are performed on several scenarios using the maximum impingement rates from HELP modeling. Critical flow lines are analyzed for each cell to ensure that the geocomposite has sufficient flow capacity under the design impingement rate. A minimum required transmissivity is also calculated that is used when specifying material for the construction of those cells. Calculations will be provided in the Engineering Design Report package along with the construction documents prior to construction and waste placement.

### 4.8 Sump Riser Pipe Structural Integrity

The structural integrity of the sump riser pipes is evaluated based on the design waste thickness, similar to the calculations prepared for the original L-14 design. Calculations will be provided in the Engineering Design Report package along with the construction documents prior to construction and waste placement.

### 4.9 Slope Stability - Intermediate Slopes

Slope stability and foundation analyses is performed to document that the design grades of Landfill L-15 meet the regulatory requirements. Analyses is performed to model conditions during construction and operation of the landfill as well as after closure of the landfill. The analyses will demonstrate that landfill slopes are stable within the target factor of safety under the design conditions over the life of the landfill and throughout the post-closure period. Calculations will be provided in the Engineering Design Report package along with the construction documents prior to construction and waste placement.

### 4.10 Interface Friction Angles and Shear Strength

The lining system will include the incorporation of GCL as approved in cells 4 through 8 in L-14. Interface friction angles and shear strength calculations are provided in the Engineering Design Report package along with the construction documents prior to construction and waste placement.

### 4.11 Static and Seismic Analysis Parameters

Analyses is performed for static and seismic conditions. Seismic conditions are assessed using a pseudo-static approach where a horizontal force equal to the peak design earthquake acceleration is applied to the waste mass.

A peak ground acceleration of 0.22g is utilized consistent with Landfill L-14 calculations for the seismic analysis. For the site location, this is the value that has a 2 percent chance of being exceeded in 50 years or a 10% chance of being exceeded in 250 years. The value was obtained from USGS Uniform Hazard Response Spectrum. Conservatively, the peak ground acceleration was increased by a coefficient of 1.2 to a value of 0.22 to take in account the stiffness of soil overlying bedrock.

### 4.12 Landfill L-15 Liner Specifications and Installation

Cells 1 through 4 are constructed and inspected during construction in accordance with construction drawings, technical specifications, and quality assurance manuals prepared and approved for each cell.

**Table 14-3 SUMMARY OF LANDFILL L-15 DESIGN**

| Landfill Units | Liner System Design (top to bottom) | Sideslope Design (top to bottom) | Leachate Collection Sumps 1-5 | Final Cover Design | Approximate Landfill Design Capacity/Size |
|---|---|---|---|---|---|
| L-15<br>Cells 1-4 | **Upper (Primary) Leachate Collection System**<br>• Primary Protective Soil 18-inches(min.)<br>• Primary Geocomposite LCRS Layer<br>• Primary Liner 60-mil HDPE<br>• Primary GCL (floor only)<br><br>**Lower (Secondary) Leachate Collection System**<br>• Secondary Geocomposite LCRS Layer<br>• Secondary Liner 60-mil HPDE<br>• Secondary GCL<br>• Subgrade | **Upper (Primary) Leachate Collection System**<br>• Primary Protective Soil 12-inches (min.)<br>• Primary Geocomposite LCRS Layer<br>• Primary Liner 60-mil HPDE<br><br>**Lower (Secondary) Liner System**<br>• Secondary Geocomposite LCRS Layer<br>• Secondary Liner 60-mil HPDE<br>• Secondary GCL<br>• Subgrade | **Primary Sump**<br>• Primary Protective Soil<br>• Two Primary Leachate Collection Sump Aggregate with Non-Woven Geotextile wrap.<br>• Primary Geocomposite LCRS Layer<br>• Primary Liner 60-mil HDPE<br>• Primary GCL Two Layers in Sump.<br><br>**Secondary Sump**<br>• Secondary Leachate Collection Sump Riser 24" HDPE, SDR-11. 3-ft Sump Aggregate with Non-Woven Geotextile wrap.<br>• Secondary Geocomposite LCRS Layer<br>• Secondary Liner 60-mil HPDE<br>• Secondary GCL Two Layers in Sump<br><br>**Tertiary Sump**<br>• One Tertiary Leachate Collection Sump Riser 24" HDPE, SDR-11. 3-ft min. Sump Aggregate or General Soil with Non-Woven Geotextile wrap.<br>• Tertiary Geocomposite LCRS Layer<br>• Tertiary Liner 60-mil HPDE<br>• Tertiary GCL (sump only).<br>• Subgrade | Approved alternative final cover design; 3 feet of onsite soils over daily cover, see *Attachment #17 Landfill Final Cover Design Plans* | Size: 202 Planar Acers Approx. 80.4 x $10^6$ cubic yards) |

# 5 LANDFILL OPERATIONS

## 5.1 Waste Acceptance Procedures

Containerized waste received at the Arlington Facility is screened in accordance with the facility's *Attachment #1 - Waste Analysis Plan* including Appendix A of the WAP. If the waste is found to be acceptable the load is sent directly to the landfill, unless weather or operating conditions dictate otherwise (in which case the load is delivered to an appropriate storage area, provided the wastes are compatible). Containers are delivered to the landfill for disposal via both offsite and onsite trucks and placed in rows immediately adjacent to each other.

Containers of bulk solid waste material (i.e., wastes having no free liquids) must be at least 90 percent full prior to placement in the landfill. CWMNW personnel have the option of rejecting the load (see *Attachment #1- Waste Analysis Plan*) or filling the containers to the maximum extent possible prior to disposal in the landfill.

The only containers with free liquids that are landfilled are very small containers (i.e., ampules), containers of hazardous waste in overpacked drums (i.e., lab packs), and containers designed to hold free liquids for use other than storage (i.e., batteries). Each lab pack (as defined by U.S. Department of Transportation [DOT] hazardous materials regulations [40 CFR Parts 173, 178, and 179]) must be certified by the generator or packer (through the manifest system and prior approval and instructions from CWMNW) that:

- Hazardous wastes are packaged in non-leaking inside containers.
- Inside containers are of a sufficient design and constructed of a material that will not dangerously react, decompose, or ignite with the contained waste.
- Inside containers are sealed tightly and securely.
- The solidification material within the lab pack is compatible with the contained wastes and will not react, ignite, or decompose on contact with the wastes.
- Incompatible wastes are not placed in the same lab pack; and
- Containers of reactive wastes other than cyanide or sulfide bearing wastes are not placed in the lab packs unless they have been previously treated or rendered non-reactive.

Liquids that are contained in lab packs, small containers, ampules, or batteries may be disposed without stabilization and related testing and verification procedures, provided other restrictions specified in the RCRA Permit or by other laws or regulations, do not prohibit the land disposal of such wastes.

Hazardous Wastes with free liquids are solidified with the following non-biodegradable sorbents:

> **(i)** Inorganic minerals, other inorganic materials, and elemental carbon (e.g., aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; activated charcoal/activated carbon); or
>
> **(ii)** High molecular weight synthetic polymers (e.g., polyethylene, high density

polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross-linked allylstyrene and tertiary butyl co polymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

**(iii)** Mixtures of these nonbiodegradable materials.

The Arlington Facility does not dispose of any waste which is generated as a liquid and subsequently stabilized by the generator (or another off-site treatment facility) unless CWMNW has conducted testing (in accordance with *Attachment #1- Waste Analysis Plan*) to ensure that the waste has been properly stabilized.

The Arlington Facility does not dispose of any waste which is restricted from land disposal under 40 CFR Part 268 unless the applicable treatment standards as specified in 40 CFR Part 268 have been achieved or an approved treatment variance has been received. In addition, as new wastes are specified for land disposal restriction under 40 CFR Part 268, CWMNW immediately discontinue disposing of such wastes upon the effective date of the 40 CFR Part 268 regulation, unless the treatment standard as specified in 40 CFR Part 268 has been achieved or an approved treatment variance has been received. CWMNW will accept any Corrective Action Management Units (CAMU)-eligible waste which is in compliance with the requirements contained in 40 CFR 264.555. Prior to placement of CAMU-eligible wastes by the Arlington Facility, the Oregon Department of Environmental Quality must not object to its placement.

CWMNW maintains the following items in the operating record required under § 264.73:

**(a)** On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks in compliance with *Attachment #16 – Construction Quality Assurance Plan*; and

**(b)** The contents of each cell and the approximate location of each hazardous waste type within each cell.

## 5.2 Fill Sequencing

Wastes are placed in the landfill in a series of lifts, with each lift consisting of either a single or double layer of waste material. If containers are part of the disposal material, they are placed in the lower layer; the upper layer consists of bulk waste materials.

The filling sequence for the landfill units starts at the bottom of one cell of the landfill and moves through a series of lifts toward the landfill top. The depth of the lifts will vary, depending on the material being landfilled.

Access to the working face within each landfill is over temporary haul roads constructed on covered, filled waste material. As filling progresses, a terraced embankment is developed, with the highest point near the outer edges (sides) of the landfill. As each lift is completed, the temporary haul road is extended to the next lift. When the capacity of this stage of the landfill is reached, a new series of lifts are placed beginning with the lowest lift and filling upwards and back against the previously filled lifts. The former haul road is filled as each new lift begins.

Landfill L-14 and L-15 are designed as a multi-phase landfill consisting of hydraulically separated cells. This multi-phase design allows CWMNW flexibility with respect to operational considerations, predicted landfill disposal capacity requirements and closure. Based on current operational and infrastructure needs, CWMNW intends to construct the L-14 Cell 5 next. This

likely will be followed by development of Cells 6 through 8. Landfill L-15 cell modules will be constructed in phases beginning with Cell 1A on the South end of the landfill. For all landfill fill progressions, if operational and infrastructure needs change, other fill sequences may be implemented at CWMNW's discretion.

### 5.3 Control of Run-on and Run-off

The run-on prevention system at the CWMNW is typical for an arid climate, where the annual average rainfall is less than 10 inches and a high intensity rainfall event such as the 25-year, 24-hour storm would produce only 1.8 inches of rain. Details of the run-on and run-off control features are presented in the facility's *Surface Water Management Plan* which has been removed from the Part B permit. The surface water plan is updated prior to additional features and units being constructed

A series of ditches constructed around the perimeter of the landfills route run-on to one of six onsite surface water basins (see Figure 1-1 Facility Layout Map contained in the Part B Permit), where the water will be evaporated. The ditches are typically triangular, unlined earthen channels with 3H:1V sideslopes. The ditches are sized to convey the 25year, 24hour storm event and are designed with freeboard that will allow them to carry at least two times the design flow. Calculations performed as part of the surface water analysis indicate that the freeboard will allow the ditches to handle the 100year, 24-hour storm event without overtopping.

- *Surface Water Management Plan*, Chemical Waste Management of the Northwest, Inc, Arlington, Oregon, Golder Associates, Inc., October 2019

Surface water management plan was designed to achieve zero off-site discharge of run-off. Ditching is either 3:1 or 2:1 Stormwater ponds are designed to contain the 100-year, 7-Day Event plus an additional 10%. Southern Peripheral Conveyance Ditches are designed to convey the 100-year, 24-hour Event. Interior conveyance ditches are designed to convey 25-year, 24-hour event.

The berms and run-on ditches are inspected regularly, and after significant rainfall events in accordance with the facility's *Attachment #3 - Inspection Plan*. Signs of deterioration, clogging, or failure are reported and appropriate repair actions, involving standard soil placement and compaction techniques, are taken to affect the necessary repairs.

In order to prevent discharge of run-off from the landfills surface onto the adjacent ground during each phase of operation, the following plan is implemented. For the period of time during which waste elevations are below surrounding grade, precipitation is contained within each landfill by the lined sideslopes. During this phase of operation, no run-off can discharge onto the adjacent ground. Any precipitation falling inside the perimeter of the active cells of the landfill is directed to temporary, geomembrane-lined surface water basins within each landfill footprint.

The temporary detention basins are located in each cell between the toe of the waste slope and the cell divider berms, or immediately adjacent to each cell. Each area is lined with a geomembrane to prevent infiltration into the waste. The basins are sized to contain run-off from a 25-year, 24-hour storm.

Liquid collected in the temporary basins is removed by vacuum trucks or portable pumps maintained and operated by site personnel and routed to the facility's surface waste impoundments. Precipitation run-off is tested for toxicity in accordance with the procedures

established in the facility's Attachment #1- *Waste Analysis Plan* and the exclusion in 40 CFR § 261.3(c)(2)(i), and then treated or discharged directly as appropriate.

Once waste elevations within the landfill are above the adjacent perimeter grade, and prior to constructing final cover, precipitation falling on the outer slopes of the landfill is directed to a channel formed by the toe of the slope and the liner, which directs flow to a basin. A berm is maintained around the perimeter of the landfill to prevent overflow.

Precipitation that falls on the landfill areas with final cover in place or into cells that do not contain waste is considered uncontaminated and is discharged without testing. After final cover is in place, no contaminated run-off is allowed to flow onto the adjacent covered areas. No contaminated vehicles are allowed to operate on the final cover, and incident precipitation is directed away from these areas.

Run-off from active slope areas could flow downslope over previously covered areas during placement of subsequent lifts of waste. To prevent this from occurring, a channel is maintained along the toe of the exposed waste slope, adjacent to the cover of the previous lift. All run-off from the active slope areas is collected in the channel, which has the capacity to contain a 25-year, 24-hour storm. To minimize this occurrence, cover is placed over the active areas of the slope as soon as practical.

## 5.4 Construction Inspection of Landfills

During construction of new landfills, an independent Construction Quality Assurance firm is onsite to monitor and inspect material quality and installation of the materials for compliance with approved construction drawings and technical specifications.

Detailed construction quality assurance procedures are contained in the facility's Attachment #16 - *Construction Quality Assurance Plan* and project specific construction quality assurance manuals. Upon completion of landfill construction activities, a CQA report is prepared by the independent engineering firm certifying that the landfill was constructed in accordance with the approved construction drawings and technical specifications.

Inspections are conducted during installation of all components of the landfill liners, leachate collection and removal systems, and protective soil and geosynthetic layers. Geomembrane liners and covers are inspected during construction and/or installation for uniformity, damage, proper seaming, and imperfections. Upon completion of installation, the geomembranes are inspected and tested to verify seam integrity, and to verify there are no tears, punctures, or blisters. Other routine landfill inspection procedures are described in the facility's Attachment #3 - *Inspection Plan*.

## 5.5 Final Cover

Final cover systems that will be constructed after waste reaches final design grades in Landfill L-14 and Landfill L-15 are presented in the following facility documents contained in Attachment #17 *–Landfill Final Cover Design Plan* and *Alternative Final Cover Design Report, Landfills L-12, L-13, and L-14*. Landfill closure procedures and post-closure maintenance of the landfill cover are described in Attachment #5 - *Closure/Post-Closure Plan*. Final cover analysis of the Alternative Final Cover design will be confirmed prior to constructing the final cover section on Landfill L-15

## 5.6 Ignitable and Reactive Wastes

Per the requirements of 264.312(a) Reactive wastes, as defined by RCRA, are not to be landfilled prior to undergoing approved treatment. All bulk reactive wastes accepted by the facility for storage, treatment, and/or disposal are processed to a level such that the resulting material(s) no longer meet(s) the definition of a reactive waste under 40 CFR § 261.21 or 261.23. The resulting material(s) are analyzed per the facility's Attachment #1- *Waste Analysis Plan* to verify that they are not ignitable or reactive wastes prior to final disposal in the landfill. Per the requirements of 264.17 the waste is segregated and protected from sources of ignition or reaction and from heat producing chemical reactions. Containerized solid ignitable wastes are landfilled in compliance with 40 CFR § 264.312(b) including the application of a daily cover of non-combustible wastes or inert soils. Ignitable liquids are shipped off site for disposal.

### 5.6.1 Incinerable Ignitable or Reactive Labpack Packaging

Incinerable lab packs according to the requirements in 40 CFR 268.42(c)(1) may be packaged in fiber drums in place of metal outer containers. Such fiber drums must meet the DOT specifications in 49 CFR 173.12 and be overpacked according to the requirements in paragraph (b) of this section.

## 5.7 Incompatible Wastes

Wastes placed in the landfills are assigned to one of three categories (combustibles, TSCA PCBs, and toxics) as a result of data gathered in accordance with the facility's Attachment #1- *Waste Analysis Plan*. Wastes classified and are placed in the landfill using the compatibility provisions of Attachment #1 - WAP to ensure that no incompatible wastes are grouped in the same category.

The wastes are assigned to a specific area or cell of the landfill based on the classification. The location of each waste load is recorded according to a three-dimensional grid system. Site landfill disposal procedures specify that inert material or neutral wastes are used to segregate cells and prevent the mixing of potentially incompatible wastes.

## 5.8 Control of Wind Dispersal of Wastes

Potential sources of fugitive dust emissions are: 1) earthmoving activities, such as excavation and transport of material for daily cover, 2) unvegetated active areas of the landfill, such as partially completed final covers or partially excavated trenches, 3) truck traffic on haul roads and ramps, 4) waste unloading operations in the landfills, and 5) exposed waste surface in the landfills.

Fugitive dust can be a problem at the Arlington Facility because of the semi-arid climate and persistent winds. The wind is usually from the west at about 5 to 10 miles per hour (mph); however, there are occasional gusts of 20 to 40 mph. Control of fugitive dust at the landfill is accomplished by surface application of leachate within the lined areas of the landfill. Leachate is pumped from the leachate detection sumps in an individual landfill unit either to a container located within the lined footprint of the respective landfill or directly to the leachate distribution system (sprinklers or drip hoses) for the respective landfill. No leachate leaves the landfill from which it was pumped and the leachate, at all times, remains over the lined area that collected the leachate. If not applied directly, the leachate is collected in a portable container that serves as a reservoir for times dust control is required. The leachate is piped to drip systems and sprinkler

systems for dust control as required. The drip and sprinkler systems are activated during periods before and during dust generation weather. Leachate is not sprinkled on roadways to prevent potential tracking from the landfill. Sprinkler systems are configured and operated so that no leachate is allowed to drift out of the footprint of the respective landfill. Both sprinkler and drip systems are operated to prevent landfill sideslope erosion. Leachate application rates are controlled to prevent puddles, saturated soil conditions, excessive percolation, and runoff. Leachate may also be pumped into a vacuum or tanker truck and sent to onsite wastewater treatment units WWTP-1 or WWTP-5

The wastewater treatment unit operator oversees the application of leachate to the landfill surface. The operator monitors and adjusts the system for appropriate leachate application rates, appropriate spray sizing for wind drift conditions, piping and equipment leaks and ground conditions.

Inspections of the landfill sprinkler and drip systems are conducted regularly. The inspector visually checks the leachate application area for evidence of spray leaving the footprint of the landfill, sideslope application, runoff, and puddling. Other dust control measures include:

- Application of clean water from a water truck onto the exposed surface within the landfill, and
- Spraying of clean water from a fire truck hose onto dry bulk wastes during unloading operations.

The water truck spray rate is equivalent to 0.012 inches of rain per year per application. Since the average daily evaporation rate is 0.10 inches per day, it is apparent that clean water applied in this manner will evaporate before it can percolate into the subsoils. Therefore, no groundwater contamination is possible with this method of dust control.

The procedure of spraying water via a water hose is only used when unloading dry bulk wastes such as baghouse dust. Assuming the waste has a moisture content of 5 percent, the amount of water sprayed is not sufficient to even achieve the normal moisture content (10 percent) of the soil used as clean cover in the landfills. Therefore, the additional water poses no threat to groundwater.

Dust emissions from earthmoving activities and truck haul roads and ramps are minimized on dry, windy days by periodic watering of areas being traveled and maintenance of a prepared roadbed of aggregate material. Dust emissions from the active areas of the landfills are reduced with the compaction of surface materials by heavy equipment traffic.

The offloading of container wastes in the landfills presents no dust emission problem. Most bulk solid wastes, which are end dumped from trucks, are typically not dust generating wastes because of their moisture content, large particles, and/or other physical properties. Stabilized wastes are non-dust generating. However, the unloading of fine particle bulk solids, such as fly ash or baghouse dust, is a potential dust emission problem. The current practice is to unload these wastes in an area of the landfill protected from wind and as close to the final disposal area as possible.

Once final cover is placed on each landfill, vegetation is established to control wind erosion of final cover soils.

## 5.9 Disposal of Dioxin-Containing Wastes

This management plan contains procedures for disposal of dioxin-containing wastes, (i.e., F020, F021, F022, F023, F026, F027, and F028) which satisfy the unique requirements for managing these wastes identified in 40 CFR § 264.317. The following items are addressed in this management plan:

- Exposure control practices.
- Volumes, concentrations of dioxin-containing wastes, and potential to migrate; and
- Disposal procedures for land disposal.

### 5.9.1 Exposure Control Practices

Existing management standards under 40 CFR § 264 Subpart N are adequate to prevent the dispersion of dioxin-contaminated wastes by wind dispersal. However, as an added precaution these wastes are disposed in sealed impermeable enclosures to eliminate any potential for dispersal of waste.

In instances where waste is transferred and/or stabilized into these enclosures for disposal, personnel are provided adequate personnel protective equipment as is detailed in the facility's exposure monitoring and prevention procedures.

### 5.9.2 Waste Characteristics

The volumes of dioxin-containing wastes to be managed for landfill varies depending upon the process generating the waste. For example, dioxin-containing waste may be generated at large cleanup sites and transported in lined bulk containers and then landfilled in sealed bulk enclosures. In addition, these wastes may be generated and transported in small containers, such as well investigation samples to be stabilized and landfilled in one or more impermeable enclosures. The estimated volumes to be received for landfill are identified during the profile approval process for each waste stream.

The concentration of dioxin or furans in the wastes designated as F020, F021, F022, F023, F026, F027, intended to be managed for disposal at the Arlington Facility, are below the regulated levels identified in 40 CFR § 268.40 for wastewaters or non-wastewaters except for debris and wastes intended to be managed for disposal as corrective action management unit (CAMU)-eligible wastes.

Debris contaminated waste can be treated in accordance with the alternative treatment standard in 40 CFR § 268.45 as discussed in Attachment #10 – Stabilization and *Debris Treatment Plan*.

All of these wastes accepted at the Arlington Facility for landfilling are disposed of in impermeable enclosures that are capped and sealed to reduce the possibility of migration of these wastes to groundwater, surface water, or air to protect human health and the environment.

### 5.9.3 Disposal Procedures

As identified above, all dioxin-containing wastes that are disposed of in a landfill will be confined within an impermeable enclosure that is later capped and sealed. These enclosures may be drums, prefabricated HDPE macroencapsulation boxes, super sacks (non-rigid containers consisting of an inner layer of impermeable material (such as polyethylene) and an outer layer of woven fabric capable of withstanding waste loading, transport, and disposal without tearing), or

may be constructed of flexible membrane liner (FML) within the landfill. FMLs may be polyethylene (HDPE, LLDPE) or other materials as appropriate. Macroencapsulation enclosures constructed within the landfill will have FML above and below the waste to be encapsulated with the overlying FML seamed to the underlying FML at the edges. All macroencapsulation FML panels will be seamed using either fusion or extrusion methods.

CQA of macroencapsulation enclosures within the landfill will consist of non-destructive testing of the seams in accordance with the Attachment #16 - *Construction Quality Assurance Plan*. Other requirements of the Construction Quality Assurance Plan may be implemented at the CQA Engineer's discretion.

Liquids accepted for disposal in a landfill are solidified prior to being landfilled. All containers, in which these wastes have been removed and where the waste has contacted the container, are triple rinsed to remove any hazardous residue. This rinsate is also stabilized and landfilled in similar enclosures discussed above.

### 5.10 Special Requirements for Containers

Containers holding wastes subject to LDR requirements to be disposed in the landfill must be either:

**315(a);** At least 90 percent full when placed in the landfill, or

**315(b);** Crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.

Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if the following requirements are met:

**316(a);** Hazardous waste must be packaged in non-leaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the contained waste. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the Department of Transportation (DOT) hazardous materials regulations (49 CFR parts 173, 178, and 179), if those regulations specify a particular inside container for the waste.

**316(b);** The inside containers must be overpacked in an open head DOT-specification metal shipping container (49 CFR parts 178 and 179) of no more than 416-liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with § 264.314(d), to completely sorb all of the liquid contents of the inside containers. The metal outer container must be full after it has been packed withinside containers and sorbent material.

**316(c;)** The sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers, in accordance with § 264.17(b)

**316(d);** Incompatible wastes, as defined in § 260.10 of this chapter, must not be placed in the same outside container

# 6 ALR Engineering Calculations Specific to Landfill 14

## 6.1 Introduction

This Response Action Plan for Landfill L-14 (RAP) has been prepared for the Chemical Waste Management of the Northwest, Inc. (CWMNW) Arlington Facility in accordance with Title 40, Code of Federal Regulations (40 CFR) Part 264 Subpart N, Oregon Administrative Rule (OAR) 340-104, and United States Environmental Protection Agency (EPA) guidelines as outlined in the double liner and leak detection rules for hazardous waste and disposal units (FR 57, January 29, 1992).

## 6.2 Purpose

The owners or operators of landfill units subject to RCRA Subtitle C (Title 40, Code of Federal Regulations [40 CFR] Part 264.3018 or (d)) regulations must have an approved RAP before receipt of waste at the landfill facility. 40 CFR Part 264.301, also adopted by the Oregon Administrative Code (OAR 340-100-002), requires that the leachate collection system between the liners and immediately above the bottom composite liner functions as a leachate collection and removal system as well as a leak detection system (LDS).

A RAP describes the criteria used to address liquids which accumulate in the LDS. Details of the definition of the "Action Leakage Rate" (ALR) which trigger a response on the part of the owner/operator to address such accumulations are given in 40 CFR Part 264.302

## 6.3 Project Location

The CWMNW Arlington Facility is located in Gilliam County, Oregon.

Landfill L-14 has been designed with eight cells and will have a total capacity of approximately 10.1 x$10^6$ cubic yards. The design of L-14 meets or exceeds the requirements detailed in 40 CFR Part 264.301, OAR 340-104, and guidelines for landfill construction as described in *Minimum Technology Guidance on Double Liner Systems for Landfill and Surface Impoundment Design, Construction and Operation* - EPA 530SW85014

## 6.4 Landfill Development

Landfill L-14 is divided into eight cells for development and operational purposes. Four inter-cell berms in the north-south direction and three intercell berm in the east west direction divide the base area into eight cells. The primary and secondary leachate collection and detection systems have been designed to be hydraulically independent.

The landfill base grades (i.e., top of protective layer) vary between 934 feet MSL and 954 feet MSL which vary from 35 feet above to 80 feet below the existing grade. The maximum top of landfill elevation is approximately 1,150 feet. The maximum depth of waste in the landfill remains and is approximately 205 feet.

## 6.5 Description of Landfill Lining System

The lining system components of Landfill L-14 have been designed in accordance with 40 CFR Part 264 Subpart N 264.301.

## 6.6 Base Liner System

The base liner system incorporates separate primary and secondary composite lining systems as described in the L-14 liner and leachate collection system section above covering the liner system in this document.

## 6.7 Leachate Leak Detection Systems

Each of the eight cells of Landfill L-14 are constructed with a primary leachate collection system (LCS) and a secondary LDS and a Tertiary LDS as described in the L-14 liner and leachate collection system section above.

Leachate flow between cells will be prevented by means of separation/ intercell berms built into the base liner and leachate collection system. Separation of the cells will also be ensured in the design of primary and secondary leachate collection systems. Both the primary and the secondary leachate collection systems will have separate sumps where leachate collection, pumping, and leak detection functions will be performed by means of sideslope risers. Complete design analyses for Cells 1-4 LCS and the LDS are provided in the following document previously submitted to the DEQ:

- *Hydrogeologic Investigation and Engineering Design Report for Landfill L-14, Arlington, Oregon*, prepared for Chemical Waste Management of the Northwest, Inc., by Rust Environment and Infrastructure Inc., dated February 1998.

The design analyses for Cell 5-8 LCS and LDS are provided in the following document recently submitted to the DEQ.

- *Engineering Design Report, L14 Expansion Application, Chemical Waste Management of the Northwest, Arlington,* By Civil & Environmental Consultants Oregon, dated March 30, 2020.

## 6.8 Tertiary Sump Monitoring System

In addition to the primary and secondary lining systems, a tertiary detection monitoring system has been designed directly beneath the LDS sump to monitor any releases into the environment. Inside the LCS and LDS sumps, the leachate heads will reach measurable levels during landfill operations, increasing the probability of liner leakage at these locations. The tertiary sump monitoring system will be capable of detecting releases through the LDS sump as well as enable sampling of the liquids collected for purposes of chemical analyses.

## 6.9 Description of the LDS

Subtitle C Part 264.301 (c)(3)(ii) allows the use of a geosynthetic drainage composite within the LDS with a transmissivity equal to or greater than $3x10^{-5}$ meters squared per second ($m^2$/sec). The secondary leachate collection layer was designed using a geonet/geotextile drainage composite meeting this requirement.

## 6.10 Leachate Management

Fluids from landfill operations (leachate) are intercepted by the primary leachate collection and removal system (LCRS) and collected in the sumps. The LDS is designed to effectively intercept

liquids which may have migrated through the primary lining system. Fluids intercepted by the LDS are also channeled to discrete sumps from which they are removed.

Fluids in the leachate systems are measured and recorded in compliance with *Attachment #3 – Inspection Plan*

### 6.11 Potential Sources of Liquid in LDS

The potential sources of liquids that may be collected within the secondary leachate detection/collection system can be broadly categorized as:

- construction-related,
- internal; and
- external sources.

The following sections addresses the potential sources of liquids inside the secondary leachate detection/collection system; and (2) quantification of the liquids due to each potential source.

### 6.12 Construction-Related Liquids

Liquids generated during installation of the lining system components and before placement of the waste inside each cell will be classified as construction-related liquids.

### 6.13 Internal Sources

Internal sources of liquids in the secondary detection/collection system sump typically consist of: (1) compression of the soil component of the primary lining system; and (2) compression of the secondary drainage layer material. Compression water from the primary lining system drains into the secondary detection/collection system.

### 6.14 External Sources

External liquid sources inside the secondary detection/collection system consist of: (1) leakage of leachate and initial water within the primary drainage layer through the primary geomembrane/GCL system; (2) compression water from the secondary soil/bentonite liner leaking into the secondary collection system through pinholes or larger-size construction related flaws through the secondary geomembrane; and (3) seepage of groundwater and/or other liquids through the secondary lining system if an inward gradient condition exist

### 6.15 Liquid Removal Capacity of the LDS

The minimum transmissivity of the geocomposite drainage layers for the LDS has been specified as $3x10^{-5}$ $m^2$/sec in the final leak detection rule. This is interpreted as the long-term value which is obtained after the application of several safety factors to account for potential long-term performance degradation. Some of these factors are related to the long-term filtration performance of the geotextile component and some to the long-term structural performance of the geonet. As discussed in the Section below, these factors have been included in the analysis of the long-term performance of the LDS.

## 6.16 LDS Design Considerations

Table 14-4 summarizes the safety factors used in the evaluation of the long-term performance of the geonet/geotextile drainage composite.

**TABLE 14-4 Drainage Geocomposite Partial Reduction Factors**

DRAINAGE GEOCOMPOSITE PARTIAL REDUCTION FACTORS

| Performance Factor | Assigned Safety Factor |
|---|---|
| Out-of-plane creep (geonet) | 2.0 |
| Void intrusion (geonet) | 1.2 |
| Soil clogging (geotextile) | 1.0 |
| Chemical clogging (geotextile) | 1.5 |
| Biological clogging (geotextile) | 1.2 |
| Overall Reduction Factor (Product of all above factors) | 4.32 |

The geotextile-related factors listed in Table 14-4 do not necessarily affect the long-term transmissivity of the geonet. However, they force a decrease in the flow rate of liquid into the geonet, and therefore, indirectly affect the flow capacity of the drainage geocomposite.

The initial transmissivity value for the drainage geocomposite selected for the LDS was obtained from a transmissivity vs. normal stress chart published by the manufacturer. The maximum design waste thickness was used to calculate the design normal stress. This published transmissivity value, in part, includes the effect of the creep of the HDPE due to sustained loading. An additional creep factor of safety of 2.0 was applied to the transmissivity value obtained from the chart as shown in Table 14-4.

By combining the partial safety factors listed above, the long-term transmissivity of the drainage geocomposite was obtained as $7.8 \times 10^{-4}$ $m^2$/sec.

The flow capacity of the drainage layer is calculated as approximately 11,410 gpd. This accounts for the configuration of the secondary collection trench along the southern edge of the Cells 1 through 4, and along the eastern edge of Cell 5 through 8, and northern edge of Cell 8 which intercepts flow from portions of each cell. This value is nearly three orders of magnitude larger than the estimated total flow of liquids into the LDS.

## 6.17 Leak Detection Time

Based on the capability of the composite secondary leachate detection/collection systems to detect extremely small flows regardless of the time scale involved in the arrival of such flows to the LDS sumps, the final leak detection rule requires that the LDS “be capable of detecting … leaks … at the earliest practicable time.”

In Landfill L-14, the slowest calculated leachate flow path is along the base of Cell 1. This path consists of approximately 180 feet along the sideslope (3H:1V west-east direction), 480 feet along

the base (1.0 & 1.5 percent slope in the north-south direction), and 90 feet along the south toe collection trench (0.7 percent slope), for a total of 750 feet. The leak detection time for this path is estimated to be approximately one day.

### 6.18 Action Leakage Rate

In its final leak detection rule, the EPA has adopted a single level of leak detection (ALR), which is defined similarly to the Rapid and Large Leak (RLL) in the proposed rule (EPA, 1992). By its definition, the ALR is the maximum design flow rate that the LDS can remove without the fluid head on the bottom liner exceeding 1-foot. This description applies largely to the LDS's that have a 12-inch thick granular drainage layer. For the geocomposite drainage layers, an equivalent condition would be the full flow within the drainage layer that has the same transmissivity as a 12-inch thick granular layer with a hydraulic conductivity not less than $1 \times 10^{-2}$ cm/sec.

Although based on the definition in the final leak detection rule (also 40 CFR Part 264.302), an ALR value based on the flow rate of 11,410 gallons/day (see Section 6.16 of this RAP) is considered to be unreasonably high as this flow rate greatly exceeds the average daily precipitation at the facility. The primary motive behind the selection of the LDS drainage geocomposite was to provide a drainage system that would have satisfactory structural performance under the calculated overburden pressures. The drainage capacity of the selected LDS drainage geocomposite exceeds, by a large margin, the calculated potential leakage rate into the LDS.

Therefore, if the maximum drainage capacity of the LDS is adopted as the ALR, then during the active life of a cell a leak condition that requires an action will likely never be triggered regardless of the severity of the leakage. Also, the use of the flow capacity of the LDS drainage geocomposite would result in a significant overdesign of the LDS collection sump and the leachate pumping system.

Considering the large disparity between the cell-specific liquid leakage rates into the LDS (as estimated in Section 3.3.6 of this RAP) and the flow capacity of the LDS drainage geocomposite, a more reasonable flow rate is proposed for the ALR. The ALR flow rate is based on the minimum required transmissivity of $3 \times 10^{-5}$ $m^2$/sec in the drainage geocomposite of the LDS per 40 CFR Part 264.301.

Based on this transmissivity and the cell floor width and slope, the maximum drainage capacities of the LDS and thus ALRs are as follows.

**TABLE 14-5 Cell Specific Action Leakage Rates (ALRs)**

| Cell | Cell Floor Width (ft) | Minimum Cell Floor Slope (%) | Max Drainage Capacity (gpd) |
|---|---|---|---|
| 1 | 210 | 1.0 | 438 |
| 2 | 214 | 1.0 | 447 |
| 3 | 214 | 1.5 | 670 |
| 4 | 120* | 1.5 | 376 |
| 5 | 120* | 1.5 | 419 |
| 6 | 120 | 1.5 | 419 |
| 7 | 120 | 1.5 | 419 |
| 8 | 120 | 1.5 | 419 |
| *Due to the herringbone configurations of Cells 4 through 8 the perimeter length of the sump was used instead of the cell width. | | | |

It should be noted that, the ALR values in the table above include a safety factor which greatly exceeds the recommended minimum value of two that is published in the final leak detection rule. This safety factor was calculated by multiplying the partial safety factors listed in Table 14-4.

The use of these action leakage rates enables CWMNW to take action before large releases into the LDS begin to occur.

## 6.19 Verification of LDS Sump Capacity

The LDS sump in each cell was designed to be approximately 3 feet deep. The depth of the toe trench on both sides of the sump (in cells that include a toe trench) will be approximately 1-foot at the point of connection to the sump. In order to prevent liquid accumulation inside the toe trench, the liquid head within the LDS sump will not be allowed to exceed 2 feet. The liquid capacity of the LDS sump has been calculated assuming that the hydraulic head will be limited to a minimum of 1-foot and a maximum of 2 feet.

The existing LDS sumps for cells 1 to 3 have a capacity of approximately 474 gallons and 1,600 gallons for Cell 4. Based on the LDS sump design for Cells 5-8, the liquid capacity of the LDS sumps increases to approximately 2,676 gallons. In this analysis, a porosity of 40 percent was used for the granular material within the sump and the storage volume of the sump riser was ignored. The LDS sump dimensions can be found in the facility's *Landfill Design Drawings* maintained in the operating record.

The ALR's of 419 to 670 gallons/day/sump are relatively small flow rates. A wide range of commonly available pumps have the capacity to handle these flow rates. Based on the available LDS sump volume, a pump will need to operate approximately once per day for a period of only about 1.5 to 2.5 hours to stay ahead of the proposed ALR.

# 7 ALR Engineering Calculations Specific to Landfill 15

## 7.1 Introduction

This Response Action Plan for Landfill L-15 (RAP) has been prepared for the Chemical Waste Management of the Northwest, Inc. (CWMNW) Arlington Facility in accordance with Title 40, Code of Federal Regulations (40 CFR) Part 264 Subpart N, Oregon Administrative Rule (OAR) 340-104, and United States Environmental Protection Agency (EPA) guidelines as outlined in the double liner and leak detection rules for hazardous waste and disposal units (FR 57, January 29, 1992).

## 7.2 Purpose

The owners or operators of landfill units subject to RCRA Subtitle C (Title 40, Code of Federal Regulations 40 CFR Part 264.3018 or (d)) regulations must have an approved RAP before receipt of waste at the landfill facility. 40 CFR Part 264.301, also adopted by the Oregon Administrative Code (OAR 340-100-002), requires that the leachate collection system between the liners and immediately above the bottom composite liner functions as a leachate collection and removal system as well as a leak detection system (LDS).

A RAP describes the criteria used to address liquids which accumulate in the LDS. Details of the definition of the "Action Leakage Rate" (ALR) which trigger a response on the part of the owner/operator to address such accumulations are given in 40 CFR Part 264.302

## 7.3 Project Location

The CWMNW Arlington Facility is located in Gilliam County, Oregon.

Landfill L-15 has been designed with four cells and will have a total capacity of approximately 80.4 $x10^6$ cubic yards. The design of L-15 meets or exceeds the requirements detailed in 40 CFR Part 264.301, OAR 340-104, and guidelines for landfill construction as described in *Minimum Technology Guidance on Double Liner Systems for Landfill and Surface Impoundment Design, Construction and Operation* - EPA 530SW85014

## 7.4 Landfill Development

Landfill L-15 is divided into four cells each with phased modules that are developed based on operational need. Four inter-cell berms in the north-south direction divide the base area into four cells. The primary and secondary leachate collection and detection systems have been designed to be hydraulically independent.

The landfill base grades (i.e., top of protective layer) vary between 950 feet MSL and 986 feet MSL which vary from approximately70 feet to 150 feet below the existing grade. The maximum top of landfill elevation is approximately 1,452 feet. The maximum depth of waste in the landfill is approximately 490 feet.

### 7.5 Description of Landfill Lining System

The lining system components of Landfill L-15 have been designed in accordance with 40 CFR Part 264 Subpart N 264.301.

### 7.6 Base Liner System

The base liner system incorporates separate primary and secondary composite lining systems as described in the L-15 liner and leachate collection system section above covering the liner system in this document.

### 7.7 Leachate Leak Detection Systems

Each of the four cells of Landfill L-15 are constructed with a primary leachate collection system (LCS) and a secondary LDS as described in the L-15 liner and leachate collection system section above covering the liner system in this document.

Leachate flow between cells will be prevented by means of separation/ intercell berms built into the base liner and leachate collection system. Separation of the cells will also be ensured in the design of primary and secondary leachate collection systems. Both the primary and the secondary leachate collection systems will have separate sumps where leachate collection, pumping, and leak detection functions will be performed by means of sideslope risers. Complete design analyses for Cells 1-4 LCS and the LDS will be provided in the Engineering Design Report package along with the construction documents.

### 7.8 Tertiary Sump Monitoring System

In addition to the primary and secondary lining systems, a tertiary detection monitoring system has been designed directly beneath the LDS sump to monitor any releases into the environment. Inside the LCS and LDS sumps, the leachate heads will reach measurable levels during landfill operations, increasing the probability of liner leakage at these locations. The tertiary sump monitoring system will be capable of detecting releases through the LDS sump as well as enable sampling of the liquids collected for purposes of chemical analyses.

### 7.9 Description of the LDS

Subtitle C Part 264.301 (c)(3)(ii) allows the use of a geosynthetic drainage composite within the LDS with a transmissivity equal to or greater than $3x10^{-5}$ meters squared per second ($m^2$/sec). The secondary leachate collection layer was designed using a geonet/geotextile drainage composite meeting this requirement.

### 7.10 Leachate Management

Fluids from landfill operations (leachate) are intercepted by the primary leachate collection and removal system (LCRS) and collected in the sumps. The LDS is designed to effectively intercept liquids which may have migrated through the primary lining system. Fluids intercepted by the LDS are also channeled to discrete sumps from which they are removed.

Fluids in the leachate systems are measured and recorded in compliance with Attachment #3 – *Inspection Plan*

### 7.11 Potential Sources of Liquid in LDS

The potential sources of liquids that may be collected within the secondary leachate detection/collection system can be broadly categorized as:

- construction-related,
- internal; and
- external sources.

The following sections addresses:

- the potential sources of liquids inside the secondary leachate detection/collection system; and (2) quantification of the liquids due to each potential source.

### 7.12 Construction-Related Liquids

Liquids generated during installation of the lining system components and before placement of the waste inside each cell will be classified as construction-related liquids.

### 7.13 External Sources

External liquid sources inside the secondary detection/collection system consist of: (1) leakage of leachate and initial water within the primary drainage layer through the primary geomembrane/GCL system; (2) compression water from the secondary soil/bentonite liner leaking into the secondary collection system through pinholes or larger-size construction related flaws through the secondary geomembrane; and (3) seepage of groundwater and/or other liquids through the secondary lining system if an inward gradient condition exist

### 7.14 Liquid Removal Capacity of the LDS

The minimum transmissivity of the geocomposite drainage layers for the LDS has been specified as $3x10^{-5}$ $m^2$/sec in the final leak detection rule. This is interpreted as the long-term value which is obtained after the application of several safety factors to account for potential long-term performance degradation. Some of these factors are related to the long-term filtration performance of the geotextile component and some to the long-term structural performance of the geonet. As discussed in the Section below, these factors have been included in the analysis of the long-term performance of the LDS.

### 7.15 LDS Design Considerations

Table 14-6 summarizes the safety factors used in the evaluation of the long-term performance of the geonet/geotextile drainage composite.

**TABLE 14-6 Drainage Geocomposite Partial Reduction Factors**

DRAINAGE GEOCOMPOSITE PARTIAL REDUCTION FACTORS

| Performance Factor | Assigned Safety Factor |
|---|---|
| Out-of-plane creep (geonet) | 2.0 |
| Void intrusion (geonet) | 1.2 |
| Soil clogging (geotextile) | 1.0 |
| Chemical clogging (geotextile) | 1.5 |
| Biological clogging (geotextile) | 1.2 |
| Overall Reduction Factor (Product of all above factors) | 4.32 |

The geotextile-related factors listed in Table 14-6 do not necessarily affect the long-term transmissivity of the geonet. However, they force a decrease in the flow rate of liquid into the geonet, and therefore, indirectly affect the flow capacity of the drainage geocomposite.

The initial transmissivity value for the drainage geocomposite selected for the LDS was obtained from a transmissivity vs. normal stress chart published by the manufacturer. The maximum design waste thickness is used to calculate the design normal stress. This published transmissivity value, in part, includes the effect of the creep of the HDPE due to sustained loading. An additional creep factor of safety of 2.0 is applied to the transmissivity value obtained from the chart as shown in Table 14-6. Transmissivity and flow capacity calculations will be provided in the Engineering Design Report package along with the construction documents prior to construction and waste placement.

### 7.16 Leak Detection Time

Based on the capability of the composite secondary leachate detection/collection systems to detect extremely small flows regardless of the time scale involved in the arrival of such flows to the LDS sumps, the final leak detection rule requires that the LDS "be capable of detecting … leaks … at the earliest practicable time." Flow path and leak detection time calculations will be provided in the Engineering Design Report package along with the construction documents prior to construction and waste placement

### 7.17 Action Leakage Rate

In its final leak detection rule, the EPA has adopted a single level of leak detection (ALR), which is defined similarly to the Rapid and Large Leak (RLL) in the proposed rule (EPA, 1992). By its definition, the ALR is the maximum design flow rate that the LDS can remove without the fluid head on the bottom liner exceeding 1-foot. This description applies largely to the LDS's that have a 12-inch thick granular drainage layer. For the geocomposite drainage layers, an equivalent condition would be the full flow within the drainage layer that has the same transmissivity as a 12-inch thick granular layer with a hydraulic conductivity not less than $1 \times 10^{-2}$ cm/sec.

Although based on the definition in the final leak detection rule (also 40 CFR Part 264.302), an ALR value based on the flow rate of 11,410 gallons/day (see Section 6.16 of this RAP) is considered to be unreasonably high as this flow rate greatly exceeds the average daily precipitation at the facility. The primary motive behind the selection of the LDS drainage geocomposite was to provide a drainage system that would have satisfactory structural performance under the calculated overburden pressures. The drainage capacity of the selected LDS drainage geocomposite exceeds, by a large margin, the calculated potential leakage rate into the LDS.

Therefore, if the maximum drainage capacity of the LDS is adopted as the ALR, then during the active life of a cell a leak condition that requires an action will likely never be triggered regardless of the severity of the leakage. Also, the use of the flow capacity of the LDS drainage geocomposite would result in a significant overdesign of the LDS collection sump and the leachate pumping system.

Considering the large disparity between the cell-specific liquid leakage rates into the LDS (as estimated in this RAP) and the flow capacity of the LDS drainage geocomposite, a more reasonable flow rate is proposed for the ALR. The ALR flow rate is based on the minimum required transmissivity of $3x10^{-5}$ $m^2$/sec in the drainage geocomposite of the LDS per 40 CFR Part 264.301.

Based on this transmissivity and the cell floor width and slope, the maximum drainage capacities of the LDS and thus ALRs are as follows.

**TABLE 14-7 Cell Specific Action Leakage Rates (ALRs)**

| Cell | Cell Floor Width (ft) | Minimum Cell Floor Slope (%) | Max Drainage Capacity (gpd) |
|---|---|---|---|
| 1 | 210 | 1% | To be supplied with the Construction Set |
| 2 | 214 | 1% | To be supplied with the Construction Set |
| 3 | 214 | 1% | To be supplied with the Construction Set |
| 4 | 120 | 1% | To be supplied with the Construction Set |
| | | | |

It should be noted that, the ALR values in the table above include a safety factor which greatly exceeds the recommended minimum value of two that is published in the final leak detection rule. This safety factor was calculated by multiplying the partial safety factors listed in Table 14-6.

The use of these action leakage rates enables the owner/operator to take action before large releases into the LDS begin to occur.

### 7.18 Verification of LDS Sump Capacity

The liquid capacity of the LDS sump will be provided in the Engineering Design Report package along with the construction documents.

## 8 Landfill L-14 / L-15 Response Action Plan

This section details response actions for possible excursions from the cell-specific ALR's for Landfill L-14 Cells 1 through 8 and Landfill L-15 Cells 1through 4. A summary of the monitoring to be performed is also included.

### 8.1 Monitoring of the Primary Leachate Collection Sumps

During the active life of Landfill L-14/L15, all primary leachate collection system sumps will be inspected in accordance with the facility's Attachment #3 - *Inspection Plan*. Landfill L-14/L-15 sumps are monitored electronically by a SCADA system. Accumulated leachate in these sumps will be pumped once the individual sump SCADA setpoint is reached or at a frequency determined by the liquid accumulation rate, sump size, and the characteristics of the leachate pumps installed in each sump. Frequent removal of the leachate from the primary leachate collection system will minimize the hydraulic gradients that increase the potential for leakage into the LDS.

### 8.2 LDS Monitoring

During the active life of Landfill L-14/L-15, all L-14/L-15 LDS sumps will be inspected for liquid accumulation in accordance with the facility's Attachment #3 - *Inspection Plan*. Landfill L-14/L-15 LDS sumps are monitored electronically by a SCADA system. Liquids accumulating within the LDS sumps will be removed to the extent possible by the leachate removal system. This will minimize the hydraulic head on the secondary containment system, also minimizing the potential for leakage through the secondary geomembrane and the soil liner or GCL. The maximum liquid level within the sumps will be 3 feet. This will prevent the liquids from backing into portions of the leachate collection trench.

The SCADA system or manual measurements methods monitors leachate accumulation in the primary and LDS sumps during the active life of the landfills. After final closure, the amount of liquid removed from each LDS sump will be recorded at least monthly. The monitoring frequency may be decreased to quarterly or semi-annually after closure in accordance with the requirements outlined in 40 CFR Part 264.303(c)(2). The volume of liquid removed over the time since last evacuation (end of pumping to end of pumping) will be averaged to determine if the ALR has been exceeded.

If it is determined that the ALR's have been exceeded, the following responses will be initiated until such time as the accumulations are determined to be within the cell's/sump's acceptable operating limits. The agencies have authority, upon determining the existence of a significant threat to human health and the environment, to require additional response actions.

### 8.3 Response Action Plan

For flow rates below the ALR, routine monitoring will continue.

Flow rates that equal or exceed the proposed ALR will require the implementation of a set of actions as described below. Pumping rates out of the LDS sumps greater than the ALR are

indicative of flows into the LDS greater than expected due to one or more of the mechanisms described earlier.

### 8.4 EPA and DEQ Requirements

In the event of exceedance of the cell specific ALR value in a cell, CWMNW will, per the minimum specifications detailed in 40 CFR Part 264.304(b)(c), and 340 OAR 104, take the following actions:

- Notify the Department in writing of exceedance within 7 days of the determination and indicate that the response action plan will be implemented.
- Submit a preliminary written assessment to the Department within 14 days of the determination, describing the amount and likely sources of liquids, possible location, size, and cause of any leaks and short-term actions taken and planned.
- Determine to the extent practicable, the location, size, and cause of any leak.
- Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed.
- Determine other short-term and long-term actions to mitigate or stop any leaks.
- Within 30 days after the notification that the ALR has been exceeded, submit to the Department the results of the analysis specified in Steps 3, 4, and 5 (above) and the results of actions taken and planned.
- Monthly thereafter, as long as the flow rate in the LDS exceeds the ALR, submit to the Department a report summarizing the results of remedial actions taken and actions planned.
- To make the leak and/or remediation determinations in Steps above, the owner/operator must:
- Assess the source(s) of liquids and amounts of liquids by source
- Conduct a fingerprint, hazardous constituent, or other analysis of liquids in the LDS to identify the source of liquids and possible location of any leaks, and the hazard and the mobility of the liquid; and
- Assess the seriousness of any leaks in terms of potential for escaping into the environment; or document why such assessments are not necessary.

### 8.5 TERTIARY SUMP MONITORING PROGRAM

A tertiary sump is constructed beneath each primary and secondary sump. The tertiary sump system effectively represents an “engineered vadose zone”, protected from the true in-situ vadose zone materials by a tertiary liner system. Objective of Tertiary Sump Monitoring Program

The primary purpose of the tertiary sump is to detect leaks in the LDS sump. Additionally, the tertiary sump monitoring program is intended to provide data to help identify the nature of the Landfill L-14 long-term detection monitoring program that will eventually replace the interim monitoring program. The tertiary sump monitoring program is designed to provide the following information: (1) whether any liquid is present in the tertiary sumps; (2) the rate of liquid

accumulation in the tertiary sump; and (3) the chemistry of liquid that might accumulate in the sump.

### 8.6 Tertiary Sump Monitoring Frequency

Monitoring will be implemented at a given tertiary sump once waste placement begins in the cell that is monitored by the sump. The tertiary sump is monitored by the SCADA system and monitors the presence of liquid. In the event that liquid is detected in the tertiary sump, liquid removal will occur, and subsequent monitoring and liquid removal will be performed weekly as long as liquids continue to be detected in the sump. Pumping will be performed with a dedicated pump, such as a bladder pump (or equivalent). Pumping will occur only if the liquid head is sufficient to operate the pump. The volume of liquid removed will be recorded. If liquid is detected but the volume is insufficient to activate the pump, this will be noted.

### 8.7 Tertiary Sump Volume and Chemical Measurements

Monthly inspections look for evidence of surface contamination or discoloration, the condition of the riser, and the integrity of the locking cap will be recorded and maintained as part of the permanent monitoring record at the site. If no liquid is present in the tertiary sumps, this will be noted along with the date and time of the observation.

Liquid samples will be collected quarterly, if a pumpable quantity of liquid is present to allow for sampling, from the tertiary sump and analyzed for the chemical indicator parameters listed in the Table 14.8 below. In addition, field indicator parameters (pH, SC, and temperature) will also be measured in the secondary and tertiary sumps. If a sufficient quantity of liquid is present to allow for sampling, one sample will be collected from both the secondary and tertiary sumps in order to evaluate whether there has been a potential release. Based on the analytical results, additional tertiary sump samples may be collected. If volatile organic compounds are detected in the tertiary sump samples, the secondary sump will be immediately sampled and analyzed for the constituents listed in Table 14.8. Weekly measurements of volume and field indicator parameters will continue as long as liquid is observed in the tertiary sumps.

**TABLE 14-8 Tertiary Sump Monitoring Parameters**

**Volatile Organic Compounds [Method 8260B]**

**General Inorganics: Common Anions/Cations**

- Calcium
- Magnesium
- Sodium
- Potassium
- Nitrate
- Bicarbonate
- Carbonate (when pH greater than 8.0)
- Sulfate
- Chloride

**Indicator Parameters:**

- Dissolved Iron
- Dissolved Manganese

## 8.8 Sump Sampling, Laboratory Analysis Procedures, and Reporting

Samples will be collected from the secondary and tertiary sump using the dedicated pumps installed in the sumps for liquid removal. .

Samples for chemical analysis will be collected according to the general procedures specified in Attachment #7 - *Groundwater Monitoring Plan*, with the exception that no purging of the sumps will be performed prior to sample collection. Samples will be handled and sent to the laboratory using strict chain-of-custody procedures, as described in *Attachment #7 - Groundwater Monitoring Plan*.

An annual data report and summary will be submitted to the Department each year for the tertiary sump monitoring program.