

Danielle Gibson Project Manager Washington State Department of Ecology 300 Desmond Drive SE Lacey, Washington 98503-1274

Former Cascade Timber #1 Site, Tacoma, Washington: 2024 Annual Operations & Maintenance Report

Dear Ms. Gibson:

Ramboll Americas Engineering Solutions, Inc. (Ramboll)¹, on behalf of the ASARCO Multi-State Environmental Custodial Trust (the "Trust"), has prepared this annual report to document inspection and maintenance activities conducted by the Trust during 2024 at the Former Cascade Timber #1 Site (the "Site") located in Tacoma, Washington (Figure 1) pursuant to the approved *Operation & Maintenance Plan, Former Cascade Timber #1 Site, Tacoma, Washington, Revision 1* (O&M Plan) dated February 2021.²

Site Inspection

On behalf of the Trust, Ramboll inspected the Site on November 14, 2024, in accordance with procedures identified in the O&M Plan approved by the Washington State Department of Ecology (Ecology) in 2021.³ Ramboll's inspection included the following activities:

- 1. Visual inspection of the Site to evaluate evidence of the following conditions:
 - extent and type of vegetative growth;
 - erosion of the cap quarry rock layer, including evidence of erosion rills or depressions;
 - exposure or damage to the flexible membrane liner (FML; e.g., due to subsidence or bulging from landfill gas trapped in pockets under the liner);
 - significant activity or intrusion of pests or unwanted vegetation (e.g., burrowing animals or woody plants with deeper root systems);
 - slope failure or settlement of the cap system (e.g., subsidence, sink holes, cracking of soil cover, ponded water); and

Date: March 3, 2025

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¹ Formerly Ramboll US Consulting, Inc.

² The Trust submitted the O&M Plan to the Washington State Department of Ecology (Ecology) on September 16, 2020. Ecology approved the O&M Plan with minor comments on February 1, 2021, resulting in Revision 1 dated February 8, 2021.

³ Ramboll notified Ecology (Danielle Gibson) of the planned site visit on November 6, 2024. Ms. Gibson indicated that Ecology's participation in the site visit was not necessary for this event.

- damage or improper function of manholes, locks, gates, fencing, signage, and monitoring wells.
- Visual inspection of the containment cell leachate collection and vent systems, including any indications of damage or obstruction to the associated piping, the absence or presence of leachate in the collection sump or cleanout manhole, and any indications of leachate seepage.
- 3. Inspection of surface drainage patterns (excessive wetness or dryness) and drain-pipes along the edges of the containment cell for visual evidence of erosion from the cap or areas surrounding the containment cell, including any significant gaps beneath the security fence due to erosion.

No evidence of significant settling of the cap surface (e.g., depressions) was apparent based on the inspection. Appropriate signage was visible on the site perimeter fencing, which was observed to be in satisfactory condition. Site improvements (fencing, piping, etc.) were observed to be in good condition, although the locks (front gate, monitoring wells) were observed to be very rusty, and the barbed wire support arm at the southeast corner was observed to be detached, requiring an eventual minor repair to ensure longevity and integrity. Vegetation consistent with minimal growth since the last removal event (December 2022) was observed around the perimeter of the containment cell, and small patches of vegetation were observed growing on the containment cell's quarry spall cover/armoring. Blackberry bushes were observed along the eastern margin of the Site. A field mouse was observed entering a small hole along the western portion of the containment cell, but significant pest activity was not observed. A photographic log for the November 14, 2024, Site inspection is provided in Attachment 1 and a Site inspection report is provided in Attachment 2.

Maintenance Activities

Maintenance activities conducted in 2024 were limited to lubricating the gate hinges and locks as specified in the O&M Plan.

Conclusions

Based on the condition of the vegetative cover observed during the Site visit, Ramboll concludes that the O&M activities have been adequate in preventing erosion and maintaining the overall integrity of the containment cell. Although a barbed wire support arm (southeastern portion of fence) requires reattachment to ensure longevity, the Site was observed to be secure in the near term, and no conditions warranting immediate further action were identified. On behalf of the Trust, Ramboll will conduct a maintenance event in Spring 2025 to 1) trim and remove extraneous vegetation on and around the containment cell, 2) reattach the fence support arm, 3) replace well and gate locks, and 4) fill the pest hole identified in the exterior of the containment cell. Ramboll will also continue inspection of the condition of the Site cap and fencing on an annual basis in accordance with the O&M Plan during 2025.

If you have any questions or comments regarding the above, please feel free to contact me at (913) 553-5922 or smcginnis@ramboll.com.

Yours sincerely,

Steve L Messimme

Steve McGinnis, PE CGWP Principal

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cc: ASARCO Multi-State Environmental Custodial Trust

Attachments:

Figure 1: Site Layout Attachment 1: Photographic Log – November 2024 Inspection Attachment 2: Annual Site Inspection Form – November 2024 Inspection

FIGURE



ATTACHMENT 1

PHOTOGRAPHIC LOG – NOVEMBER 2024 INSPECTION

Former Cascade Timber #1 Facility 2502 Marine View Drive, Tacoma, Washington

Date of Inspection:	November 14, 2024
<u>Arrival Time:</u> Departure Time:	9:30AM 11:10AM
Weather:	49°F Cloudy with low winds
Other Notes:	See inspection form









Title:	2024 Annual Inspection Photolog	
Site:	Former Cascade Timber #1 Facility	
	Tacoma, Washington	





Photo 3: View of the south side of the containment cell and the south gate (facing east).



Photo 4: View of the east side of the containment cell and associated weed growth (facing south).

Title:	2024 Annual Inspection Photolog
Site:	Former Cascade Timber #1 Facility
	Tacoma, Washington









Photo 6: View of the northwest corner containment cell cap with vent pipe visible (facing east).

Title:	2024 Annual Inspection Photolog
Site:	Former Cascade Timber #1 Facility
	Tacoma, Washington









Photo 8: View of the center of containment cell cap and vent pipe (facing west).

Title:	2024 Annual Inspection Photolog
Site:	Former Cascade Timber #1 Facility
	Tacoma, Washington









Photo 10: View of the west side of containment cell cap (facing north).

Title:2024 Annual Inspection PhotologSite:Former Cascade Timber #1 FacilityTacoma, Washington









Photo 12: View of a barbed wire disconnected from fence post along the east side fence line.

Title:	2024 Annual Inspection Photolog
Site:	Former Cascade Timber #1 Facility
	Tacoma, Washington





Photo 13: View of the east side of containment cell cap (facing north).



Photo 14: View of the center of containment cell cap (facing south).

Title:2024 Annual Inspection PhotologSite:Former Cascade Timber #1 Facility
Tacoma, Washington





Photo 15: View of the east side of containment cell cap (facing south).



Photo 16: View of a hole on west side (field mouse was observed entering hole).

Title:2024 Annual Inspection PhotologSite:Former Cascade Timber #1 Facility
Tacoma, Washington





Photo 17: View of monitoring well (MCW-3) with inner cap visible.



Photo 18: Monitoring well (MCW-3).

Title:	2024 Annual Inspection Photolog
Site:	Former Cascade Timber #1 Facility
	Tacoma, Washington





Photo 19:View of monitoring well (MCW-1) with inner cap visible.



Photo 20: Monitoring well (MCW-1).

Title:2024 Annual Inspection PhotologSite:Former Cascade Timber #1 Facility
Tacoma, Washington





Title:	2024 Annual Inspection Photolog
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	Tacoma, Washington





Photo 23: View of the monitoring well (MCW-2) with inner cap visible.



Photo 24: View of manhole and vent pipe located south of the containment cell.

Title:2024 Annual Inspection PhotologSite:Former Cascade Timber #1 Facility
Tacoma, Washington





Photo 25: View of the drainpipe in the southeast corner of the containment cell.



Photo 26: View of the south gate (facing south).

Title:	2024 Annual Inspection Photolog
Site:	Former Cascade Timber #1 Facility
	Tacoma, Washington



ATTACHMENT 2

ANNUAL SITE INSPECTION FORM – NOVEMBER 2024 INSPECTION

ANNUAL SITE INSPECTION CHECKLIST FORMER CASCADE TIMBER #1 FACILITY 2502 MARINE VIEW DRIVE, TACOMA, WASHINGTON

Inspection Conducted by:	Alex Leake
Date of Inspection:	November 14, 2024
Arrival Time:	9:30AM
Departure Time:	11:10AM
Weather Conditions:	49°F cloudy with low winds

Required Site Inspection Scope of Work:

Follow health and safety precautions. Observe the entire Site systematically as follows:

- walk the perimeter of the Site to assess the gate, fencing, and overall security;
- walk the perimeter of the containment cell to assess the base of the cell, peripheral drainages, discharge pipes, leachate collection sump and cleanout manhole, and monitoring wells; and
- using a ladder, climb up to view the perimeter of the containment cell and portions of the containment cap at several locations on each side of the cell.

During the inspection, the Site Layout map will be used to ensure all areas of the Site are inspected and to document the locations of observed features, as discussed below.



Site Inspection Field Notes		
Notes/Actions Taken or Needed		
General Site Conditions		
Perimeter walk observations	The site was properly secured without any signs of vandalism. Weeds were observed on all sides of the containment cell. Blackberry bushes were observed along the eastern side. Small amounts of trash were present along northern side (cleared during visit).	
Condition of manholes, locks, gates, fencing, signage, monitoring wells	Manhole is covered and the lid secure. Locks were functional but slightly rusty; all locks were lubricated during visit. Perimeter fence is mostly functional with locked gates; however, the barbed wire is displaced from the support arm at the top of fence in the southeast portion (See Photo 12). Signs are present and readable on the perimeter fence. Monitoring wells were intact and locked; replaced lock on MCW-4 due to rust. Flush-mount well cover has one stripped bolt, but two remaining are sufficient to secure.	
Containment Cell Inspection		
Cap vegetation (e.g., weed growth, distress, dead, inadequate)	No disturbance of earth, erosion, cracks, or mounds was observed from cell perimeter. Adequate vegetative cover was observed on the containment cell (as viewed from cell perimeter). Minor weeds were observed on the western section of the cap and near vent pipes; the presence and nature of the weeds does not appear to have resulted in an erosion issue or damage to the cap.	
Erosion (e.g., rills or depressions)	The cell cap cover consisted of rock covering, grass, and vegetation. Evidence of erosion was not observed.	
FML condition (e.g., subsidence, bulging)	Small portions of liner were visible from the cell perimeter on the northwest corner. No bulging/subsidence observed.	
Pest or vegetation intrusion (potential impacts to FML)	Small hole was observed along the base of the western wall, and a mouse was observed running into the hole (See Photo 16). Blackberry bushes were observed along the eastern side.	
General slope failure/settlement issues (e.g., subsidence, sinkholes, cracks, ponded water)	No indications of slope failure, cracks, or settlement issues were observed. No standing water observed.	
Leachate Collection and Vent System		
Damage or obstruction to piping/vents	Some coating wear present, similar to 2023 inspection. Pipes and vents appear to be functional. No vegetation seems to be obstructing flow to pipes, although blackberry is beginning to encompass vent in southeast corner. No misalignment of pipes or vents observed.	
Absence/presence of leachate (sump or cleanout)	Leachate sump accessed and leachate was present at time of inspection. From top of the manhole cover, the depth of the leachate collected was approximately 42 inches (4 inches higher than measured in 2023)	
Indications of potential seepage	No indications of leachate seepage were observed.	



Surface Drainage		
Evidence of erosion due to surface drainage (e.g., within cell, around base of cell, around fence)	No evidence of erosion or blockage of pipes and vents (no sediment observed in drainages). No standing water observed from the cell perimeter.	

Maintenance Actions					
	Defect	Conditions When Maintenance is Needed	Maintenance Required and Results Expected		
General Site Conditions					
General Site Conditions	Trash & Debris	Trash and debris present.	Trash and debris cleared from slopes.		
Signs	Illegible or missing	Signs are missing or illegible.	Clean or replace signs. Rehang.		
Gate	Routine maintenance	As moving gate parts get stiff or dirty.	Clean and lubricate hinges, latches, and locks.		
Fence	Routine maintenance	Degraded, damaged, or if erosion beneath the fenceline has occurred.	Repair or replace affected portions of fenceline.		
Manhole	Insecure	Verify manholes are covered/secured.	Clean, repair, or replace as necessary.		
Monitoring Wells	Damaged	Surface monument or well cover is cracked	Evaluate concrete or well box repair/replacement (including ring seal).		
Containment Cell Inspection					
Cover liner	Visible or breached	If portions of the liner are visible, repair without delay.	Cover liner with appropriate materials (dirt, sand, rock, etc.).		
	Bulging	If bulging of liner is visible the landfill gas collection system is not working correctly.	Open area. Remove any landfill gas accumulation and repair collection system. Replace cap.		
Vegetative Cover	Lack of vegetation	Lack of vegetation may be due to multiple causes.	Reseed according to seed mix specified in O&M Plan		
	Unwanted vegetation	Overgrowth of weeds.	Manual removal/chemical herbicide.		
	Earth disturbance	When sinkholes, standing water, cracks, or mounds are discovered.	Note depths/locations of problem areas on inspection forms. Even ground, reseed.		
Leachate Collection and Vent System					
Pipes and Culverts	Malfunctioning parts	Operate all moveable parts to assure continued smooth working use.	Repair or replace parts as necessary.		
	Damaged	Visible damage to piping.	Repair or replace pipe.		



Maintenance Actions					
	Defect	Conditions When Maintenance is Needed	Maintenance Required and Results Expected		
Leachate Collection and Vent System					
Pipes and Culverts	Vegetation	Vegetation present that reduces water flow.	Remove vegetation		
	Sediment and Debris	Accumulated sediment present.	Clean/flush pipe so that it matches design.		
	Coating damaged	Protective coating is damaged; rust is causing deterioration to any part of pipe.	Repair, replace or recoat pipe.		
	Misalignment	If misalignment observed, evaluate affected area.	Repair or replace pipe.		
	Blockage	Check culvert inlet and outlet for evidence of erosion or blockage	Remove and sediment and restore to proper flow conditions.		
Surface Drainage					
Standing water	Poor drainage	Ponding water observed for prolonged periods after rain events.	Restore surface grade as appropriate.		
Surface erosion near piping or cell materials	Exposed piping or other improvements	Surface material worn to expose or undermine components	Inspect to evaluate need for repairs and surface restoration to modify drainage patterns.		