

Date: September 8, 2020
To: Ben Leake, EPA
Through: Paul Seidel, NWR Cleanup Manager
From: Alex Liverman, Portland Harbor Stormwater Coordinator
Subject: Source Control Decision
Peninsula Iron Works
ECSI # 5686

1.0 Introduction

This memorandum presents the basis for the Oregon Department of Environmental Quality source control decision for Peninsula Iron Works site, located at 6618 N. Alta Avenue in Portland.

A Source Control Evaluation for the stormwater pathway at the site was conducted in accordance with the 2005 *EPA/DEQ Portland Harbor Joint Source Control Strategy*, also known as the JSCS, under a Voluntary Cleanup Agreement between PGE and DEQ, which was executed in December 2015. The evaluation addressed the potential contaminant migration pathway of stormwater from the site to the Portland Harbor reach of the Willamette River. Residual soil contamination remains adjacent to the site on N. Bradford Street, however, stormwater from Peninsula Iron Works no longer discharges to this area. DEQ finds that the site is not a current or future threat of contamination to the river. A discussion of site conditions and the basis for DEQ's decision are presented below.

2.0 Site Description and History

As shown on Figure 1, the Peninsula Iron Works site is separated from Cathedral Park to the west by the unimproved N. Bradford Street and Union Pacific Railroad right-of-ways, and bounded to the north by N. Alta Avenue, to the east by N. Crawford Street and to the south by a parking area owned by the City of Portland Bureau of Parks and Recreation.

The site was originally developed in 1905 as a horse stable and, in 1911, began operating as a foundry and machine and blacksmith shops. Foundry, machine works, and pattern works operations continued at the site through the 1950s. George Johnson began working as a machinist at the site in 1925, acquired stock ownership in 1946 and eventually the Johnson family became the sole owners of the facility, which they maintain today. By 1969, the Johnson family remodeled the facility in phases and focused on machine shop and metal fabrication operations, which continue today.

As shown on Figure 2, the existing building covers the entirety of the tax lot except for a 5-foot wide by 55-foot long grassed strip along the north side of the building and paved rectangular areas along the west edge and at the southwest corner of the site, which are partially covered by awnings. Site traffic, parking, loading and storage have extended onto the right-of-way of N. Alta Avenue, which is served by City of Portland catch basins conveying stormwater to the Willamette River through city outfall 52. Drainage from most of the site's enamel painted, sheet metal roofs formerly discharged to the ground and then flowed over asphalt and potentially erodible soils to city catch basins on either side of the building, which also receive runoff from other sites and roadway

areas. A portion of this overland flow ponded at a catch basin at the southwest edge of the Cathedral Park parking lot and, at times, flowed across Bradford Street (railroad right-of-way) and into the Park. In 2019, site roof drainage was redirected to discharge directly to underground laterals connecting to this city conveyance system, without first flowing overland.

3.0 Regulatory History

An underground heating oil tank was decommissioned by removal in October 2012. Soils were excavated and sampled at a depth of 5.5 feet and analyzed for petroleum hydrocarbons and PCBs. While limited PAHs were detected, PCBs were not detected, and excavated soil was disposed of at the Hillsboro landfill. The excavation site was refilled and covered with asphalt pavement. DEQ registered the report and certification that the cleanup met DEQ's requirements, and closed the file (No: 26-12-1175) on October 24, 2012. Besides the historical petroleum leak from the removed heating oil tank, there are no other known or reported releases of hazardous substances at the subject site.

Because all industrial activities are conducted under cover, the site first received a No Exposure Certification in 2001 from the City of Portland, as DEQ's agent for implementation of the NPDES 1200-Z Industrial Stormwater General Permit. To maintain compliance with the certification, no monitoring of stormwater discharge is required, but continued implementation of best management practices to prevent exposure must be demonstrated upon inspection. The site's NEC was revoked by the City of Portland in 2008, due to observed operations being conducted outdoors. The NEC was reissued in 2009 and has been maintained since.

3.1 Other Investigations

The City of Portland investigated PCB contamination around the subject site as part of their source tracing activities for outfall basin 52. As described the City's request for site assessment, samples of erodible soils along the N. Bradford Street/railroad right-of-way and areas of Cathedral Park, as well as borings under pavement in the City-owned parking lot adjacent to the site, showed concentrations of PCBs ranging from non-detect to 21,700 ug/kg (COP 2011). Some of the erodible soil locations were within the flow path of stormwater discharged from site roofs. The city also found PCBs ranging from 11 ug/kg to 8,160 ug/kg in catch basin, manhole and inline solids and subsequently removed accumulated solids from stormwater conveyance lines along railroad right-of-way, between N. Baltimore Avenue and N. Alta Avenue in 2010 (COP 2011 and 2012). City erodible soil sampling locations are shown on Figure 3 and summary of the results is presented in the Source Control Evaluation report.

Direct discharge to the river of stormwater in contact with PCB contamination along the railroad right-of-way is unlikely, though tracking of soils to pavement served by catch basins is possible. DEQ performed a qualitative risk analysis for park user exposure to PCBs in the railroad right-of-way/park margin. DEQ determined that, although PCB concentrations were above soil occupational risk-based concentrations, occupational exposure is more conservative than the actual recreational exposure that could occur, so immediate remediation action was not warranted (DEQ 2012). However, remediation to eliminate or limit long-term exposure of park users and any potential for tracking of contaminated soils to catch basins should be undertaken through DEQ's Cleanup program, which will require the cooperation of Union Pacific Railroad and the City of Portland.

Peninsula Iron's research indicated that oils containing PCBs were not used during the history of the site (CECS 2012b). But to confirm PCBs were not currently present on the Peninsula Iron site, six 3-inch square wipe samples were collected on February 21, 2012 from oil stained floor areas inside the building where transformers and other equipment were previously located. Wipe sample locations are shown on Figure 3. The samples were analyzed for PCB aroclors, which were not detected (CECS 2012b).

4.0 Source Control Evaluation

Because the site is located within the uplands draining to the Portland Harbor Superfund study area, upland source control investigations were guided by the 2005 EPA/DEQ Joint Source Control Strategy. The objective of a source control evaluation is to determine whether existing and potential sources of contamination at the site have been identified and if additional characterization or source control measures are needed. Due to the lack of any banks or frontage on the Willamette River and no known groundwater issues under the site, DEQ determined that erosion of contaminants from riverbanks, overwater discharges and groundwater are not complete pathways. These pathways were, therefore, excluded and are not discussed further in this report.

DEQ determined that site stormwater flowing overland and into conveyance infrastructure discharging to Portland Harbor was a potentially complete contaminant transport pathway. The site stormwater investigation was guided by DEQ's 2009 *Guidance for Evaluating the Stormwater Pathway at Upland Sites*, which was updated in 2010 and 2015, and the remainder of this decision document discusses evaluation of this pathway.

4.1 Contaminants of Potential Concern

Because industrial activities occur inside and the metal roof is coated with enamel, there are no current contaminants of concern for the stormwater pathway from the site. However, based on historical site operations, City soil sampling results adjacent to the site, the following are contaminants of potential concern for Portland Harbor at the site:

- Polychlorinated biphenyls (PCBs)
- Copper
- Nickel
- Chromium
- Lead

Characterization of soils adjacent to the site and stormwater solids in the City collection and conveyance system did not test for the following Portland Harbor ROD Table 17 stormwater contaminants: PAHs, Tributyltin; 2,3,7,8-TCDD (TEQ); Aldrin; Chlordanes; DDX; Mono-(3-carboxypropyl) phthalate (MCP); Ethyl benzene; Hexachlorobenzene and Pentachlorophenol. However, based on the site development and operational history, none of the contaminants on this list were expected to have been used or released at the site.

4.2 Stormwater Source Control Investigation

When stormwater presents as a potential pathway to mobilize contamination from the site to the river, these determinations generally rest upon demonstrating that site-related information provides sufficient support to make the following findings:

1. Existing and potential facility-related contaminant sources have been identified and characterized.
2. Contaminant sources were removed or are being controlled to the extent feasible.
3. Performance monitoring conducted after source control measures were implemented supports the conclusion that the measures are effective.
4. Adequate measures are in place to ensure source control and good stormwater management measures occur in the future.

4.2.1 Stormwater System Configuration

As shown on Figure 2, the site's building roof generates the majority of stormwater from the site. Roof stormflows are collected in three downspouts around the building. The eastern edge downspout discharges to a vegetated infiltration strip with underpiping connecting to the city conveyance line, which also accepts road sheet flows through the trench drain at the northeast building access door. Downspouts on the southwest and northwest sides of the building formerly discharged to pavement, but in 2019 were connected directly to underground laterals flowing to city pipes on each side of the building, which eventually converge (beyond the map extent to the west) prior to discharging to the river through city outfall 52. Finally, a 500 square foot storage area at the southwest corner of the building is partially covered by an awning and stormwater falling on this area sheet flows toward Bradford Avenue and infiltrates there.

4.2.2 Stormwater Pathway Investigation

The erodible soils sampling done by the City of Portland along the former flow path of roof discharges from the site (samples 20, 21 and 22) indicates that PCBs (846 ug/kg to 1,940 ug/kg) and copper (224 mg/kg to 541 mg/kg) are present in these erodible surface soils at levels exceeding Portland Harbor ROD Table 17 riverbank soil/sediment cleanup levels. Because site roof drainage was reconfigured to discharge directly to the piped conveyance system, exposure to these erodible soils is no longer possible and the stormwater pathway from the site to the river is incomplete. PCBs and copper in samples from the railroad right-of-way/park areas (samples 15, 16, 17 and 23) also exceeded Table 17 riverbank soil/sediment cleanup levels. Photos from a 2012 City of Portland Industrial Source Control Memo document extensive ponding in the parking lot adjacent to the site and along the railroad right-of-way during wet weather. However, this stormwater infiltrated into the railroad right-of-way and park areas, so the stormwater pathway from these non-site-related areas is also incomplete.

4.2.3 Stormwater Source Control Measures

The sheet metal roofing is painted with enamel to prevent leaching of metals into stormwater. All roof discharges were directed to underground conveyances in 2019 to avoid any contact with erodible soil contamination. This resulted in elimination of the potential for site stormwater to mobilize contaminated erodible soils to the river. In addition, ponding at the Cathedral Park parking lot catch basin is anticipated to lessen, which will further reduce the limited potential for intermittent, seasonal mobilization of contaminants infiltrating into park soils.

4.2.4 Stormwater Lines of Evidence Evaluation

In alignment with Section 5.3 of the JSCS, which describes appropriate approaches for screening of direct discharges, a weight-of-evidence evaluation was undertaken in consideration of the following site-specific factors:

1. Identification and characterization of potential sources of contaminants – Existing and potential facility-related stormwater contaminant sources were identified. Current site operations and waste storage are performed under cover, such that no industrial activities are exposed to stormwater and the metal roof is coated to prevent leaching of metals into stormwater. Limited investigation of the interior of the building resulted in no detections of PCB aroclors. Erodible soils, formerly in contact with site stormwater, collected at the western edges of the site were found to contain elevated concentrations of PCBs and copper.
2. Magnitude of stormwater, and stormwater solids exceedances at each sampling point and proximity of sampling point to the river – Sampling results from erodible soils that were previously exposed to site stormwater and exceeded EPA's 2017 Portland Harbor Record of Decision Table 17 cleanup levels for riverbank soil/sediment were compared to charts from DEQ's Guidance in *Appendix E: Tools for Evaluating Stormwater Data*. This tool was created by using contaminant concentration data from many of the stormwater and stormwater solids samples collected at Portland Harbor-area heavy industrial sites. This data was used to create a series of charts that plot rank-order samples against contaminant concentrations and are used to identify contaminant concentrations in samples that are atypically elevated. Concentrations falling within the upper/steeper portion of the curve are an indication that uncontrolled contaminant sources may be

present at the site and that additional evaluation or source control measures may be needed. Concentrations that fall on the lower/flatter portion of the curve suggest that stormwater is not being unusually impacted by contaminants at the site, and while concentrations may exceed the PH CULs, they are within the range found in stormwater or solids from active industrial sites in Portland Harbor. All the erodible soil samples collected by the City of Portland exceeded the river bank soil/sediment CUL for PCBs and three samples nominally exceeded the river bank/sediment CUL for copper. All of the PCBs concentrations were above the knee of the rank-order curve and none of the copper concentrations exceeded the flat portion of the rank-order curve. However, since 2019, stormwater from the site no longer contacts these soil locations, so any potential for mobilization of PCBs or other contaminants to the river via stormwater from the site was eliminated.

3. Regional background soil concentrations of naturally occurring chemicals for evaluating stormwater solids – This line of evidence is not applicable to this evaluation.
4. Presence of bioaccumulative chemicals – PCBs were measured in erodible soils at levels above CULs and the steep portion of the rank order curves. However, since 2019, stormwater from the site no longer contacts these soil locations, so any potential for mobilization of PCBs to the river via stormwater was eliminated.
5. Site hydrology including site conditions, size of drainage and location and estimated size of discharge – A minimal amount of stormwater is generated at the site from an enamel-coated roof less than ½ an acre in size (approximately 20,000 square feet), which is discharged directly to the city conveyance system near its terminus at outfall 52.
6. Stormwater system design and management – Roof runoff is protected from leaching metals by the enamel roof coating, a portion of roof discharge infiltrates through vegetation and soil to eventually comeingle with the remainder of roof discharge and other discharges collected in city conveyance pipes to city outfall 52.
7. Estimate of potential contaminant loading to the river – Because stormwater discharged from the site is of minimal volume and not exposed to contamination, potential contaminant loads discharged are negligible.

In summary, these lines of evidence indicate that the stormwater pathway from the site to Portland Harbor is controlled and does not pose a threat to sediment recontamination or risk to in-water receptors, so no additional controls are warranted.

4.3 Source Control Decision

Based on review of the file, DEQ concludes that this upland site is adequately characterized. Stormwater from site roofs discharges directly to conveyance pipes to the river, so is not exposed to industrial activities or historical contamination. Therefore, the site is not a significant ongoing source of contamination to the Willamette River.

Existing PCB contamination at levels that exceed DEQ's soil occupational risk-based concentrations remains adjacent to the site and park users may be exposed to this contamination. Soil remediation is likely warranted, as can be negotiated with the responsible parties, however, this contamination does not have a complete stormwater pathway to the river.

5.0 References

City of Portland Bureau of Environmental Services. *Basin 52 Source Investigation Report*. May, 2012.

City of Portland Bureau of Environmental Services. *Request for Site Assessment of Peninsula Iron Works Property at 6618 N. Alta Avenue*. December 13, 2011.

City of Portland Bureau of Environmental Services. *Industrial Source Control Memo*. March 16, 2012.

Creekside Environmental Consulting Services, LLC and EvrenNorthwest. *Source Control Evaluation Report*. April 14, 2020.

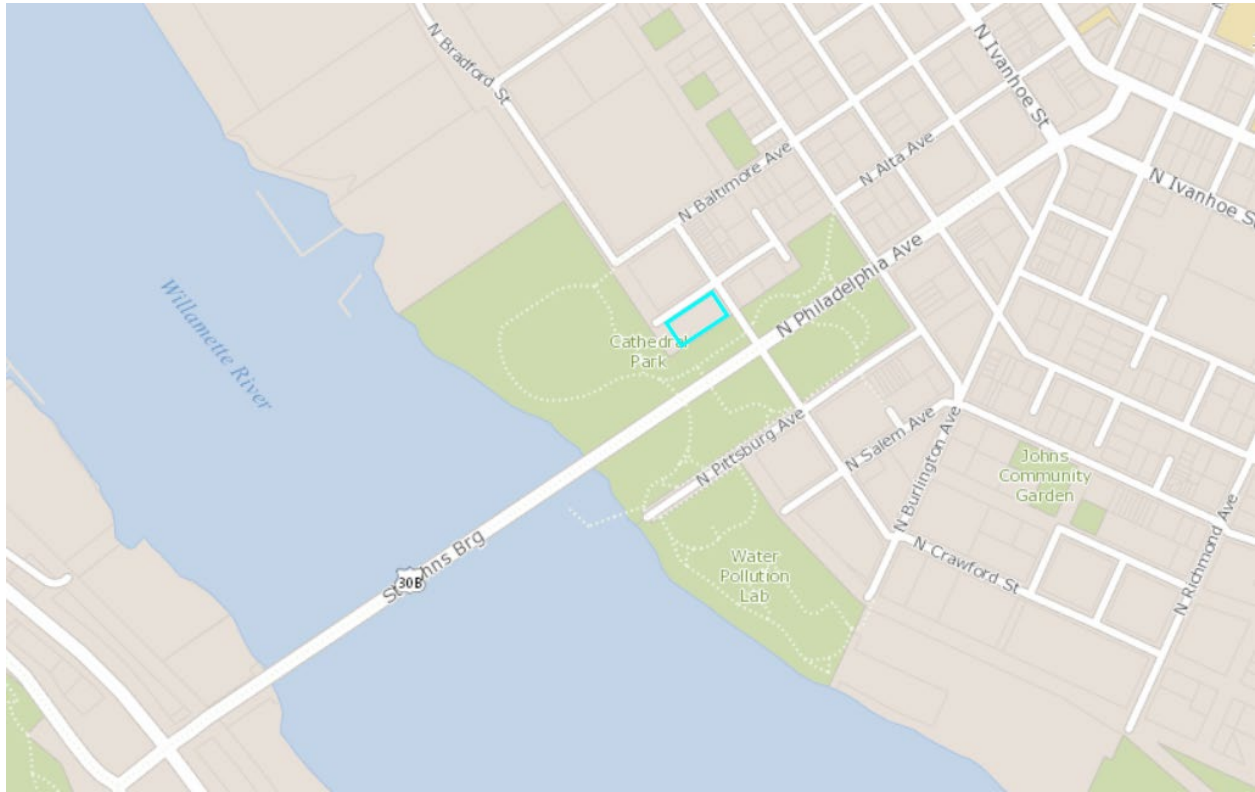
Creekside Environmental Consulting Services, LLC. *Summary of Findings- Revision 1.0*. November, 2012b.

Department of Environmental Quality. *Guidance for Evaluating the Stormwater Pathway at Upland Sites*. 2010. <http://www.deq.state.or.us/lq/cu/stmwtrguidance.htm>.

Department of Environmental Quality. Email on Qualitative Risk Analysis of PCBs in Cathedral Park. August 6, 2012.

Figure 1: Site Location

Peninsula Iron Works - 6618 North Alta Avenue, Portland Oregon



SOURCE: https://www.portlandmaps.com/detail/property/6618-N-ALTA-AVE/R191830_did/#

DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
C. ROSENTHAL 03/25/2020	T. BENNETT 01/23/2020	L. GREEN 05/19/2020	351-12023(v01)

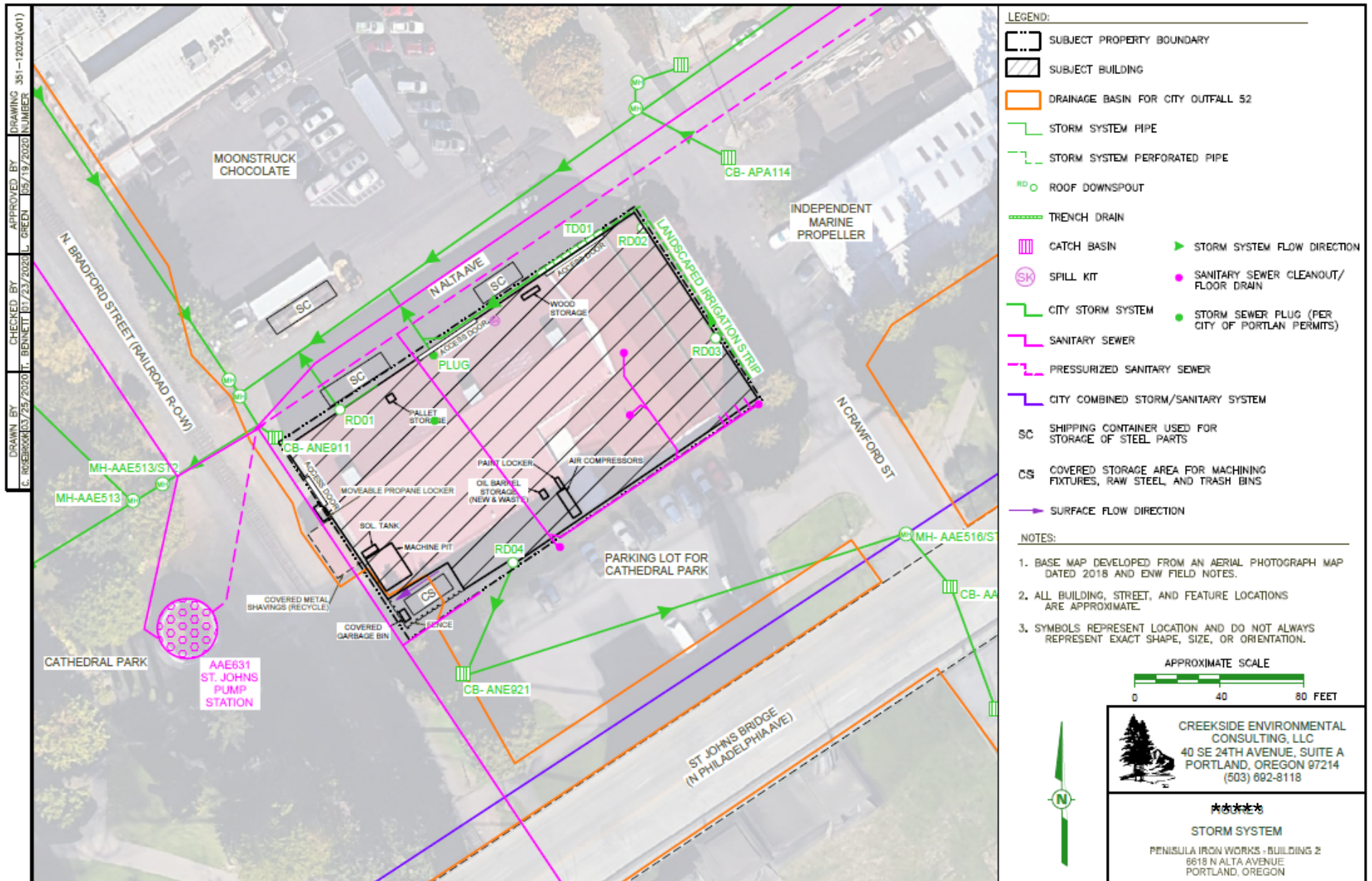


Figure 3: Sample Locations

