ENVIRONMENTAL CAP INSPECTION REPORT

FORMER LOUISIANA PACIFIC/ PONY LUMBER FACILITY

Enforcement Order No. DE 92TC-S312 (December 21, 1992)
Washington State Department of Ecology Facility Site ID# 1209
Inspection Date: February 15, 2017

March 31, 2017

Prepared by:

Windward environmental LLC

200 West Mercer Street, Suite 401
Seattle, Washington • 98119

LANDAU ASSOCIATES

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Acronyms

Ecology	Washington State Department of Ecology
MOU	Memorandum of Understanding
LP/Pony	Louisiana Pacific/Pony Lumber Facility
O&M	operations and maintenance
Pony Lumber	Pony Lumber Company, LLC
Port	Port of Tacoma
Windward	Windward Environmental LLC
WWLS	Wallenius Wilhelmsen Logistics Services, LLC

Certification

I hereby certify that I am familiar with the facilities addressed in this report and that the inspection was conducted in accordance with acceptable engineering practices.

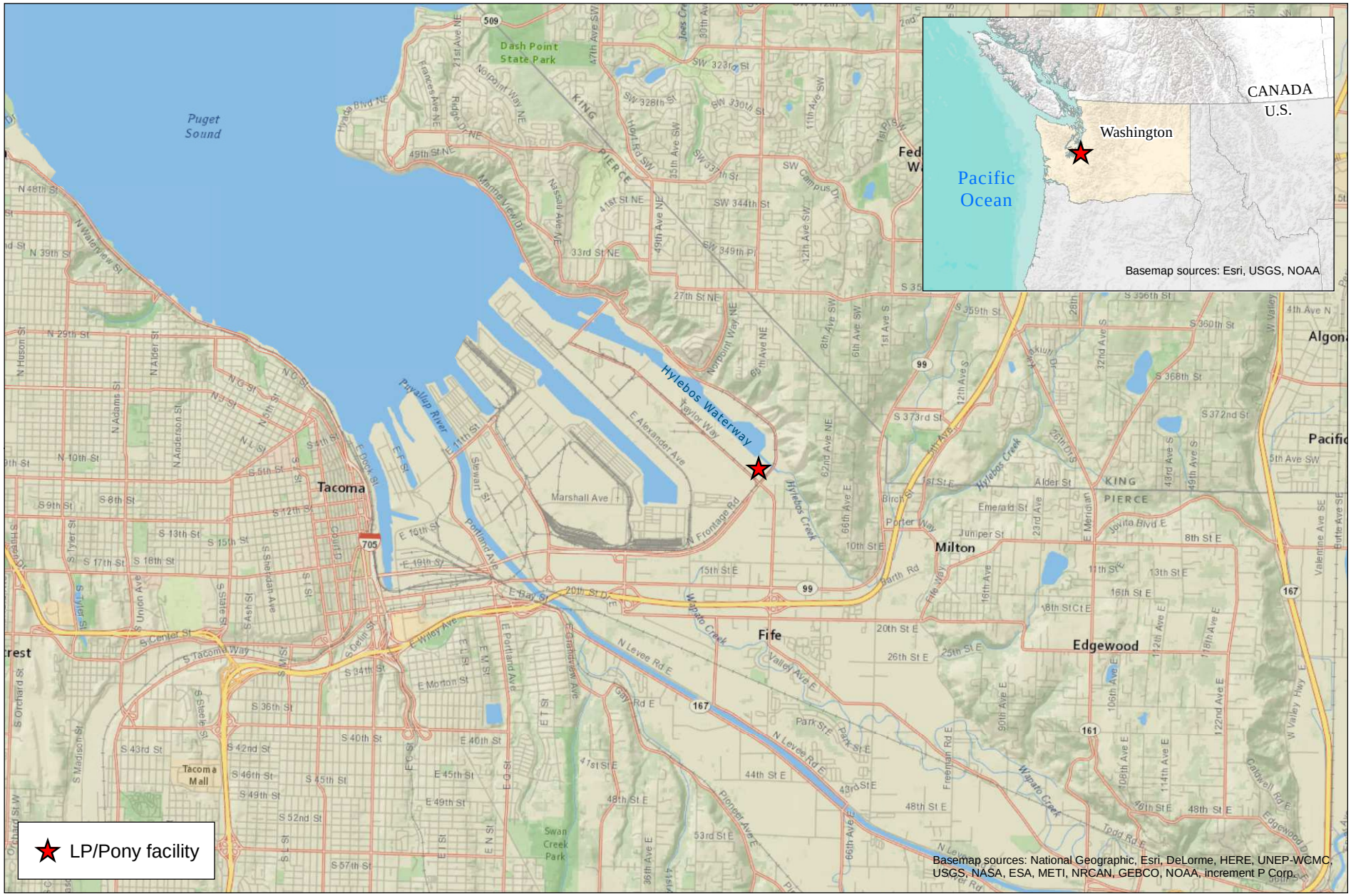
Warren G. Hansen, PE

Expires 4-22-2019

1 Introduction

This report summarizes the field activities and results for the cap inspection conducted on behalf of the Port of Tacoma (Port) for the former Louisiana Pacific/Pony Lumber Facility (LP/Pony) located at 3701 Taylor Way in Tacoma, Washington (Figure 1). LP/Pony is owned by the Port and is leased to Auto Warehousing Company for automobile storage, and to Wallenius Wilhelmsen Logistics Services, LLC (WWLS) for equipment storage (Ecology 2016). The 18-ac facility is covered with an environmental cap and has several stormwater drainage features, further described herein.

Cap inspection activities were conducted in accordance with the requirements identified in the Enforcement Order (No. DE 92TC-S312) dated December 21, 1992, which was issued to the Louisiana Pacific Corporation by the Washington State Department of Ecology (Ecology). Activities were also in keeping with the operations and maintenance (O&M) manual (LP Tacoma 2000) prepared by LP Tacoma, with the exception that cracks wider than 1/8 in. were noted, rather than only those wider than ½ in.



Windward environmental LLC

N

0 1 2 Miles

0 1 2 Kilometers

Figure 1. LP/Pony vicinity map

Prepared by mikey, 3/29/2017, W:\Projects\Landau-Port of Tacoma on-call\Data\GIS\Maps and Analyses\Cap Inspections 2017\LA Pacific Pony\6591 Vicinity map.mxd

1.1 PURPOSE AND SCOPE

The purpose of this report is to present the findings of the 2017 environmental cap and stormwater drainage system inspection at LP/Pony. The inspection was performed by Windward Environmental LLC (Windward) on February 15, 2017, in accordance with the scope of work provided by the Port (Port of Tacoma 2016), which included the following tasks:

- Inspection of the asphalt/concrete pavement for presence of cracks 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 in. wide, sub-base material exposed, pavement edge deterioration, and general appearance)
- Evaluation of the structural and functional condition of the cap and drainage systems (including catch basins, manholes, and oil/water separators)
- Evaluation of debris/sediment accumulation in the stormwater structures

The purpose of the environmental cap is to prevent water infiltration, exposure of humans and the environment to underlying materials, and erosion. The stormwater drainage system is designed to convey stormwater off the cap surfaces to prevent infiltration and erosion.

1.2 FACILITY BACKGROUND

LP/Pony, an 18-ac facility situated on industrially zoned land at the head of the Hylebos Waterway (Figure 1), is the subject of this report. The property is bordered by Hylebos Creek to the northeast, Highway 509 to the southeast, and Taylor Way to the southwest. Beginning in 1968, Louisiana Pacific used LP/Pony as a log yard (Ecology 2016). Between 1968 and 1985, approximately 1,800 tons of slag from the ASARCO smelter were placed on the facility (Ecology 2016; LP Tacoma 2000). In the 1980s, Ecology found elevated levels of arsenic, copper, lead, and zinc in water samples collected from LP/Pony, and concluded that the ASARCO slag was leaching contaminates and that the facility's stormwater was contributing to contamination in Hylebos Creek and the Hylebos Waterway.

Ecology issued an order requiring a site and groundwater investigation and feasibility study in 1987; in 1990, it issued a Remedial Action Order (No. DE 90-S170) requiring Louisiana Pacific to evaluate the effectiveness of installing an environmental cap for site cleanup, conduct subgrade testing, and prepare a cap design (Ecology 2016). In 1992, Ecology issued an Enforcement Order (No. DE 92TC-S312) requiring the construction of the environmental cap. Construction of the cap was completed in 1993.

Pony Lumber Company, LLC (Pony Lumber) purchased the property from Louisiana Pacific in 2004 and continued to operate it as a log yard. The Port purchased the property from Pony Lumber in 2006, although Pony Lumber leased the property from the Port until 2008. Monitoring and inspection requirements have been transferred with ownership; the Port is required to conduct cap inspections every 30 months pursuant to the Memorandum of Understanding (MOU) (Ecology and Port of Tacoma 2011). The last inspection was performed in September 2014 (Hart Crowser 2014).

Groundwater quality is also monitored on a 30-month schedule. The groundwater monitoring results are documented in a separate report (LAI 2017).

During the most recent periodic review, Ecology determined that the remedial action conducted at the site continues to be protective of human health and the environment (Ecology 2016).

2 Field Observations

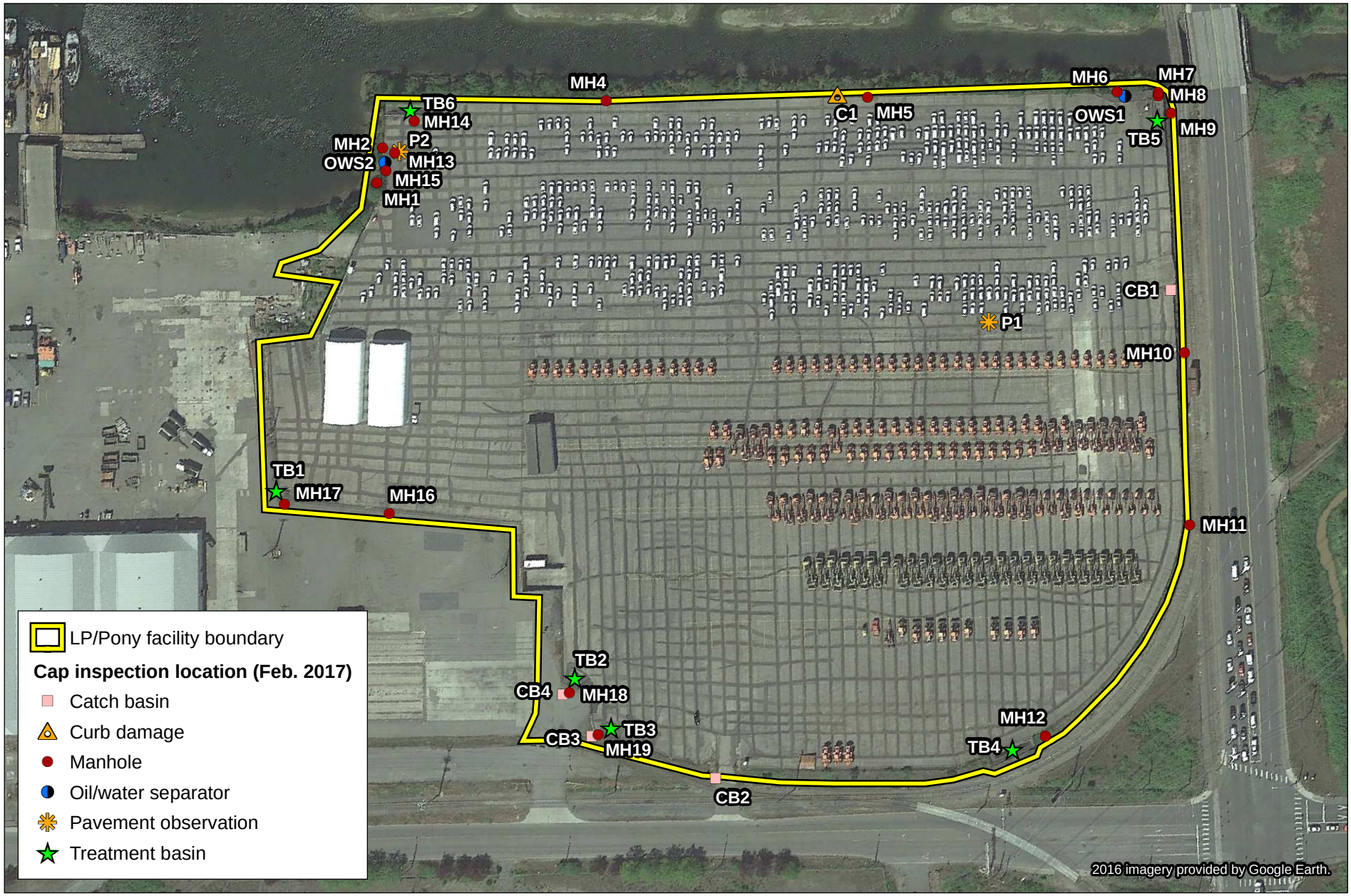
Windward performed the cap inspection on February 15, 2017. Use was made of existing repair and maintenance documentation provided by the Port. Figure 2 shows the locations of items observed in the field.

2.1 ENVIRONMENTAL CAP

The general appearance of the environmental cap was good. Many cap repairs, including those made with slurry overlays and caulking, were observed. No sub-base material was exposed. The curb surrounding the facility was functioning as intended. Repairs to the curb were observed on the north side of the facility at locations that had been noted for repair during the previous inspection (Hart Crowser 2014). These locations are shown on Figure 3. Table 1 provides a summary of the cap condition observed during the inspection.

Table 1. Environmental cap condition

Required Inspection Elements	Observed Condition	Required Actions
Presence of cracks wider than 1/8 in.	one crack wider than 1/8 in.	See Figure 2 and Table 2 for location of crack and recommended repair.
Sub-base material exposed	no sub-base material exposed	none
Pavement edge deterioration	one area of curb damage; no pavement edge deterioration	See Figure 2 and Table 2 for location of curb area.
Degradation, subsidence, general appearance	no degradation or subsidence; one divot and one area of damaged pavement	See Figure 2 and Table 2 for locations of damage and recommended repairs.



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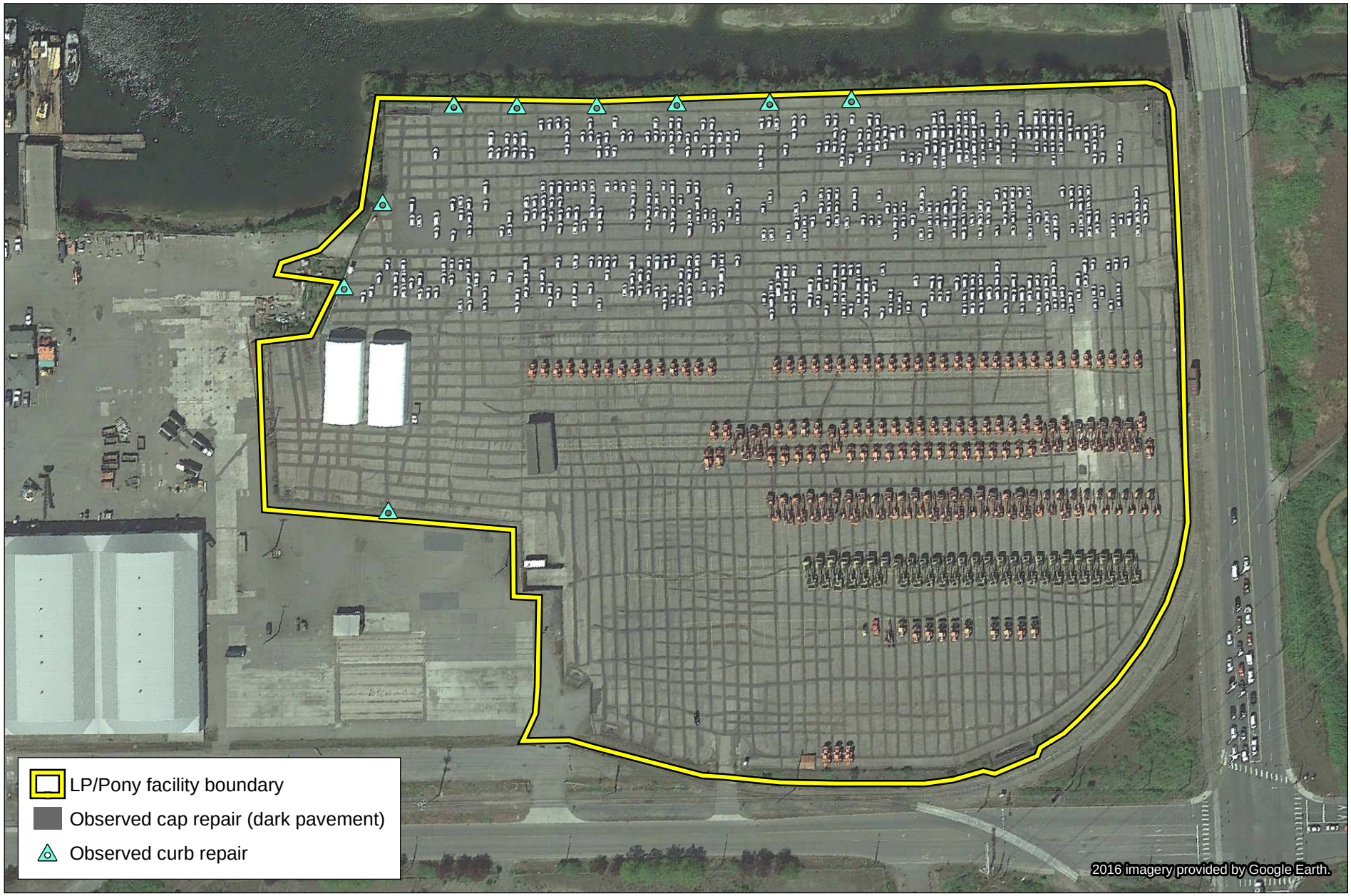
0 0.025 0.05 Miles

0 200 400 Feet

Figure 2. LP/Pony field observations

Prepared by mikey, 3/29/2017, W:\Projects\Landau-Port of Tacoma on-call\Data\GIS\Maps and Analyses\Cap Inspections 2017\LA Pacific Pony\6584 LA Pacific Pony cap inspection locations Feb 2017.mxd



Windward environmental LLC

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0 0.025 0.05 Miles

0 200 400 Feet

Figure 3. LP/Pony cap repair — 2015

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As described in Table 1 and shown on Figure 2, one crack wider than 1/8 in. was observed and should be repaired (P1 on Figure 2). An area of curb degradation approximately 4 ft long was also observed (C1 on Figure 2). This condition is described further in Table 2. The curb damage does not extend to the pavement surface and the curb continues to direct stormwater flow. It is recommended that the curb be monitored and evaluated for repair during the next inspection cycle.

An area of pavement deterioration was observed in the vicinity of treatment basin TB6. This area is marked on Figure 2, and recommended actions are described in Table 2. Table 2 lists cap condition-related issues observed during the inspection, which are also shown on Figure 2.

Table 2. Environmental cap issues observed during inspection

Location ID[a]	Observations	Recommended Actions	Photos
C1	curb damage extending approximately 4 ft	Monitor and reevaluate for repair during next inspection cycle.	
P1	crack wider than 1/8 in. extending approximately 12 ft	Repair.	
P2	damaged concrete near manhole	Repair pavement near manhole.	

[a] See Figure 2.

C – curb

ID – identification

P – pavement

2.2 STORMWATER DRAINAGE SYSTEMS

The stormwater drainage system consists of 4 catch basins, 19 manholes, 2 oil/water separators, and 6 treatment basins. Stormwater features on the northern portion of the property are maintained by the Port under its phase I municipal stormwater permit. Stormwater features on the southern portion of the property are maintained by WWLS under its industrial stormwater general permit. Drainage structures were inspected for structural and functional condition and debris and sediment accumulation. Two

manholes were not inspected: manhole MH3 could not be located and manhole MH6 was not accessible due to vegetation and slope erosion. Appendix A summarizes the observations made at each drainage structure.

During the cap inspection, the catch basins were observed to be functioning normally, and the catch basin inserts, present in each catch basin, were functioning as intended. The inspected manholes were also functioning normally.

The two oil/water separators appeared to be structurally sound and fully functioning. It is recommended that the oil/water separators be pumped out and inspected during the dry season, particularly for signs of corrosion (see Appendix A).

The treatment basins were generally functioning well, although stormwater flow was bypassing several of the screens due to moss growth and accumulated sediment and debris.

3 Status and Recommendations

3.1 Maintenance and Repair Performed Since Previous Inspection

3.1.1 Environmental cap

In the 2014 inspection report, it was recommended that cracks be sealed or resealed, and that deteriorated pavement, areas of exposed sub-base material, and broken curbs be repaired (Hart Crowser 2014). As described in Section 2.1, the 2016 inspection found that cracks in the cap surface and areas of curb damage had been repaired since the 2014 inspection, as had areas of exposed sub-base material and pavement deterioration.

3.1.2 Stormwater drainage system

The 2014 inspection report recommended that sediment be removed from treatment basins TB3, TB4, TB5, and TB6; the boom in treatment basin TB6 be replaced; the inserts in catch basins CB1 and CB3 be replaced; and the vegetation around manholes MH2, MH3, MH4, MH5, MH12, and MH19 be cleared (Hart Crowser 2014). During Windward's inspection, it appeared that sediment had been removed from the treatment basins, although sediment has re-accumulated in some locations (see Appendix A). Booms were not present in any of the treatment basins, likely because site use has changed from a log yard to equipment and automobile storage. The inserts in all four catch basins were in good condition and functioning well, indicating that the inserts in catch basins CB1 and CB3 had been replaced. Vegetation had been cleared from the areas around manholes MH2, MH4, MH5, and MH19. Vegetation was removed from the vicinity of manhole MH12 during the inspection. Windward was unable to locate manhole MH3. The area surrounding the apparent location of the manhole (the north corner of the facility, outside the fence) was overgrown with impenetrable vegetation.

3.2 Recommendations

3.2.1 Environmental cap

During this inspection, Windward observed three areas on the environmental cap for which repairs are recommended. These areas are depicted on Figure 2 and described in Table 2.

- One crack wider than 1/8 in. and approximately 12 ft long was observed at location P1 (Figure 2). This crack should be repaired.
- An area of pavement deterioration was observed in the north corner of the facility at location P2 (Figure 2). The deterioration should be patched.

- A damaged section of curb approximately 4 ft long was observed along the eastern fence line and should be monitored and reevaluated for repair during the next inspection cycle (location C1 on Figure 2).

In addition, on the southwest portion of the facility (leased to WWLS), some slurry overlays that had been applied to the concrete pavement were deteriorating. This damage appeared to have been caused by the heavy equipment moved and stored in this area. The deterioration is surficial, does not impact the efficacy of the environmental cap, and does not require repair. The slurry overlays should be monitored during future inspections to check for further deterioration and possible damage to the cap and/or sealed joints and cracks that may open in the underlying concrete cap.

3.2.2 Stormwater drainage system

Several maintenance and repair activities are recommended for the stormwater drainage system (Figure 2; Appendix A). Accumulated sediment should be removed from the treatment basins and the accompanying screens and grates, and misaligned screens should be repositioned to make sure runoff entering the basins is directed through the screen mesh.

It is also recommended that vegetation be cleared from the vicinity of manhole MH6 so that the structure is accessible from the gate on the east fence during future inspections, and from around manhole MH3 so that the structure can be located during future inspections.

Debris should be removed from manholes MH13, MH14, and MH15, and accumulated sediment should be removed from the vicinity of catch basins CB1 and CB2.

The Port should consider pumping out the oil/water separators during the dry season to enable a full inspection of these structures, particularly for corrosion.

Required and recommended actions are further described in Appendix A.

3.3 LIMITATIONS

Observations contained in this report are limited to environmental cap areas that were visible to the Windward field team. In some instances, portions of the cap surface may have been covered and not readily available for inspection. Inspection of stormwater structures was limited to observations made from the surface and by means of direct observation, probes (extendible poles to check for sediment), and photography. No confined space entry was performed. Observation of some stormwater structures was also be limited by storm flow and/or the presence of damaged or sediment-laden catch basin inserts that could not be safely removed. No guarantee is made that all cap or stormwater deficiencies that could impact cap/drainage system performance were identified.

4 References

Ecology, Port of Tacoma. 2011. Memorandum of understanding. Former log yard groundwater monitoring and cap inspection. Washington State Department of Ecology and Port of Tacoma.

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Port of Tacoma. 2016. Long-term monitoring events - scope of work February 2017. Port of Tacoma, Tacoma, WA.

APPENDIX A. STORMWATER DRAINAGE SYSTEM FIELD OBSERVATIONS

STORMWATER DRAINAGE SYSTEM FIELD OBSERVATIONS

Contents:

Table A1 provides details regarding the field observations and recommended actions for each stormwater drainage structure visited during the field inspection.

Table A1. Stormwater structure observations

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
CB1	catch basin	structurally sound, functioning normally	4	insert in catch basin; insert full of sediment; structure has a T-outlet; vault full of water to outlet invert; sediment accumulation around grate; some debris in catch basin	Clean or replace insert; remove accumulated sediment from around grate; remove debris from catch basin in accordance with stormwater maintenance requirements.	
CB2	catch basin	structurally sound, functioning normally	0	insert in catch basin; no sediment in insert; did not pull grate/insert because of large amount of accumulated sediment in vicinity of grate	Remove accumulated sediment from around grate.	

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
CB3	catch basin	structurally sound, functioning normally	0	insert in catch basin; no sediment in insert; catch basin elevated relative to surroundings, does not appear to collect substantial flow	none	
CB4	catch basin	structurally sound, functioning normally	0	insert in catch basin; no sediment accumulation in insert	none	
MH1	manhole	structurally sound, functioning normally	structure too deep to measure	no debris inside structure	none	
MH2	manhole	structurally sound, functioning normally	structure too deep to measure	no debris inside structure	none	

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
MH3	manhole	could not locate	nm	none	Observe during next inspection.	[no photo]
MH4	manhole	structurally sound, functioning normally	structure too deep to measure	no debris in structure	none	
MH5	manhole	structurally sound, functioning normally	structure too deep to measure	no debris in structure	none	
MH6	manhole	inaccessible and unsafe to observe due to vegetation and slope erosion	nm	none	Clear vegetation so that structure is accessible from gate on northeast side of facility fence; observe during next inspection.	

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
MH7	manhole	structurally sound, functioning normally	structure too deep to measure	some foam floating in structure	none	
MH8	manhole	structurally sound, functioning normally	structure too deep to measure	no debris in structure	none	
MH9	manhole	structurally sound, functioning normally	structure too deep to measure	no debris in structure; high water level in structure	none	
MH10	manhole	structurally sound, functioning normally	structure too deep to measure	no debris in structure	none	

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
MH11	manhole	structurally sound, functioning normally	structure too deep to measure	no debris in structure	none	
MH12	manhole	structurally sound, functioning normally	structure too deep to measure	no debris in structure; high flow at time of inspection	none	
MH13	manhole	structurally sound, functioning normally	structure too deep to measure	small amount of floating organic debris	Remove organic debris from structure in accordance with stormwater maintenance requirements.	
MH14	manhole	structurally sound, functioning normally	structure too deep to measure	organic debris in structure	Remove organic debris from structure in accordance with stormwater maintenance requirements.	

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
MH15	manhole	structurally sound, functioning normally	structure too deep to measure	organic debris in structure	Remove organic debris from structure in accordance with stormwater maintenance requirements.	
MH16	manhole	structurally sound, functioning normally	structure too deep to measure	high water level	none	
MH17	manhole	structurally sound, functioning normally	structure too deep to measure	high water level; some foam on water surface	none	
MH18	manhole	structurally sound, functioning normally	structure too deep to measure	no debris in structure	none	

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
MH19	manhole	structurally sound, functioning normally	structure too deep to measure	no debris in structure	none	
OWS1	oil/water separator	structurally sound, functioning normally	0	metal structure	Pump out the oil/water separator for inspection and check for corrosion.	
OWS2	oil/water separator	structurally sound, functioning normally	0	metal structure	Pump out the oil/water separator for inspection and check for corrosion.	

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
TB1	treatment basin	structurally sound, functioning normally	1–2	no screens; some organic debris on grates; some deterioration of pavement curb on east corner of basin	Replace screens; remove accumulated organic debris and sediment in accordance with stormwater maintenance requirements; repair deteriorated pavement curb if condition worsens.	

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
TB2	treatment basin	structurally sound, functioning normally	1	small amount of sediment in west grate; some organic debris around screen	Remove accumulated sediment from southwest grate in accordance with stormwater maintenance requirements; remove organic debris from screen.	

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
TB3	treatment basin	structurally sound, functioning normally except for some flow bypassing screen	0	organic debris in basin and on grates; small amount of mud around basin; moss accumulated on screen; flow bypassing screen	remove organic debris and mud from grates and basin in accordance with stormwater maintenance requirements	

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
TB4	treatment basin	structurally sound; flow bypassing screen	0	1–4 in. of mud accumulated on screen preventing flow from passing through screen and causing large amount of standing water up to 2 in. deep in vicinity of treatment basin; flow bypassing screen has caused some erosion of concrete curb on the north side of basin; organic debris on grates	Remove organic debris from grates; repair deteriorated pavement curb if condition worsens.	

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
TB5	treatment basin	structurally sound; flow bypassing both screens	2–3	organic debris and trash on grates; one screen pulled up so that stormwater flows under it; other screen moved so that stormwater flows around it	Remove organic debris and trash from grates; remove accumulated sediment from basin in accordance with stormwater maintenance requirements; clean screens.	

Location ID[a]	Type of Structure	Observed Condition	Sediment Accumulation (inches)	Additional Observations	Recommended Actions	Photos
TB6	treatment basin	structurally sound; screens not functioning	0	east screen moved to inside basin; 3–4 in. of sediment accumulated on south screen preventing flow; organic debris on grates; high water level in basin; standing water in vicinity of basin	Removed accumulated organic sediment in accordance with stormwater maintenance requirements.	

[a] See Figure 2 in the main document.

ID – identification ISGP – industrial stormwater general permit nm – not measured