

## Technical Memorandum

TO: Melisa Bod

FROM: Jamie Stevens, P.E. and Rusty Jones, L.G. – CRETE Consulting Inc.

PROJECT: Port of Tacoma Parcel 15 (Portac) – 4215 State Route 509

SUBJECT: 2025 Roller-Compacted Concrete (RCC) Cap Inspection and Maintenance

DATE: October 9, 2025

CC: Melisa Bod – Port of Tacoma

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This technical memorandum (Tech Memo) documents the 2025 biennial environmental inspection of the existing roller-compacted concrete (RCC) Cap and stormwater conveyance system conducted by CRETE Consulting Inc. (CRETE) on behalf of the Port of Tacoma (Port) for the Parcel 15 (Portac) property (Site). The Site is located at 4215 State Route 509 – North Frontage Road, Tacoma, Washington (Figure 1).

The Port entered Agreed Order No. DE 15816 (Agreed Order) with the Washington State Department of Ecology (Ecology) on June 23, 2021, to implement the Phase 1 Cleanup activities. The Phase 1 Cleanup includes maintenance of the existing RCC cap. Cap inspection activities were conducted in accordance with the requirements identified in the Operations, Maintenance, and Monitoring Plan (OMMP; Aspect 2022). The cap was constructed in with gravel ballast and two layers of RCC and was graded to route stormwater runoff to catch basins and on to Wapato Creek outfalls. The extent of the cap is approximately 29.4 acres and depicted on Figure 2. The primary purpose for capping the Log Yard was to mitigate surface water impacts. The capping was also conducted to prevent stormwater infiltration through the slag/wood waste fill and reduce leaching of metals to groundwater.

## Scope

The purpose of this Tech Memo is to document conditions of the RCC cap and stormwater conveyance system observed during the April 9 and 11, 2025 inspection performed by CRETE, as well as identify where maintenance is planned. Inspection activities included the following items:

- Inspection of the RCC cap for the presence of cracks and/or other failures in the pavement that allow surface water runoff to infiltrate the bark/slag surficial fill (e.g., cracks greater than 1/8 inch wide, exposed sub-base material, pavement edge deterioration, and general appearance)
- Evaluation of the structural and functional condition of the stormwater conveyance system (including catch basins, manholes, and oil/water separators)
- Evaluation of debris/sediment accumulation in the stormwater structures

Figure 2 shows the locations of key observations. Inspection observations are summarized on Tables 1 through 3.

## Environmental Cap and Stormwater Drainage System Status

The previous cap inspection was conducted on October 4 and 6, 2023 by CRETE. Recommendations included the following to be completed after the 2024 RCC Cap inspection:

- Environmental Cap
  - Continued monitoring of all cracks wider than 1/8 inch and continued monitoring of gouges in the slurry overlay.
  - Cleaning out of the shallow surface channels (see O9, O14, and O15 on Figure 2) to allow water to flow out of areas with ponding.
- Stormwater Drainage System
  - All stormwater structures will continue to be maintained under the Port's Phase 1 Municipal Stormwater permit (MS4). It is recommended that accumulated sediment and debris and/or vegetation be removed from inside and around the catch basins CBMH3, CBMH4, CBMH6, CBMH7, and CBMH8 before the next inspection (Figure 2).

## Field Observations

CRETE completed the inspection on April 9 and April 11, 2025.

### Environmental Cap

The cap was inspected for the presence of exposed sub-base material and none was observed. Table 1 provides a summary of the cap conditions observed during the inspection. Table 2 lists the cracks, gouges, and channels observed on the environmental cap and provides additional details regarding cap condition.

At the time of CRETE's inspection, the general appearance of the environmental cap at the Site was fair and was consistent with the previous cap inspection. Observed cracks wider than 1/8 inch are documented in Table 2 (observations O1, O2, O5, O6, O8, O11) and locations are shown on Figure 2. Three engineered channels (Table 2 observations O9, O14, and O15) contained sediment and vegetation that is blocking water from flowing out of areas with ponding.

The edge of the cap was inspected and found to be in good condition. Some sections of curbs around the edge of the cap were observed to have been broken with sections pushed off the edge of the pavement in places (Table 2 observations O7). The condition of the curbs was not observed to be impacting the integrity of the cap or stormwater drainage system.

### Stormwater Drainage Systems

The stormwater drainage system consists of several catch basins, eight catch basin maintenance holes, one oil/water separator, two spill containment vessels, and two outfalls. Observations made at each structure are summarized in Table 3.

## Recommendations

### Environmental Cap

Cracks wider than 1/8 inch and any gouges in the slurry overlay have been identified as specified in Table 2 and shown on Figure 2. Because these cracks are not expected to result in substantial leakage, continued monitoring of the cracks and gouges is recommended at the next inspection event. It is recommended that channels at O9, O14, and O15 be cleaned out to allow water to flow out of areas with ponding.

### Stormwater Drainage System

All stormwater structures will continue to be maintained under the Port's Phase 1 Municipal Stormwater permit (MS4).

Additional work which may benefit the stormwater drainage system includes:

- Removal of accumulated sediment and debris and/or vegetation from inside and around the catch basins CB10, CB11, CBMH3, CBMH4, CBMH6, CBMH7, and CBMH8 (Figure 2 and Table 3).
- Removal of the accumulated sediment around SV2 spill contaminant vault.
- Inspect the installation and functionality of the outfall backflow valves, removing algal buildup in the flaps and removing any debris behind the valve (upgradient side).

The maintenance identified as necessary in this Tech Memo should be completed before the next inspection scheduled in 2027 during other scheduled routine maintenance. The next inspection will include mapping areas of ponded water and cap maintenance activities will prioritize these areas. In accordance with the Site OMMP, biennial inspection and any maintenance of the existing RCC cap and the stormwater conveyance system will be reported to Ecology in a Cap Inspection and Maintenance Technical Memorandum (Tech Memo).

## References

Aspect Consulting, LLC (Aspect), 2022, Operations, Maintenance, and Monitoring Plan, Final, Parcel 15 (Portac) Cleanup Phase 1, Tacoma, Washington, June 10, 2022.

CRETE Consulting, Inc., 2024, 2023 Roller-Compacted Concrete (RCC) Cap Inspection and Maintenance, Port of Tacoma Parcel 15 (Portac), 4215 State Route 509, September 4, 2024.

Washington State Department of Ecology (Ecology), 2021, Cleanup Action Plan, Parcel 15 (Portac) – Port of Tacoma, July 6, 2021.

Attachments:





Tables  
Figures

# Tables





**Table 1 Environmental Cap Condition Summary - 2025 Inspection (April 9 and 11, 2025)**

Required Inspection Elements	Observed Condition	Recommended Actions
Presence of cracks wider than 1/8 inch	See Table 2	It is recommended that these cracks and gouges continued to be monitored and that channels at O9, O14, and O15 be cleaned out prior to the next inspection (Summer 2027).
Sub-base material exposed	No sub-base material was exposed.	None
Pavement edge deterioration	No pavement edge deterioration was observed.	None`






**Table 2 Environmental Cap Field Observations**  
**Port of Tacoma, Parcel 15 (Portac)**  
 Conducted April 11, 2025

Location ID	Observations	Recommended Actions	Photographs
O1	Intermittent linear joint cracks in pavement; wider than 1/8 in; generally extending east/west; older asphalt sealant is cracking.	Remove vegetation as needed and re-seal cracks. Continue to observe at next inspection.	
O2	Intermittent cracks; up to 1/4-inch; variable lengths and orientations; sealant present but gradually deteriorating and vegetation starting to grow in them.	Observe at next inspection.	
O3	Excessive vegetation around cap perimeter; vegetation infiltrating cracks	Clear/maintain vegetation; observe at next inspection.	
O4	Outer layer of asphalt flaking/chipping off in misc. patterns; lower layers of asphalt still intact.	Observe at next inspection.	






**Table 2 Environmental Cap Field Observations**  
**Port of Tacoma, Parcel 15 (Portac)**  
 Conducted April 11, 2025

Location ID	Observations	Recommended Actions	Photographs
05	Intermittent linear joint cracks in pavement; wider than 1/8 in; generally extending east/west; older asphalt sealant is cracking.	Remove vegetation as needed. Continue to observe at next inspection.	
06	Intermittent linear joint cracks in pavement; wider than 1/8 in; generally extend north/south; older asphalt sealant is cracking.	Remove vegetation as needed. Continue to observe at next inspection.	
07	Perimeter curb broken and displaced, curbing is only in select sections, it does not appear to have a stormwater function.	Consider replacing/repairing, if needed.	
08	Cracks reforming through previously applied sealant. Sediment and minor vegetation taking root in re-opened cracks.	Continue to observe at next inspection.	

**Table 2 Environmental Cap Field Observations**  
**Port of Tacoma, Parcel 15 (Portac)**  
 Conducted April 11, 2025

Location ID	Observations	Recommended Actions	Photographs
O9	channel in pavement; 3-4 in. wide; extends 50-70 ft. northwest/southeast	Clear debris and vegetation, observe at next inspection.	
O10	Low area at end of cut channel. Storm water tends to pond here	Observe area at next inspection if excessive crack formations.	
O11	Intermittent linear joint cracks in pavement; wider than 1/8 in; older asphalt sealant is cracking.	Continue to observe at next inspection.	
O12	Gaps forming in newer asphalt sealant along asphalt transition zone.	Continue to observe on next inspection.	
O13	Cracks reforming through previously applied sealant. Sediment and minor vegetation taking root in re-opened cracks. Cracks approximately 1/8 inch wide. Linear north/south cracks extend across a wide area.	Observe at next inspection for sealant crack growth.	






**Table 2 Environmental Cap Field Observations**  
**Port of Tacoma, Parcel 15 (Portac)**  
**Conducted April 11, 2025**

Location ID	Observations	Recommended Actions	Photographs
O14	Cut channel in pavement; 4-5 in. wide; extends 40-60 ft. northwest/southeast.	Clear debris sediment; observe at next inspection.	
O15	Cut channel in pavement; 4-5 in. wide; extends about 40 ft. northwest/southeast.	Clear debris sediment; observe at next inspection.	
O16	Scours in pavement; scours not all the way through the pavement thickness.	Observe at next inspection.	
unmarked monitoring well	Various monitoring wells throughout cap that are not part of the OMMP compliance monitoring program.	Observe all monitoring wells at next inspection to insure lids/covers intact.	
O17	Cracks reforming through previously applied sealant. Sediment and vegetation taking root in re-opened cracks. Cracks approximately 1/8 inch wide. Linear east/west cracks extend across a wide area.	Observe at next inspection for crack growth.	

**Table 3 Stormwater Structures Observations**  
**Port of Tacoma, Parcel 15 (Portac)**  
 Conducted April 9 and 11, 2025

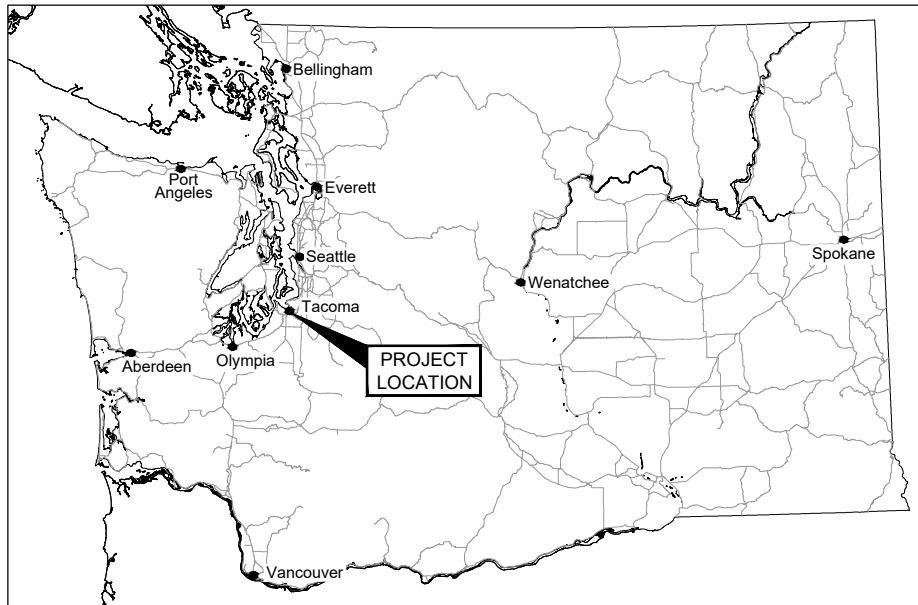
Location ID	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
CBHM1 (SV2)	catch basin manhole	see SV2 below	NM (confined space)	grated catch basin is part of the SV2 structure	see SV2 below	
CBHM2	catch basin manhole	functioning normally	NM	clear of sediment and vegetation	continue to maintain structure under stormwater permit	
CBMH3	catch basin manhole	functioning normally	approx. 2-inches at grating	sediment around catch basin; minor vegetation	remove accumulated sediment; continue to maintain structure under stormwater permit	
CBMH4	catch basin manhole	functioning normally	approx. 2-inches at grating	sediment around catch basin; minor vegetation	remove accumulated sediment; continue to maintain structure under stormwater permit	
CBMH5 (SV3)	catch basin manhole	see SV3 below	NM (confined space)	grated catch basin is part of the SV3 structure	see SV3 below	
CBMH6	catch basin manhole	functioning normally	approx. 2 around grating	sediment debris around basin grating; some vegetation growing around perimeter of basin	remove accumulated sediment and vegetation; continue to maintain structure under stormwater permit	
CBMH7	catch basin manhole	functioning normally	up to 2-inch	appreciable sediment and debris around basin grating; minor vegetation growing around perimeter of basin	remove accumulated sediment, debris and vegetation; continue to maintain structure under stormwater permit	

**Table 3 Stormwater Structures Observations**  
**Port of Tacoma, Parcel 15 (Portac)**  
 Conducted April 9 and 11, 2025

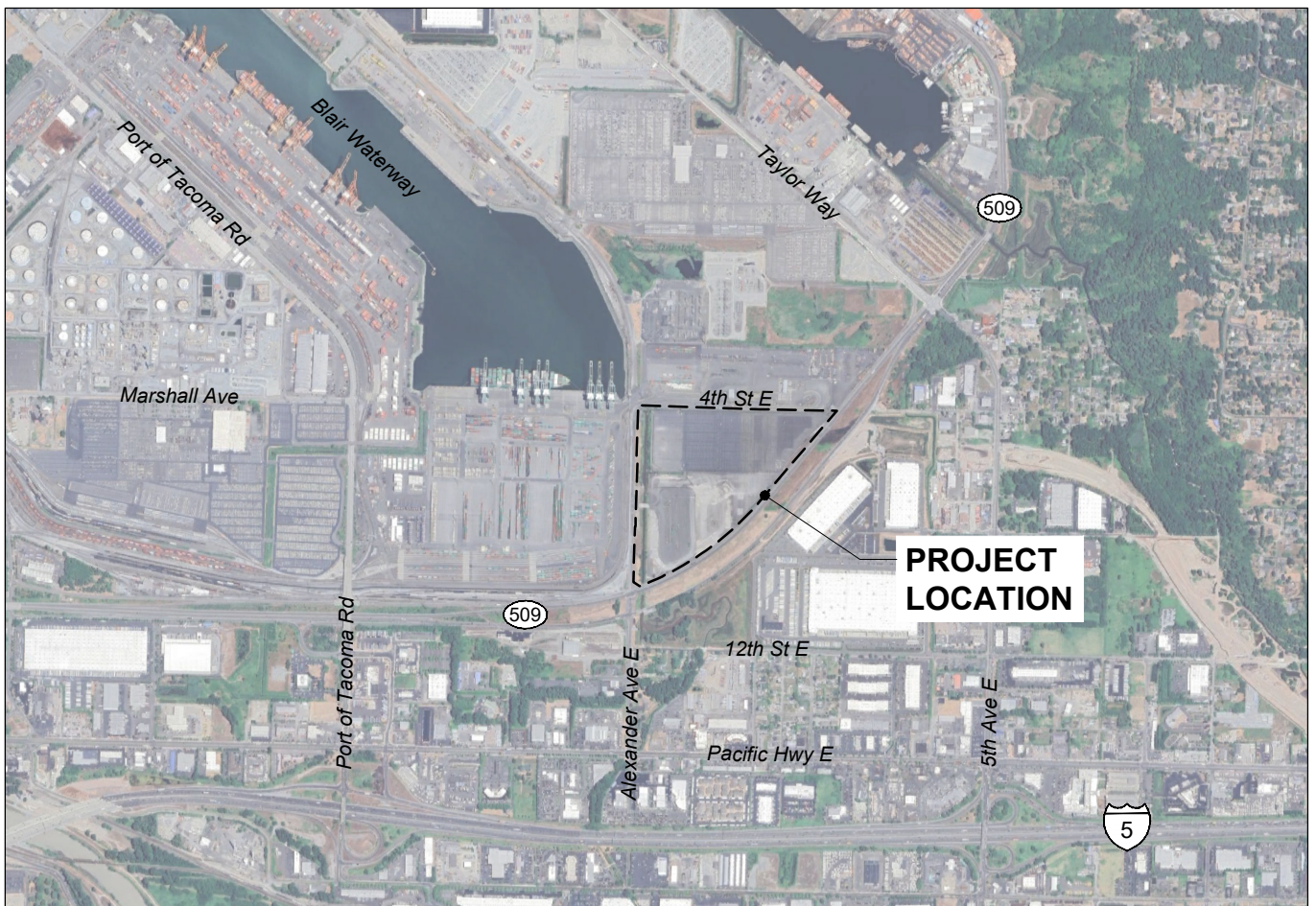
Location ID	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
CBMH8	catch basin manhole	functioning normally	up to 1-inch	some sediment and debris in and around basin grating	remove accumulated debris and sediment; continue to maintain structure under stormwater permit	
SV2	storm water vault	functioning normally	NM	minimal standing water; no active water flow through vault.	minor sediment accumulation around structure; sediment expected to wash into the structure; sweep area to remove excess sediment and trash debris	
OF2	outfall	apparently functioning normally; accessible during low tide	NA	possible gaps in/around backflow valve	Inspect valve installation and functionality by qualified installer; remove accumulate algal buildup on and in flaps.	
SV3	storm water vault	functioning normally	NM	minimal standing water; no active water flow through vault.	no maintenance necessary	
OF3	outfall	apparently functioning normally; accessible during low tide	NA	possible gaps in/around backflow valve	Inspect valve installation and functionality by qualified installer; remove accumulate algal buildup on and in flaps.	

Notes:  
 NA - not applicable  
 NM - not measured

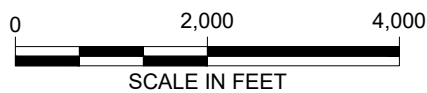
# Figures



WASHINGTON LOCATION MAP



VICINITY MAP



Source: Google Earth. Image date 7/18/2023

File: PoTac Portac VicMap.dwg Layout: Vicmap



Port of Tacoma - Parcel 15 (Portac)  
Cap Inspection Technical Memo  
May 2025

Figure 1  
Vicinity Map



- LEGEND**
- Pavement - Field Observation (O)
  - Catch Basin (CB)
  - Catch Basin Maintenance Hole (CBMH)
  - Oil/Water Separator (OWS)
  - Outfall (OF)
  - Spill Containment Vessel (SV)
  - Storm Pipe
  - Cap
  - Port Parcel 15
  - Pierce County Tax Parcel

