Port of Longview
TPH Site

Interim Action Completion Report

Prepared for

Port of Longview
PO Box 1258
Longview, Washington 98632

September 2019

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LIMITATIONS

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List of Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
AO	Agreed Order
ARAR	Applicable or relevant and appropriate requirement
AST	Aboveground storage tank
BMP	Best management practice
Ecology	Washington State Department of Ecology
FS	Feasibility study
NRC	NRC Environmental Services
NWP	Nationwide Permit
Port	Port of Longview
RI	Remedial investigation
SEPA	State Environmental Policy Act
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
WAC	Washington Administrative Code
Work Plan	Interim Action Work Plan

1.0 Introduction

This Interim Action Completion Report documents how the abandoned fuel pipelines (the pipes) lying exposed under Berths 1 and 2 at the Port of Longview (Port) were removed. Removal of the pipes occurred as an Interim Action under the terms of Agreed Order (AO) No. DE 15907 with the Washington State Department of Ecology (Ecology). The AO obligated the Port to remove the pipes, as well as to conduct a remedial investigation (RI) and feasibility study (FS) of soil and groundwater petroleum contamination at the uplands areas of the Port informally referred to as the "TPH Site." The removal of the pipes was done as an Interim Action necessitated by the deteriorating condition of the pipes. The RI is underway but will not be completed for several years. The following paragraphs describe the history of the pipes.

In the 1920s and 1930s, Standard Oil Company and Longview Fibre Company installed the pipes to transfer petroleum products from ships docked at Berths 1 and 2 (Figure 1.1). The pipes were above ground as they ran under the berths and then subsurface as they entered the uplands through a bulkhead, then ran to a Standard Oil Company bulk tank farm (currently owned by Wilcox & Flegel Oil Company). In 1986, pipelines were conveyed to the Port under the terms of a Termination of License Agreement. In accordance with the Termination of License Agreement, Chevron Environmental Management Company reported that it had removed hydrocarbon liquids from the Standard Oil Company pipelines (Standard Pipelines), cleaned the Standard Pipelines between the bulk tank farm and their terminus at the shipping berths, and flushed the Standard Pipelines with water and air. A former 80,000-barrel aboveground storage tank (AST) once owned by Longview Fibre Company, Crown Zellerbach, and the Port was removed in 1995.

The Standard Pipelines transferred gasoline, diesel, stove oil, Bunker C, and PS 300 fuel (equivalent to #5 fuel oil) from ships docked at the berths. Bunker C fuel- and petroleum-contaminated ballast water was sent to the AST via the Longview Fibre Company pipeline.

In March 2016, small amounts of petroleum product were released from leaks in the abandoned pipes under the berths to the Columbia River through two separate corroded areas. After consultation with Ecology, it was determined that the final action to prevent future releases should be conducted under Ecology's authority via an Interim Action conducted under an AO with the Toxics Cleanup Program.

As described in Washington Administrative Code (WAC) 173-340-430, an interim action is "a remedial action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance" and/or "corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed."

Section 6.0 of the Interim Action Work Plan (Work Plan), along with Sheet 2 of Drawing G1, was updated and submitted to Ecology on April 2, 2019. In summary, the Work Plan update included the following:

1. Making one additional cut in the deck at the west end to accommodate the pipes running north/south at Berth 1. These pipes had more product in them and had the potential to be more difficult to manage under the proposed process of bringing them to the one central hole.
2. Using the stairwell at the project's east end, at the southeast corner of Transit Shed 2, to bring up the pipe at that end, which allowed better management of Line E.
3. Bringing the pipes that terminate at the face of the dock at Berth 1 up over the bull rail via crane and in a contained box (lined box with absorbent materials) versus cutting the elbows and bringing up through the dock.
4. Cutting the tops of the pipes with a "nibbler" tool versus tapping low points, in order to have maximum exposure to vacuum out the pipes.
5. Line E's product cannot be vacuumed out; therefore, cut the top of the pipe and scoop the product into buckets within a containment made under the berth. Seal buckets before they are brought up to the deck and placed into a drop box.

2.0 2016 Spill Response

On February 17, 2016, Port personnel noticed a small petroleum sheen on the water in front of Berth 1. The cause of the sheen was found to be drippage from a corroded section of a former pipeline underneath the berth. The material that was dripping and causing the sheen appeared to be a heavy fuel oil, such as Bunker C. Two booms (inner and outer) were deployed to contain the sheen, and oil adsorbent pads were used to collect any oil within the booms. A bucket was placed under the pipe to control the drippage followed by cutting and plugging the leaking area. The National Response Center, U.S. Coast Guard (USCG), and Ecology were notified within hours of discovery as well as NRC Environmental Services (NRC), the Port's spill response contractor. The USCG responded by inspecting the situation and requesting the Port provide a response plan. The Port developed an initial response plan to inspect the booms and check on the pipe and plug daily and to eventually remove the pipes. No further drips were noted after the hole was plugged. Therefore, on February 25, 2016, the outer perimeter, yellow, hard boom with apron boom was removed, leaving the soft, oil-only adsorbent inner boom around the water directly under the area of pipe leakage.

On March 4, 2016, a second leak was discovered close to the location of the first leak but from another pipeline underneath the berths. It is suspected that the initial activity in responding to the leak caused a shift in the adjacent pipelines, resulting in the second leak. The Port responded by redeploying the hard boom on the outer perimeter and using oil-only adsorbent booms and adsorbent pads, as was done before. Due to the advanced corrosion on that section of pipe, it was not possible to cut and plug the leak. Therefore, the Port had to evacuate the product in that section of pipe and place a bucket with pads under the pipe to contain any remaining drippage. The collected product appeared to be a lighter petroleum product such as kerosene.

The hard boom, sorbent boom, and suspended buckets continued to be deployed and monitored. In April 2017, with no further leaking being observed since March 4, 2016, the hard boom was removed, leaving only the sorbent boom and buckets in place. Port staff inspected the pipes weekly for additional leaks up until the beginning of the Interim Action.

3.0 Pipe Layout and Contents

Drawing G1 is a plan view prepared by the Port showing the location of the pipelines under Berths 1 and 2 prior to removal. This drawing also contains details as to the number, size, and length of each pipeline, including the locations of the two leaks. In general, there are five distinct pipelines, labeled as Lines A, B, C, D, and E. Lines A through D ran together and served the Standard Oil Company bulk plant, and Line E served the Longview Fibre Company AST.

A sample of the leaking material from the pipe that initially leaked (noted as Pipeline C) was collected on February 18, 2017. A sample of the second leaking pipe, Line B, was collected on March 28, 2017. Samples of product in Pipelines D and E were collected in late March 2017 after small holes were drilled in each pipe at low points. An attempt was made at sampling Line A, but this pipeline was found to be empty at a low point in the line.

Additional sampling was conducted in March 2019, prior to the initiation of the pipe removal. This additional sampling was done in order to provide updated analytical information for the disposition of the residual petroleum product removed from the pipes. One representative sample of each of the five pipelines was collected and analyzed.

In total, nine samples of product were collected from the five pipelines over two events. Samples were collected and submitted to either ALS Environmental or Specialty Analytical. Samples were tested for product identification, presence of chloride, volatile and semivolatile organic compounds, polychlorinated biphenyls, and metals. Results confirm that the residual products in the pipes were consistent with the historical record of use (i.e., diesel and Bunker C–type fuels). Laboratory results from the testing of the samples are included in Appendix A. Field notes by Port personnel as to how each sample was collected are provided in Appendix B. Table 3.1 provides a summary of the results of the initial set of analytical results.

4.0 Project Team

The project was performed by the following parties:

- **Port.** The Port had overall responsibility for the project, including planning and preparing for the work to be conducted, the physical removal of the pipes, the rebuilding of the berth decking, in-water boom deployment and maintenance, and coordination with a local metal recycler for recycling of the majority of the pipe sections. All work was conducted by Port staff and Port Trade Union Labor, except for outside contractors used for testing pipes for gases/vapors, spill response, vacuuming of pipe contents, and disposal of wastes.
- **NRC.** NRC was responsible for development of the Health and Safety Plan and assisted in project planning. They were also contracted for spill response if needed. During the removal of the pipes, NRC provided a vacuum truck to evacuate liquids from the pipes and coordinated hauling the waste liquids, landfilling Line E sections, disposing of the buckets of heavy oils removed from Line E, and miscellaneous waste materials (absorbent pads, plastic wrap, etc.). Waste disposal manifests are in Appendix C.
- **Sound Testing, Inc.** Sound Testing supplied the marine chemist that tested the concentration of oxygen, carbon dioxide, and the explosive limit of air within the pipes prior to pipe removal. The marine chemist field notes and recommendations are in Appendix D.
- **Floyd|Snider.** Floyd|Snider provided general assistance in project planning and was responsible for preparing the project work plan and project completion reporting.

5.0 Permitting

The pipeline removal was performed under the Model Toxics Control Act (WAC 173-340-710), which provides an exemption for those procedural requirements of all applicable or relevant and appropriate requirements (ARARs) related to the onsite remedial actions. This exemption waives the responsibility to obtain such approvals but does not provide relief of the need to perform the work in a manner that satisfies the substantive requirements of those ARARs. The best management practices (BMPs) that were implemented during demolition met the required ARARs.

5.1 STATE ENVIRONMENTAL POLICY ACT REQUIREMENTS

Ecology acted as the State Environmental Policy Act (SEPA) lead official role for the environmental review of the pipeline demolition. A SEPA checklist was prepared and the SEPA comment period was combined with the 30-day comment period of the Work Plan. One public comment was received from the Confederated Tribes and Bands of the Yakama Nation offering additional language to add to the Work Plan. Ecology determined not to include recommended language.

5.2 APPLICABLE FEDERAL, STATE, AND LOCAL PERMIT REQUIREMENTS

This project was conducted within the regulatory purview of the U.S. Army Corps of Engineers (USACE) under the Nationwide Permit (NWP) 38. The NWP 38 provides federal authorization for specific activities required to clean up hazardous and toxic waste, and such an authorization is required for projects within waters of the state. However, while no work was conducted in-water or below the ordinary high-water mark, the pipeline removal was consistent with the activities authorized under NWP 38, and the Port acquired this approval prior to commencement of work.

The Port operates under an Industrial Stormwater General Permit (WAR001242) and an Industrial Wastewater Permit (ST6081). All work was performed in conformance with the Port's current permit requirements.

The Washington State Shoreline Management Act (90.58 RCW and WAC 173-27) and the City of Longview's Shoreline Master Program (LMC 17.60) did not require application for a substantial development permit or an exemption for this project. This project was not considered development and therefore was not within the jurisdiction of said regulations.

6.0 Pipe Removal Summary

The interim action completely removed the exposed pipes under Berths 1 and 2 (refer to Sheet 2 of Drawing G1). The demolition of the pipe occurred over a 7-week period (not including repaving of the berth deck) in sequential steps as described below:

1. Prior to any start of work, proper BMPs were put in place upland and in-water. This included stormwater controls on the berth decking as well as placement of booms in the water. Additionally, along the catwalks, extra spill response stashes were placed for immediate response, and a store of backup materials were housed in Transit Shed 1.
2. Under-dock scaffolding was constructed to access portions of the pipes that were not accessible by existing catwalks, which were utilized as much as possible. Proper BMPs were employed during construction and removal of the scaffolding. No treated wood was used in construction of the scaffolding.
3. Two sections of the concrete dock decking between Berths 1 and 2 (approximately 14 feet by 27 feet) and Beth 1 (approximately 14 feet by 12.5 feet) were cut to allow pipe section removal. The decking was cut via a concrete saw for the pavement and a chainsaw for the creosote-treated timber decking underneath. Demolition materials were placed in a drop box on the upland side of the dock behind the bulkhead line and were hauled off and disposed of at an appropriate facility. Storage of drop boxes within Transit Shed 1 or 2 was not necessary.
4. Decking holes were edged with eco-blocks placed on tubing to ensure that stormwater would not enter the cut areas in the dock. Further, covers were constructed to be placed over the eco-blocks when work was not being performed.
5. Prior to removal of the pipes, a marine chemist tested the atmosphere inside each pipe to ensure that there was no potential for ignition of flammable gases/vapors.
6. Prior to removal of the pipes, oil-absorbent mats, and in some areas (pipe elbows, over water areas, and Line E) linear drip pans that were lined with plastic and then oil-absorbent mats, were placed under the pipe sections.
7. The linear (or straight) pipes were removed first beginning at the center cut in the decking and then moving downstream to the end of Berth 1. The Port crew then worked upstream from the center cut removing all liner pipe to the upstream end of Berth 2.
8. The Port crew then removed the pipe bends from the bulkhead to the berth front at Berth 1. Some sections of pipe located at the face of the dock (Berth 1) were lifted by crane within a contained box (lined box with absorbent materials within the box) up and over the bull rail. The in-water boom was relocated to accommodate this activity to ensure full spill containment. All other pipe bends were lifted through the second cut in the decking at Berth 1. The Port crew then removed the bends at Berth 2, bringing pipe up through the center hole or up the stairwell at Transit Shed 2.

9. Line E was the final pipe to be removed and was hauled up through the stairwell at Transit Shed 2, which was adjacent to the pipe.
10. Each pipe was cut open via two parallel cuts along its length using a nibbler tool that exposed the pipe contents. A vacuum truck followed the cuts and vacuumed out the contents. However, along Line E, which was full of viscous Bunker C fuel, the fuel was removed by hand scooping and the contents placed in buckets.
11. All pipes were hand wiped with oil-absorbent pads to ensure that no liquid was left within the pipe. Those pads were collected and disposed of by NRC. In some cases, the pads were left within the pipe. All pipe openings were taped closed to ensure that no moisture or water would get into the pipes once cleaned.
12. The pipe ends were then cut and capped, and the entire pipe section was wrapped in plastic and taped.
13. Each section of pipe was put on a trolley system that was constructed under the berth for this project or hand-moved along the catwalk under the berth to the openings in the dock decking or through the stairwell by Transit Shed 2, where they were lifted out via crane and placed into drop boxes for recycling or disposal.

    Although the drop boxes were lined to eliminate potential leaks, as an added precaution, absorbents were placed on the bottom of the lined drop boxes (refer to Sheet 3 of Drawing G1). All pipes but Line E were recycled. Line E had viscous product residual and was lifted to a separate drop box and landfilled.
14. Once pipes were removed, scaffolding under the deck was removed, the deck replaced, and BMPs, including in-water boom, were removed.

Appendix B contains copies of the weekly field reports that were generated and reported to Ecology. Refer to these field reports for details of the work performed.

7.0 Best Management Practices

The Port utilized the following BMPs during the removal of the pipes:

1. The Port complied with the general, regional, and specific conditions of USACE-issued NWP No. 38 for "cleanup of hazardous and toxic waste."
2. Equipment used for this project was not operated in-water.
3. Equipment included a Port crane for lifting the pipe from under the berth, vacuum truck, spill response boom and equipment, and hand-held saws and tools. The crane was located upland, away from the water and catch basins, and it was parked within the containment area at Berth 1. When not being used, all hand tools were stored in a cargo container purchased and refurbished as a work room for the Port crew. Spill response equipment (i.e., boom) was left in place until construction was complete. A spill response trailer was stationed on the downstream side of Transit Shed 1.
4. Equipment was checked daily for leaks and before using the equipment near the water. Any required repairs were completed at the Port's mechanic shop or maintenance yard.
5. Daily cleanup of work area, including hand vacuuming the work area on the catwalk.
6. Preventative spill measures included the following:
   A. An appropriate boom was deployed within the area of decking and pipe removal prior to and during removal actions.
   B. Appropriate spill materials were available for use within the area of construction.
   C. NRC was on site for pipe disposal management and spill response services.
   D. Sorbent pads were placed below pipelines to prevent spills from reaching the river. Additionally, spill trays and plastic liners were place under the absorbent pads in elbow areas and pipes over water.
   E. Lined (i.e., adsorbent placed on plastic) drop boxes were covered in place to prevent stormwater encountering residual contaminants.
7. Construction/Deconstruction: Prevent project contaminants, such as petroleum products, hydraulic fluid, concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering or leaching into waters of the state by:
   A. Tarps or other BMPS were used to prevent wood, sawdust, trimmings, drill shavings, concrete, and other debris from contacting the bed or waters of the state.
   B. Any liquid materials were evacuated prior to under-dock removal via a vacuum truck from the dock.
   C. The fuel pipe sections were wrapped with plastic wrap during removal.
   D. Hand cleaning of vacuumed pipe with oil-absorbent pads, and where necessary, packed pipe with absorbent pads.

E. End caps such as plumber's plugs, balloons, or other such materials were installed to the fuel pipeline sections that required additional protection during removal to ensure that no hazardous liquids enter the water.

F. All drop boxes were covered at the end of the workday.

8. Prior to pipe removal, approximately 10,000 gallons of stormwater was collected and processed through the effluent system before discharging to outfall 004. The stormwater had no contact with petroleum, spills, or any other hazardous material.

The end result of the application of these BMPs was that no spillage of oil to the Columbia River occurred during execution of the project. Two minor leaks occurred due to the severely deteriorated condition of the pipes in places. The leaks were fully contained within the adsorbent mat placed under the pipes. However, as a precautionary measure, an absorbent boom was deployed under this section of pipe.

8.0 Health and Safety and Environmental Controls

Health and safety were maintained throughout the project in accordance with a Health and Safety Plan prepared by NRC. In addition, the atmosphere inside each of the pipes was checked for explosive gases by a certified marine chemist (Sound Testing, Inc.) prior to cutting the pipes open with the nibbler tool. No hazardous or explosive atmospheres were detected.

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Table

Table 3.1
Summary of Pipe Analytical Results

	Sample ID	Pipe C	Pipe B	Pipe D	Pipe E
Analyte	**Units**				
General Chemistry					
Ignitability (Flash Point)	°F	>230	>140	>140	>140
Chloride	mg/kg	50 Ui	23	18	45
Hydrocarbon Fuel Fingerprint by 8015M					
Automatic Trans Fluid	mg/kg		5,000 U	10,000 U	10,000 U
Hydraulic Oil	mg/kg		5,000 U	10,000 U	10,000 U
Gasoline	mg/kg		2,000 U	4,000 U	4,000 U
Mineral Spirits	mg/kg		2,000 U	4,000 U	4,000 U
Kerosene	mg/kg		5,000 U	10,000 U	10,000 U
Diesel	mg/kg		>99%	538,000	229,000 K
Oil	mg/kg		10,000 U, A3	295,000 A2	292,000 A2
Total Petroleum Hydrocarbon by 8015C					
Diesel-Range Organic	mg/kg	400,000 DY			
Residual-Range Organic	mg/kg	200,000 DY			
Total Metals by 6020A & 7471B					
Arsenic	mg/kg	1.8 U	0.471 U	0.485 U	0.533
Barium	mg/kg	0.4 U	0.471 U	0.485 U	0.532 U
Cadmium	mg/kg	0.09 U	0.0943 U	0.0971 U	0.106 U
Chromium	mg/kg	0.4 U	0.943 U	0.971 U	1.06 U
Lead	mg/kg	0.9 U	0.236 U	0.243 U	2.94
Mercury	mg/kg	0.02 U	0.0159 U	0.0143 U	0.0168 U
Nickel	mg/kg	NA	0.471 U	51.3	38.3
Selenium	mg/kg	3	0.943 U	0.971 U	1.06 U
Silver	mg/kg	0.4 U	0.0943 U	0.0971 U	0.106 U
Zinc	mg/kg	1.4	4.71 U	4.85 U	5.32 U
Semivolatile Organics (Detected Analytes Only) by 8270D					
1-Methylnaphthalene	mg/kg		NA	2,550	823
2-Methylnaphthalene	mg/kg	3,800 D	NA	3,440	1,040
Acenaphthene	mg/kg	180 D	NA	199	113
Acenaphthylene	mg/kg	67 D	NA	100 UQ	100 UQ
Anthracene	mg/kg	97 D	NA	100 UQ	100 UQ
Benz(a)anthracene	mg/kg	620 D	NA	458	100 UQ
Benzo(a)pyrene	mg/kg	270 D	NA	237	100 UQ
Benzo(b)fluoranthene	mg/kg	170 DX	NA	159	100 UQ

Table 3.1
Summary of Pipe Analytical Results

	Sample ID	Pipe C	Pipe B	Pipe D	Pipe E
Analyte	**Units**				
Semivolatile Organics (Detected Analytes Only) by 8270D (cont.)					
Benzo(g,h,i)perylene	mg/kg	73 D	NA	100 UQ	100 UQ
Chrysene	mg/kg	980 D	NA	890	100 UQ
Dibenzofuran	mg/kg	140 D	NA	100 UQ	100 UQ
Fluoranthene	mg/kg	62 D	NA	100 UQ	100 UQ
Fluorene	mg/kg	320 D	NA	294	135
Naphthalene	mg/kg	1,100 D	NA	1,270	311
N-Nitrosodiphenylamine	mg/kg	380 D*	NA	100 UQ	100 UQ
Phenanthrene	mg/kg	760 D	NA	714	577
Pyrene	mg/kg	490 D	NA	478	229
Volatile Organics (Detected Analytes Only) by 8260B					
1,2,4-Trimethylbenzene	mg/kg	230	406	516	168
1,3,5-Trimethylbenzene	mg/kg	49	90.3	125	52.9
4-Isopropyltoluene	mg/kg	20 U	32.5	19.9	22
Ethylbenzene	mg/kg	15	22.4	48.2	25.7
Isopropylbenzene	mg/kg	20 U	14.8	44.5	10.4
m,p-Xylene	mg/kg	77	102	190	107
Naphthalene	mg/kg	780 *	635	1140	366
n-Butylbenzene	mg/kg	75	81.8	62.4	17.2
n-Propylbenzene	mg/kg	20 U	58.4	55.3	22.7
o-Xylene	mg/kg	38	59.5	97.9	54.2
sec-Butylbenzene	mg/kg	20 U	31	20.4	10
Toluene	mg/kg	27	10 U	51.4	35.9
Polychlorinated Biphenyls (PCBs) by 8082A					
Aroclor 1016	mg/kg	0.98 Ui	1.3 U	1.1 U	1.04 U
Aroclor 1221	mg/kg	1.9 U	1.3 U	1.1 U	1.04 U
Aroclor 1232	mg/kg	0.93 U	1.3 U	1.1 U	1.04 U
Aroclor 1242	mg/kg	0.93 U	1.3 U	1.1 U	1.04 U
Aroclor 1248	mg/kg	0.93 U	1.3 U	1.1 U	1.04 U
Aroclor 1254	mg/kg	0.93 U	1.3 U	1.1 U	1.04 U
Aroclor 1260	mg/kg	0.93 U	1.3 U	1.1 U	1.04 U
Aroclor 1262	mg/kg	NA	1.3 U	1.1 U	1.04 U
Aroclor 1268	mg/kg	NA	1.3 U	1.1 U	1.04 U
PCBs (Total, Aroclor)	mg/kg	1.9 U	1.3 U	1.1 U	1.04 U

Table 3.1
Summary of Pipe Analytical Results

	Sample ID	Pipe C	Pipe B	Pipe D	Pipe E
Analyte	**Units**				
Total Halogens by 9076 or Total Chloride by 9056A					
Total Halogens or Chloride	mg/kg	50 Ui	23	18	45

Note:

Berth Oil Pipe B sample was analyzed by ALS Kelso, all other samples analyzed by Specialty Analytical.

Abbreviations

°F Degrees Fahrenheit
mg/kg Milligrams per kilogram
NA Not analyzed

Qualifiers:

* The continuing calibration verification was outside the control criterion.
A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
A3 The result was determined to be non-detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
D The reported result is from a dilution.
D* The reported result is from a dilution; the laboratory control sample exceeded advisory criterion for this analyte.
DX The reported result is from a dilution; a matrix interference prevented resolution of benzo(b)fluoranthene and benzo(k)fluoranthene, results for these compounds are reported as benzo(b)fluroranthene.
DY The reported result is from a dilution; the chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
K Diesel result is biased high due to amount of oil contained in the sample.
U The analyte was not detected at the given reporting limit.
Ui The analyte was not detected at the given reporting limit. The method reporting limit/method detection limit of limit of quantification/limit of detection is elevated due to a chromatographic interference.
UQ The analyte was not detected at the given reporting limit, which is elevated due to sample matrix.

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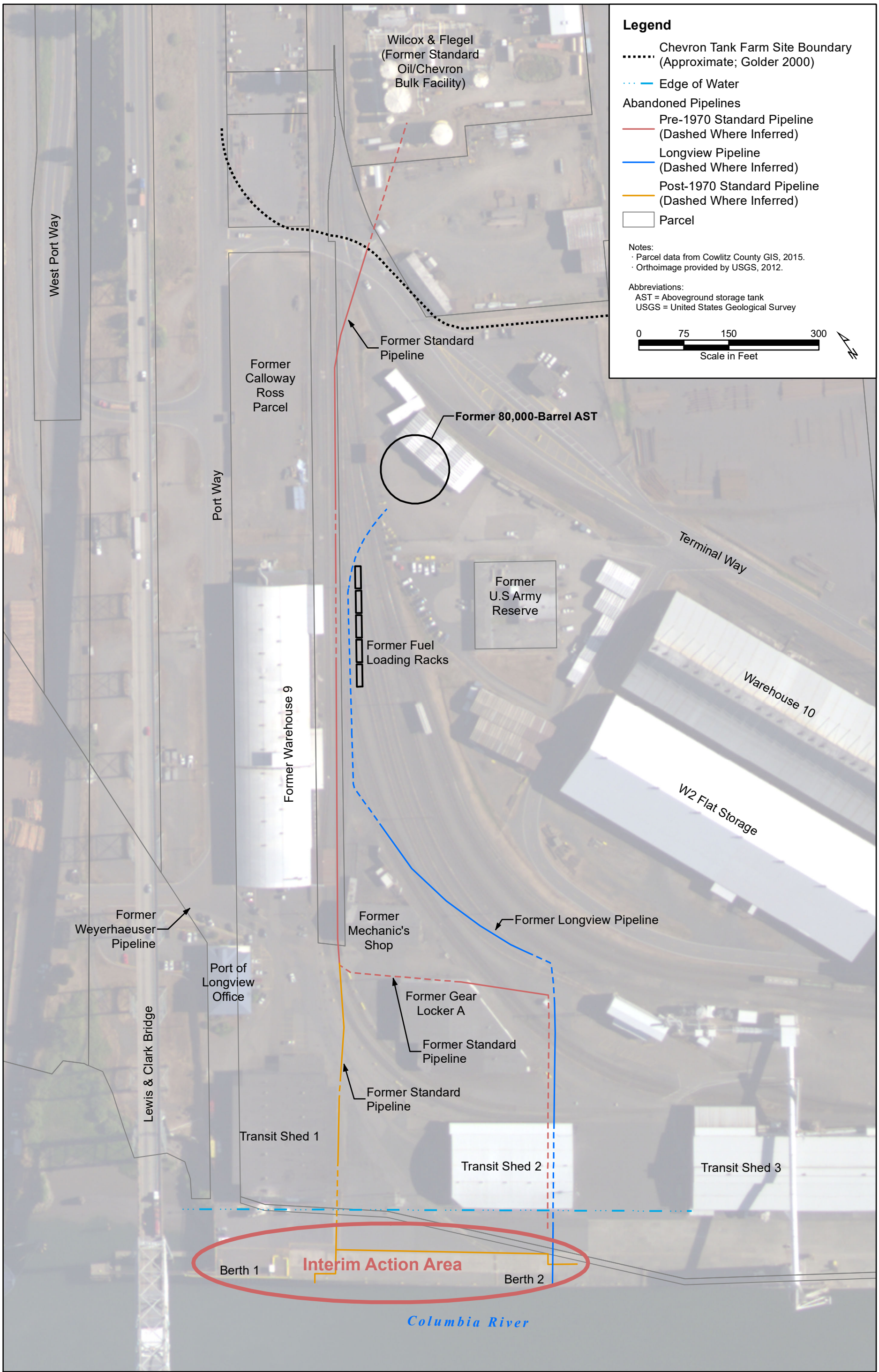
Figure



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Port of Longview TPH Site
Longview, Washington

Figure 1.1
Site Map

I:\GIS\Projects\POL-TPH\MXD\InterimActionWorkPlan\Figure 1 Site Map.mxd
6/4/2019

Port of Longview
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Interim Action Completion Report

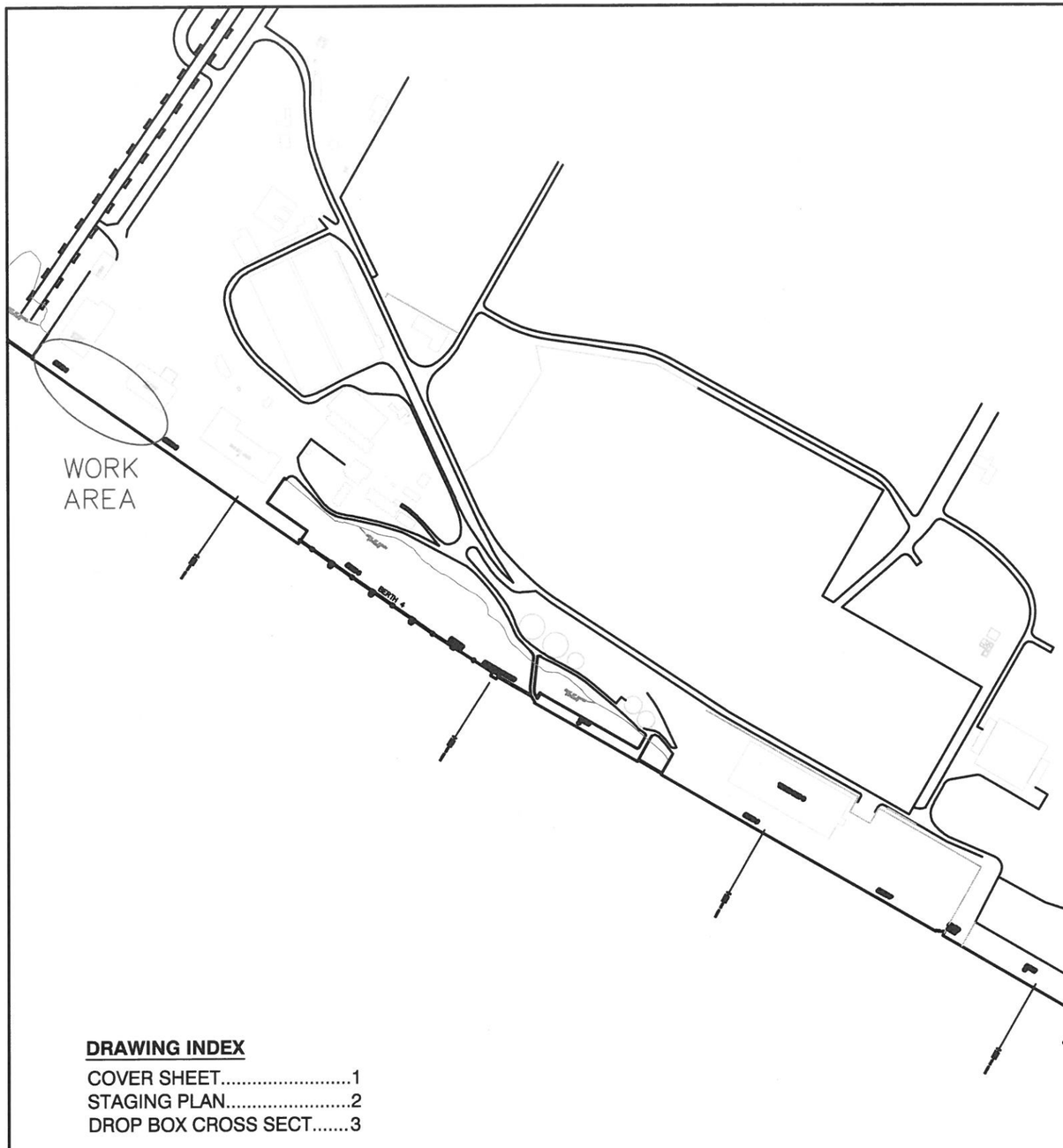
Drawing

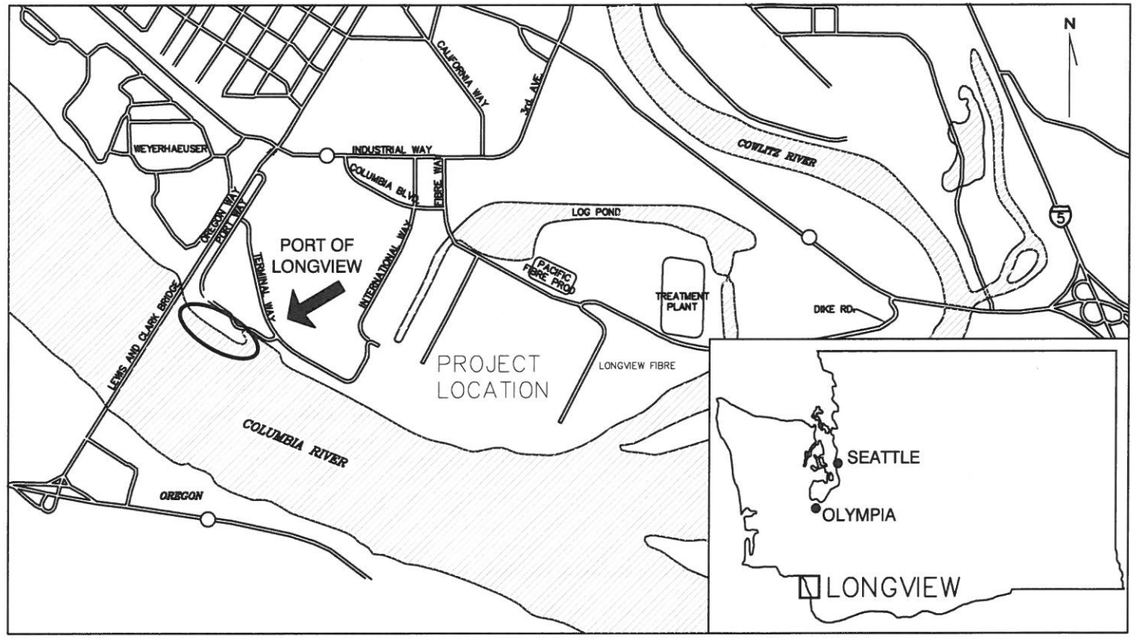
PORT OF LONGVIEW
• EST. 1921 •

WASHINGTON'S WORKING PORT

ABANDONED FUEL PIPELINE DEMOLITION
INTERIM ACTION WORK PLAN / SITE PLAN

SECTIONS 8 AND 9, TOWNSHIP 7N, RANGE 2W





VICINITY MAP

DRAWING INDEX

REV.	DATE	REVISIONS
--	--	--

SCALE: NTS
FILE NAME: B1-BUNKER C
PROJECT NO.: ---
DATE: 1 AUG 2018

0 1"

IF THIS SCALE IS NOT TO DIMENSION SHOWN, ADJUST ACCORDINGLY.

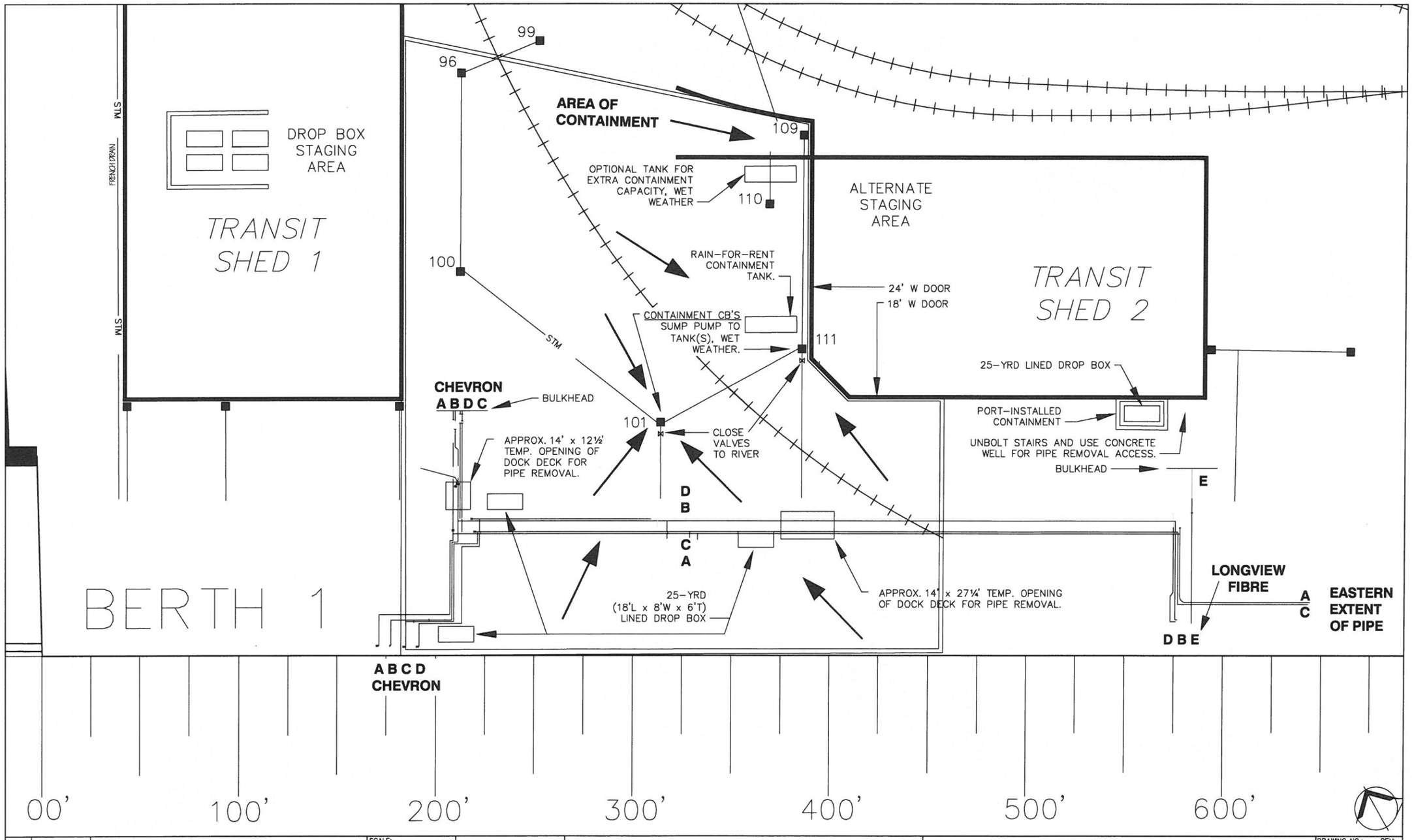
PORT OF LONGVIEW • EST. 1921 • | WASHINGTON'S WORKING PORT

BERTHS 1 AND 2 ABANDONED FUEL PIPE

DEMOLITION
INTERIM ACTION WORK PLAN / SITE PLAN

DRAWING NO.: G1 REV: --

SHEET NO.: 1 OF 3



REV.	DATE	REVISIONS
01	3/27/2019	ADDED: ACCESS THROUGH STAIRWELL @ SE CORNER
		OF TS2, A DROP BOX NEAR DOCK MARK 213', & A
		SECOND ACCESS HOLE THROUGH DOCK SE OF TS1.
		CHANGED PRIMARY STAGING AREA FROM TS2 TO TS1.

SCALE: 1" = 50'
FILE NAME: B1-BUNKER C
PROJECT NO.: ---
DATE: 23 AUG 2018

0 1" 2"
IF THIS SCALE IS NOT TO DIMENSION SHOWN, ADJUST ACCORDINGLY.

PORT OF LONGVIEW • EST. 1921 •

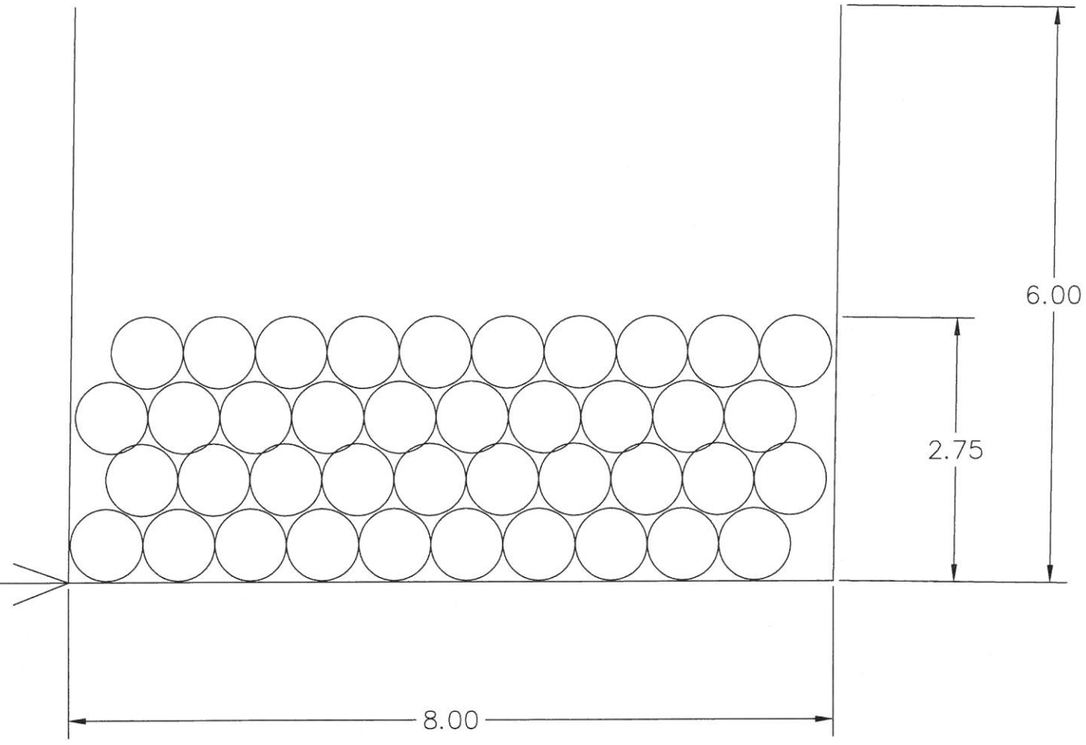
WASHINGTON'S WORKING PORT

BERTHS 1 AND 2 ABANDONED FUEL PIPE

DEMOLITION
INTERIM ACTION WORK PLAN / SITE PLAN

DRAWING NO.: G1 REV: --

SHEET NO.: 2 OF 3



PLASTIC LINER REQUIRED. ALSO, APPLY LAYER OF OIL–ABSORBENT SHEET ON BOTTOM TO PROTECT LINER AND COLLECT DRIPS. (OR EQUIVALENT, FLOOR DRI, SAND, ETC...)

REV.	DATE	REVISIONS
--	--	--

SCALE: NTS
FILE NAME: B1-BUNKER C
PROJECT NO.: ---
DATE: 1 AUG 2018

0 1" 2"
IF THIS SCALE IS NOT TO DIMENSION SHOWN, ADJUST ACCORDINGLY.

PORT OF LONGVIEW • EST. 1921 •

WASHINGTON'S WORKING PORT

BERTHS 1 AND 2 ABANDONED FUEL PIPE

DEMOLITION
DROP BOX CROSS SECTION

DRAWING NO.: G1 REV: --
SHEET NO.: 3 OF 3

Port of Longview
TPH Site

Interim Action Completion Report

Appendix A
Laboratory Reports

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

March 29, 2016

Analytical Report for Service Request No: K1601826

Sean Kelly
Longview, Port of
10 Port Way
Longview, WA 98632

RE: Berth 1 Pipe

Dear Sean,

Enclosed are the results of the sample(s) submitted to our laboratory February 18, 2016
For your reference, these analyses have been assigned our service request number **K1601826.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3356. You may also contact me via email at Kurt.Clarkson@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kurt Clarkson
Project Manager

ALS Environmental
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Table of Contents

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577- 7222 Fax (360)636- 1068
www.alsglobal.com

ALS ENVIRONMENTAL

Client:	Longview, Port of	**Service Request No.:**	K1601826
Project:	Berth 1 Pipe	**Date Received:**	02/18/16
Sample Matrix:	Oil		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier I data deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One oil sample was received for analysis at ALS Environmental on 02/18/16 The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored at room temperature upon receipt at the laboratory.

General Chemistry Parameters

Chloride by EPA Method 9056A Modified:
The detection limit was elevated in sample Berth Oil Pipe. The chromatogram indicated the presence of non-target background components. The sample MRL was elevated due to sample matrix. The matrix interference prevented adequate resolution of the target compound at the normal limit. The result was flagged to indicate the matrix interference.

No other anomalies associated with the analysis of this sample were observed.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Diesel Range Organics by EPA Method 8015

Elevated Detection Limits:
Sample required dilution due to the presence of elevated levels of target analyte. The reporting limits were adjusted to reflect the dilution.

.

Sample Notes and Discussion:
The sample responses appear to be due to weathered unknown fuel oil (Diesel or Bunker C, e.g.) and unknown lubricating oil.

No other anomalies associated with the analysis of this sample were observed.

Approved by Kurt Clawson

PCB Aroclors by EPA Method 8082

Second Source Exceptions:
The analysis of PCB Aroclors by EPA 8082 requires the use of dual column confirmation. When the Initial Calibration Verification (ICV) criteria are met for both columns, the lower of the two sample results is generally reported. The criteria were not met for Aroclor 1221 in CAL 14611. The data quality was not affected. No further corrective action was necessary.

Elevated Detection Limits:
The reporting limit is elevated for Aroclor 1016 in this sample. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compound at the reporting limit. The result is flagged to indicate the matrix interference.

No other anomalies associated with the analysis of this sample were observed.

Volatile Organic Compounds by EPA Method 8260

Initial Calibration Exceptions:
The ALS minimum relative response factor criterion for Trichloroethene, Bromodichloromethane, and cis-1,3-Dichloropropene was not met in Initial Calibration (ICAL) ID 14586. In accordance with ALS standard operating procedures, a Method Reporting Limit (MRL) check standard containing the analyte of concern was analyzed each day of analysis. The MRL check standard verified instrument sensitivity was adequate to detect the analyte at the MRL on the day of analysis. Because the sensitivity was shown to be adequate to detect the compound in question the data quality was not significantly affected. No further corrective action was appropriate.

Calibration Verification Exceptions:
The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) J:\MS18\0301F005.D: trans-1,3-Dichloropropene, 1,2-Dibromo-3-chloropropane, and Naphthalene. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The ALS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

The ALS minimum relative response factor criterion for Trichloroethene and Bromodichloromethane was not met in Continuing Calibration Verification (CCV) J:\MS18\0301F005.D. In accordance with ALS standard operating procedures, a Method Reporting Limit (MRL) check standard containing the analyte of concern was analyzed each day of analysis. The MRL check standard verified instrument sensitivity was adequate to detect the analyte at the MRL on the day of analysis. Because the sensitivity was shown to be adequate to detect the compound in question the data quality was not significantly affected. No further corrective action was appropriate.

Elevated Detection Limits:
Sample Berth Oil Pipe required dilution due to oil matrix. The reporting limits were adjusted to reflect the dilution.

No other anomalies associated with the analysis of this sample were observed.

Semivolatile Organic Compounds by EPA Method 8270

Second Source Exceptions:
The upper control criterion was exceeded for the following analytes in the Initial Calibration Verification (ICV) for calibration CAL14647: Benzidine. The field sample analyzed in this sequence did not contain the analyte in question. Since the apparent problem equates to a potential high bias, the data quality is not affected. No further corrective action was required.

Approved by 

Calibration Verification Exceptions:
The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS07\0322F002.D: Aniline, 4-Nitroaniline and Benzidine. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The ALS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

Lab Control Sample Exceptions:
The advisory criterion was exceeded for N-Nitrosodimethylamine, Phenol, Bis(2-chloroisopropyl) Ether, Hexachlorocyclopentadiene, N-Nitrosodiphenylamine and Pentachlorophenol in Laboratory Control Sample (LCS) KWG1601819-3. As per the ALS/Kelso Standard Operating Procedure (SOP) for this method, these compounds are not included in the subset of analytes used to control the analysis. The recovery information reported for these analytes is for advisory purposes only (i.e. to provide additional detail related to the performance of each individual compound). No further corrective action was required.

The advisory criterion was exceeded for Bis(2-chloroisopropyl) Ether in Duplicate Laboratory Control Sample (DLCS) KWG1601819-4. As per the ALS/Kelso Standard Operating Procedure (SOP) for this method, this compound is not included in the subset of analytes used to control the analysis. The recovery information reported for this analyte is for advisory purposes only (i.e. to provide additional detail related to the performance of each individual compound). No further corrective action was required.

Elevated Detection Limits:
The sample Berth Oil Pipe required a dilution due to the presence of elevated levels of target and non-target analytes. The reporting limits were adjusted to reflect the dilution.

Sample Notes and Discussion:
Due to a matrix interference that prevented resolution of Benzo(b)fluoranthene and Benzo(k)fluoranthene the results for these compounds in sample Berth Oil Pipe are reported as Benzo(b)fluoranthene. The results were flagged with "X" to indicate the issue.

No other anomalies associated with the analysis of this sample were observed.

Approved by_____

Chain of Custody

ALS Environmental—Kelso Laboratory
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Phone (360)577- 7222 Fax (360)636- 1068
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CHAIN OF CUSTODY

ALS Environmental

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SR# 711601826

PAGE 1 OF 1 COC#

PROJECT NAME	Berth 1 Pipe
PROJECT NUMBER	
PROJECT MANAGER	Sean Kelly
COMPANY NAME	Port of Longview
ADDRESS	10 Port Way
CITY/STATE/ZIP	Longview, WA 98632
E-MAIL ADDRESS	SKelly@portoflongview.com
PHONE # / FAX #	360.703.0216
SAMPLER'S SIGNATURE	

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☒ 8270LL☐ SIM PAH☐	Volatile Organics 624☐ 8260☒ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCBs Aroclors☒ Congeners☐	Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	Metals (Total or Dissolved) (See List below)	Cyanide☐ Hex-Chrom☐	(circle) pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS, Turb.	(circle) NH_3-N, COD, TKN, TOC, DOC, NO_2+NO_3, T-Phos	TOX 9020☒ AOX 1650☐ 506☐	Alkalinity ☐ CO_3 ☐ HCO_3 ☐	Dioxins/Furans 1613☐ 8290☐	Dissolved Gases RSK 175☐ CO_2☐ Methane☐ Ethane☐ Ethene☐	Flashpoint	Fingerprinting	REMARKS
Berth 1 Pipe	2/18/16	10:00 AM		product	6	✓	✓			✓			✓				✓				✓	✓	

REPORT REQUIREMENTS

- ✓ I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. CLP Like Summary (no raw data)
- ___ IV. Data Validation Report
- ✓ V. EDD

INVOICE INFORMATION

P.O. # ___

Bill To: Port of Longview

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.

___ 5 day

X Standard (15 working days)

___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al (As) Sb (Ba) Be B Ca (Cd) Co (Cr) Cu Fe (Pb) Mg Mn Mo Ni K (Ag) Na Se Sr Ti Sn V (Zn) (Hg)

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: ___ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

Run flash point on unpreserved containers.

Call Tom Colligan at Floyd/Snider if there are questions 206.805.2166

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature	Date/Time 2/18/16 1400	Signature	Date/Time 2/18/16 1400	Signature	Date/Time	Signature	Date/Time
Printed Name Sean Kelly	Firm Port of LV	Printed Name	Firm ALS/KELSO	Printed Name	Firm	Printed Name	Firm

PC Kurt

Cooler Receipt and Preservation Form

Client Port of Longview Service Request K16 01824

Received: 2/13/16 Opened: 2/13/16 By: AJ Unloaded: 2/18/16 By: AJ

1. Samples were received via? *Mail* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____

If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID (NA)	Tracking Number (NA)	Filed
5.7	5.6	5.7	5.6	-0.1	308			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Page ____ *of* ____

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577- 7222 Fax (360)636- 1068
www.alsglobal.com

Analytical Report

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	02/18/16
Sample Matrix:	Oil	**Date Received:**	02/18/16
Analysis Method:	1020A	**Units:**	deg C
Prep Method:	None	**Basis:**	As Received

Flash Point

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
Berth Oil Pipe	K1601826-001	**>110**	-	1	03/08/16 14:30	
Method Blank	K1601826-MB1	**>110**	-	1	03/08/16 14:30	
Method Blank	K1601826-MB2	**>110**	-	1	03/08/16 14:30	

Analytical Report

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	02/18/16
Sample Matrix:	Oil	**Date Received:**	02/18/16
Analysis Method:	9056A Modified	**Units:**	mg/Kg
Prep Method:	EPA 5050	**Basis:**	As Received

Chloride

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Berth Oil Pipe	K1601826-001	**ND Ui**	50	5	03/09/16 00:28	3/4/16	
Method Blank	K1601826-MB1	ND U	20	2	03/08/16 11:12	3/4/16	

Metals

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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Enviromental

Analytical Report

Client :	Longview, Port of	**Service Request :**	K1601826
Project Name :	Berth 1 Pipe	**Date Collected :**	02/18/16
Project No. :	NA	**Date Received :**	02/18/16
Matrix :	Oil	**Date Extracted :**	02/25-03/09/16

Total Metals

Sample Name :	Berth Oil Pipe	**Units :**	mg/Kg (ppm)
Lab Code :	K1601826-001	**Basis :**	As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Arsenic	6010C	1.8	02/26/16	ND	
Barium	6010C	0.4	02/26/16	ND	
Cadmium	6010C	0.09	02/26/16	ND	
Chromium	6010C	0.4	02/26/16	ND	
Lead	6010C	0.9	02/26/16	ND	
Mercury	7471B	0.02	03/09/16	ND	
Selenium	6010C	1.8	02/26/16	3.0	
Silver	6010C	0.4	02/26/16	ND	
Zinc	6010C	0.5	02/26/16	1.4	

Comments:

ALS Group USA, Corp.
dba ALS Enviromental

Analytical Report

Client :	Longview, Port of	**Service Request :**	K1601826
Project Name :	Berth 1 Pipe	**Date Collected :**	NA
Project No. :	NA	**Date Received :**	NA
Matrix :	Oil	**Date Extracted :**	02/25-03/09/16

Total Metals

Sample Name :	Method Blank	**Units :**	mg/Kg (ppm)
Lab Code :	K1601826-MB	**Basis :**	As Received

Analyte	Analysis Method	MRL	Date Analyzed	Sample Result	Result Notes
Arsenic	6010C	2.0	02/26/16	ND	
Barium	6010C	0.4	02/26/16	ND	
Cadmium	6010C	0.1	02/26/16	ND	
Chromium	6010C	0.4	02/26/16	ND	
Lead	6010C	1.0	02/26/16	ND	
Mercury	7471B	0.02	03/09/16	ND	
Selenium	6010C	2.0	02/26/16	ND	
Silver	6010C	0.4	02/26/16	ND	
Zinc	6010C	0.5	02/26/16	ND	

Comments:

Diesel and Residual Range Organics

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577- 7222 Fax (360)636- 1068
www.alsglobal.com

Analytical Results

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	02/18/2016
Sample Matrix:	Oil	**Date Received:**	02/18/2016

Diesel and Residual Range Organics

Sample Name:	Berth Oil Pipe	**Units:**	mg/Kg
Lab Code:	K1601826-001	**Basis:**	NA
Extraction Method:	EPA 3580A	**Level:**	Low
Analysis Method:	8015C		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**400000**	DY	2900	10	03/01/16	03/04/16	KWG1601611	
Residual Range Organics (RRO)	**200000**	DO	4800	10	03/01/16	03/04/16	KWG1601611	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	82	70-130	03/04/16	Acceptable
n-Triacontane	98	70-130	03/04/16	Acceptable

Comments:

Analytical Results

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	NA
Sample Matrix:	Oil	**Date Received:**	NA

Diesel and Residual Range Organics

Sample Name:	Method Blank	**Units:**	mg/Kg
Lab Code:	KWG1601611-4	**Basis:**	NA
Extraction Method:	EPA 3580A	**Level:**	Low
Analysis Method:	8015C		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	290	1	03/01/16	03/04/16	KWG1601611	
Residual Range Organics (RRO)	ND	U	480	1	03/01/16	03/04/16	KWG1601611	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	94	70-130	03/04/16	Acceptable
n-Triacontane	98	70-130	03/04/16	Acceptable

Comments:

Polychlorinated Biphenyls (PCBs)

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Results

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	02/18/2016
Sample Matrix:	Oil	**Date Received:**	02/18/2016

Polychlorinated Biphenyls (PCBs)

Sample Name:	Berth Oil Pipe	**Units:**	mg/Kg
Lab Code:	K1601826-001	**Basis:**	NA
Extraction Method:	EPA 3580A	**Level:**	Low
Analysis Method:	8082A		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	Ui	0.98	1	03/01/16	03/07/16	KWG1601610	
Aroclor 1221	ND	U	1.9	1	03/01/16	03/07/16	KWG1601610	
Aroclor 1232	ND	U	0.93	1	03/01/16	03/07/16	KWG1601610	
Aroclor 1242	ND	U	0.93	1	03/01/16	03/07/16	KWG1601610	
Aroclor 1248	ND	U	0.93	1	03/01/16	03/07/16	KWG1601610	
Aroclor 1254	ND	U	0.93	1	03/01/16	03/07/16	KWG1601610	
Aroclor 1260	ND	U	0.93	1	03/01/16	03/07/16	KWG1601610	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	89	49-133	03/07/16	Acceptable

Comments:

Analytical Results

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	NA
Sample Matrix:	Oil	**Date Received:**	NA

Polychlorinated Biphenyls (PCBs)

Sample Name:	Method Blank	**Units:**	mg/Kg
Lab Code:	KWG1601610-4	**Basis:**	NA
Extraction Method:	EPA 3580A	**Level:**	Low
Analysis Method:	8082A		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Aroclor 1016	ND	U	0.93	1	03/01/16	03/07/16	KWG1601610	
Aroclor 1221	ND	U	1.9	1	03/01/16	03/07/16	KWG1601610	
Aroclor 1232	ND	U	0.93	1	03/01/16	03/07/16	KWG1601610	
Aroclor 1242	ND	U	0.93	1	03/01/16	03/07/16	KWG1601610	
Aroclor 1248	ND	U	0.93	1	03/01/16	03/07/16	KWG1601610	
Aroclor 1254	ND	U	0.93	1	03/01/16	03/07/16	KWG1601610	
Aroclor 1260	ND	U	0.93	1	03/01/16	03/07/16	KWG1601610	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	88	49-133	03/07/16	Acceptable

Comments:

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
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Analytical Results

Client: Longview, Port of
Project: Berth 1 Pipe
Sample Matrix: Oil

Service Request: K1601826
Date Collected: 02/18/2016
Date Received: 02/18/2016

Volatile Organic Compounds

Sample Name: Berth Oil Pipe
Lab Code: K1601826-001

Extraction Method: EPA 5030A/5030B
Analysis Method: 8260C

Units: mg/Kg
Basis: Wet

Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Chloromethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Vinyl Chloride	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Bromomethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Chloroethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Trichlorofluoromethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
1,1-Dichloroethene	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Acetone	ND	U	200	1	03/01/16	03/01/16	KWG1601657	
Carbon Disulfide	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Methylene Chloride	ND	U	20	1	03/01/16	03/01/16	KWG1601657	
trans-1,2-Dichloroethene	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
1,1-Dichloroethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
2,2-Dichloropropane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
cis-1,2-Dichloroethene	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
2-Butanone (MEK)	ND	U	200	1	03/01/16	03/01/16	KWG1601657	
Bromochloromethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Chloroform	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Carbon Tetrachloride	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
1,1-Dichloropropene	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Benzene	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
1,2-Dichloroethane (EDC)	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Trichloroethene (TCE)	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	*
1,2-Dichloropropane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Dibromomethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Bromodichloromethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	*
cis-1,3-Dichloropropene	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	*
4-Methyl-2-pentanone (MIBK)	ND	U	200	1	03/01/16	03/01/16	KWG1601657	
Toluene	**27**		5.0	1	03/01/16	03/01/16	KWG1601657	
trans-1,3-Dichloropropene	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	*
1,1,2-Trichloroethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Tetrachloroethene (PCE)	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
2-Hexanone	ND	U	200	1	03/01/16	03/01/16	KWG1601657	
1,3-Dichloropropane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	

Comments:

Analytical Results

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	02/18/2016
Sample Matrix:	Oil	**Date Received:**	02/18/2016

Volatile Organic Compounds

Sample Name:	Berth Oil Pipe	**Units:**	mg/Kg
Lab Code:	K1601826-001	**Basis:**	Wet
Extraction Method:	EPA 5030A/5030B	**Level:**	Med
Analysis Method:	8260C		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dibromochloromethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
1,2-Dibromoethane (EDB)	ND	U	20	1	03/01/16	03/01/16	KWG1601657	
Chlorobenzene	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Ethylbenzene	**15**		5.0	1	03/01/16	03/01/16	KWG1601657	
1,1,1,2-Tetrachloroethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
m,p-Xylenes	**77**		5.0	1	03/01/16	03/01/16	KWG1601657	
o-Xylene	**38**		5.0	1	03/01/16	03/01/16	KWG1601657	
Styrene	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Bromoform	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Isopropylbenzene	ND	U	20	1	03/01/16	03/01/16	KWG1601657	
1,1,2,2-Tetrachloroethane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
Bromobenzene	ND	U	20	1	03/01/16	03/01/16	KWG1601657	
n-Propylbenzene	ND	U	20	1	03/01/16	03/01/16	KWG1601657	
1,2,3-Trichloropropane	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
2-Chlorotoluene	ND	U	20	1	03/01/16	03/01/16	KWG1601657	
1,3,5-Trimethylbenzene	**49**		20	1	03/01/16	03/01/16	KWG1601657	
4-Chlorotoluene	ND	U	20	1	03/01/16	03/01/16	KWG1601657	
tert-Butylbenzene	ND	U	20	1	03/01/16	03/01/16	KWG1601657	
1,2,4-Trimethylbenzene	**230**		20	1	03/01/16	03/01/16	KWG1601657	
sec-Butylbenzene	ND	U	20	1	03/01/16	03/01/16	KWG1601657	
4-Isopropyltoluene	ND	U	20	1	03/01/16	03/01/16	KWG1601657	
1,3-Dichlorobenzene	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
1,4-Dichlorobenzene	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
n-Butylbenzene	**75**		20	1	03/01/16	03/01/16	KWG1601657	
1,2-Dichlorobenzene	ND	U	5.0	1	03/01/16	03/01/16	KWG1601657	
1,2-Dibromo-3-chloropropane	ND	U	20	1	03/01/16	03/01/16	KWG1601657	*
1,2,4-Trichlorobenzene	ND	U	20	1	03/01/16	03/01/16	KWG1601657	
Hexachlorobutadiene	ND	U	20	1	03/01/16	03/01/16	KWG1601657	
Naphthalene	**780**		20	1	03/01/16	03/01/16	KWG1601657	*
1,2,3-Trichlorobenzene	ND	U	20	1	03/01/16	03/01/16	KWG1601657	

* See Case Narrative

Comments:

Analytical Results

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	02/18/2016
Sample Matrix:	Oil	**Date Received:**	02/18/2016

Volatile Organic Compounds

Sample Name:	Berth Oil Pipe	**Units:**	mg/Kg
Lab Code:	K1601826-001	**Basis:**	Wet

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	97	55-132	03/01/16	Acceptable
Toluene-d8	110	81-124	03/01/16	Acceptable
4-Bromofluorobenzene	99	64-132	03/01/16	Acceptable

Comments:

Analytical Results

Client: Longview, Port of
Project: Berth 1 Pipe
Sample Matrix: Oil

Service Request: K1601826
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1601657-3

Extraction Method: EPA 5030A/5030B
Analysis Method: 8260C

Units: mg/Kg
Basis: Wet

Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Chloromethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Vinyl Chloride	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Bromomethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Chloroethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Trichlorofluoromethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
1,1-Dichloroethene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Acetone	ND	U	2.0	1	03/01/16	03/01/16	KWG1601657	
Carbon Disulfide	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Methylene Chloride	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
trans-1,2-Dichloroethene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
1,1-Dichloroethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
2,2-Dichloropropane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
cis-1,2-Dichloroethene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
2-Butanone (MEK)	ND	U	2.0	1	03/01/16	03/01/16	KWG1601657	
Bromochloromethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Chloroform	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
1,1,1-Trichloroethane (TCA)	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Carbon Tetrachloride	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
1,1-Dichloropropene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Benzene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
1,2-Dichloroethane (EDC)	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Trichloroethene (TCE)	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	*
1,2-Dichloropropane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Dibromomethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Bromodichloromethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	*
cis-1,3-Dichloropropene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	*
4-Methyl-2-pentanone (MIBK)	ND	U	2.0	1	03/01/16	03/01/16	KWG1601657	
Toluene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
trans-1,3-Dichloropropene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	*
1,1,2-Trichloroethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Tetrachloroethene (PCE)	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
2-Hexanone	ND	U	2.0	1	03/01/16	03/01/16	KWG1601657	
1,3-Dichloropropane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	

Comments:

Analytical Results

Client: Longview, Port of
Project: Berth 1 Pipe
Sample Matrix: Oil

Service Request: K1601826
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1601657-3

Extraction Method: EPA 5030A/5030B
Analysis Method: 8260C

Units: mg/Kg
Basis: Wet

Level: Med

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dibromochloromethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
1,2-Dibromoethane (EDB)	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
Chlorobenzene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Ethylbenzene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
1,1,1,2-Tetrachloroethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
m,p-Xylenes	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
o-Xylene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Styrene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Bromoform	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Isopropylbenzene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
1,1,2,2-Tetrachloroethane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
Bromobenzene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
n-Propylbenzene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
1,2,3-Trichloropropane	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
2-Chlorotoluene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
1,3,5-Trimethylbenzene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
4-Chlorotoluene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
tert-Butylbenzene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
1,2,4-Trimethylbenzene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
sec-Butylbenzene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
4-Isopropyltoluene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
1,3-Dichlorobenzene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
1,4-Dichlorobenzene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
n-Butylbenzene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
1,2-Dichlorobenzene	ND	U	0.050	1	03/01/16	03/01/16	KWG1601657	
1,2-Dibromo-3-chloropropane	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	*
1,2,4-Trichlorobenzene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
Hexachlorobutadiene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	
Naphthalene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	*
1,2,3-Trichlorobenzene	ND	U	0.20	1	03/01/16	03/01/16	KWG1601657	

* See Case Narrative

Comments:

Analytical Results

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	NA
Sample Matrix:	Oil	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	mg/Kg
Lab Code:	KWG1601657-3	**Basis:**	Wet

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	96	55-132	03/01/16	Acceptable
Toluene-d8	109	81-124	03/01/16	Acceptable
4-Bromofluorobenzene	97	64-132	03/01/16	Acceptable

Comments:

Semi-Volatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
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Analytical Results

Client: Longview, Port of
Project: Berth 1 Pipe
Sample Matrix: Oil

Service Request: K1601826
Date Collected: 02/18/2016
Date Received: 02/18/2016

Semi-Volatile Organic Compounds by GC/MS

Sample Name: Berth Oil Pipe
Lab Code: K1601826-001

Units: mg/Kg
Basis: Wet

Extraction Method: EPA 3580A
Analysis Method: 8270D

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	ND	U	110	5	03/08/16	03/23/16	KWG1601819	*
Aniline	ND	U	440	5	03/08/16	03/23/16	KWG1601819	
Bis(2-chloroethyl) Ether	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
Phenol	ND	U	22	5	03/08/16	03/23/16	KWG1601819	*
2-Chlorophenol	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
1,3-Dichlorobenzene	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
1,4-Dichlorobenzene	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
1,2-Dichlorobenzene	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
Benzyl Alcohol	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
Bis(2-chloroisopropyl) Ether	ND	U	22	5	03/08/16	03/23/16	KWG1601819	*
2-Methylphenol	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
Hexachloroethane	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
N-Nitrosodi-n-propylamine	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
4-Methylphenol†	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
Nitrobenzene	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
Isophorone	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
2-Nitrophenol	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
2,4-Dimethylphenol	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
Bis(2-chloroethoxy)methane	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
2,4-Dichlorophenol	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
Benzoic Acid	ND	U	220	5	03/08/16	03/23/16	KWG1601819	
1,2,4-Trichlorobenzene	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
Naphthalene	**1100**	D	22	5	03/08/16	03/23/16	KWG1601819	
4-Chloroaniline	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
Hexachlorobutadiene	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
4-Chloro-3-methylphenol	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
2-Methylnaphthalene	**3800**	D	22	5	03/08/16	03/23/16	KWG1601819	
Hexachlorocyclopentadiene	ND	U	110	5	03/08/16	03/23/16	KWG1601819	*
2,4,6-Trichlorophenol	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
2,4,5-Trichlorophenol	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
2-Chloronaphthalene	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
2-Nitroaniline	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
Acenaphthylene	**67**	D	22	5	03/08/16	03/23/16	KWG1601819	
Dimethyl Phthalate	ND	U	22	5	03/08/16	03/23/16	KWG1601819	

Comments:

Analytical Results

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	02/18/2016
Sample Matrix:	Oil	**Date Received:**	02/18/2016

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	Berth Oil Pipe	**Units:**	mg/Kg
Lab Code:	K1601826-001	**Basis:**	Wet
Extraction Method:	EPA 3580A	**Level:**	Low
Analysis Method:	8270D		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2,6-Dinitrotoluene	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
Acenaphthene	**180**	D	22	5	03/08/16	03/23/16	KWG1601819	
3-Nitroaniline	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
2,4-Dinitrophenol	ND	U	440	5	03/08/16	03/23/16	KWG1601819	
Dibenzofuran	**140**	D	22	5	03/08/16	03/23/16	KWG1601819	
4-Nitrophenol	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
2,4-Dinitrotoluene	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
Fluorene	**320**	D	22	5	03/08/16	03/23/16	KWG1601819	
4-Chlorophenyl Phenyl Ether	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
Diethyl Phthalate	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
4-Nitroaniline	ND	U	220	5	03/08/16	03/23/16	KWG1601819	
2-Methyl-4,6-dinitrophenol	ND	U	220	5	03/08/16	03/23/16	KWG1601819	
N-Nitrosodiphenylamine	**380**	D	110	5	03/08/16	03/23/16	KWG1601819	*
4-Bromophenyl Phenyl Ether	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
Hexachlorobenzene	ND	U	22	5	03/08/16	03/23/16	KWG1601819	
Pentachlorophenol	ND	U	220	5	03/08/16	03/23/16	KWG1601819	*
Phenanthrene	**760**	D	22	5	03/08/16	03/23/16	KWG1601819	
Anthracene	**97**	D	22	5	03/08/16	03/23/16	KWG1601819	
Di-n-butyl Phthalate	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
Fluoranthene	**62**	D	22	5	03/08/16	03/23/16	KWG1601819	
Pyrene	**490**	D	22	5	03/08/16	03/23/16	KWG1601819	
Butyl Benzyl Phthalate	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
3,3'-Dichlorobenzidine	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
Benz(a)anthracene	**620**	D	22	5	03/08/16	03/23/16	KWG1601819	
Chrysene	**980**	D	22	5	03/08/16	03/23/16	KWG1601819	
Bis(2-ethylhexyl) Phthalate	ND	U	220	5	03/08/16	03/23/16	KWG1601819	
Di-n-octyl Phthalate	ND	U	220	5	03/08/16	03/23/16	KWG1601819	
Benzo(b)fluoranthene	**170**	DX	22	5	03/08/16	03/23/16	KWG1601819	
Benzo(k)fluoranthene	ND	UX	22	5	03/08/16	03/23/16	KWG1601819	
Benzo(a)pyrene	**270**	D	110	5	03/08/16	03/23/16	KWG1601819	
Indeno(1,2,3-cd)pyrene	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
Dibenz(a,h)anthracene	ND	U	110	5	03/08/16	03/23/16	KWG1601819	
Benzo(g,h,i)perylene	**73**	D	22	5	03/08/16	03/23/16	KWG1601819	

Comments:

Analytical Results

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	02/18/2016
Sample Matrix:	Oil	**Date Received:**	02/18/2016

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	Berth Oil Pipe	**Units:**	mg/Kg
Lab Code:	K1601826-001	**Basis:**	Wet

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	87	50-150	03/23/16	Acceptable
Phenol-d6	103	50-150	03/23/16	Acceptable
Nitrobenzene-d5	105	50-150	03/23/16	Acceptable
2-Fluorobiphenyl	114	50-150	03/23/16	Acceptable
2,4,6-Tribromophenol	97	50-150	03/23/16	Acceptable
Terphenyl-d14	113	50-150	03/23/16	Acceptable

† Analyte Comments

4-Methylphenol	This analyte cannot be separated from 3-Methylphenol.

Comments:

Analytical Results

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	NA
Sample Matrix:	Oil	**Date Received:**	NA

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Units:**	mg/Kg
Lab Code:	KWG1601819-5	**Basis:**	Wet
Extraction Method:	EPA 3580A	**Level:**	Low
Analysis Method:	8270D		

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	ND	U	20	1	03/08/16	03/22/16	KWG1601819	*
Aniline	ND	U	78	1	03/08/16	03/22/16	KWG1601819	
Bis(2-chloroethyl) Ether	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Phenol	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	*
2-Chlorophenol	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
1,3-Dichlorobenzene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
1,4-Dichlorobenzene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
1,2-Dichlorobenzene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Benzyl Alcohol	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Bis(2-chloroisopropyl) Ether	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	*
2-Methylphenol	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Hexachloroethane	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
N-Nitrosodi-n-propylamine	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
4-Methylphenol†	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Nitrobenzene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Isophorone	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
2-Nitrophenol	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
2,4-Dimethylphenol	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Bis(2-chloroethoxy)methane	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
2,4-Dichlorophenol	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
Benzoic Acid	ND	U	39	1	03/08/16	03/22/16	KWG1601819	
1,2,4-Trichlorobenzene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Naphthalene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
4-Chloroaniline	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Hexachlorobutadiene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
4-Chloro-3-methylphenol	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
2-Methylnaphthalene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Hexachlorocyclopentadiene	ND	U	20	1	03/08/16	03/22/16	KWG1601819	*
2,4,6-Trichlorophenol	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
2,4,5-Trichlorophenol	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
2-Chloronaphthalene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
2-Nitroaniline	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
Acenaphthylene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Dimethyl Phthalate	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	

Comments:

Client: Longview, Port of
Project: Berth 1 Pipe
Sample Matrix: Oil

Service Request: K1601826
Date Collected: NA
Date Received: NA

Semi-Volatile Organic Compounds by GC/MS

Sample Name: Method Blank
Lab Code: KWG1601819-5

Extraction Method: EPA 3580A
Analysis Method: 8270D

Units: mg/Kg
Basis: Wet

Level: Low

Analyte Name	Result	Q	MRL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2,6-Dinitrotoluene	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
Acenaphthene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
3-Nitroaniline	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
2,4-Dinitrophenol	ND	U	78	1	03/08/16	03/22/16	KWG1601819	
Dibenzofuran	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
4-Nitrophenol	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
2,4-Dinitrotoluene	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
Fluorene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
4-Chlorophenyl Phenyl Ether	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Diethyl Phthalate	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
4-Nitroaniline	ND	U	39	1	03/08/16	03/22/16	KWG1601819	
2-Methyl-4,6-dinitrophenol	ND	U	39	1	03/08/16	03/22/16	KWG1601819	
N-Nitrosodiphenylamine	ND	U	20	1	03/08/16	03/22/16	KWG1601819	*
4-Bromophenyl Phenyl Ether	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Hexachlorobenzene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Pentachlorophenol	ND	U	39	1	03/08/16	03/22/16	KWG1601819	*
Phenanthrene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Anthracene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Di-n-butyl Phthalate	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
Fluoranthene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Pyrene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Butyl Benzyl Phthalate	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
3,3'-Dichlorobenzidine	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
Benz(a)anthracene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Chrysene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Bis(2-ethylhexyl) Phthalate	ND	U	39	1	03/08/16	03/22/16	KWG1601819	
Di-n-octyl Phthalate	ND	U	39	1	03/08/16	03/22/16	KWG1601819	
Benzo(b)fluoranthene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Benzo(k)fluoranthene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	
Benzo(a)pyrene	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
Indeno(1,2,3-cd)pyrene	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
Dibenz(a,h)anthracene	ND	U	20	1	03/08/16	03/22/16	KWG1601819	
Benzo(g,h,i)perylene	ND	U	3.9	1	03/08/16	03/22/16	KWG1601819	

Comments:

Analytical Results

Client:	Longview, Port of	**Service Request:**	K1601826
Project:	Berth 1 Pipe	**Date Collected:**	NA
Sample Matrix:	Oil	**Date Received:**	NA

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Units:**	mg/Kg
Lab Code:	KWG1601819-5	**Basis:**	Wet

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	69	50-150	03/22/16	Acceptable
Phenol-d6	72	50-150	03/22/16	Acceptable
Nitrobenzene-d5	76	50-150	03/22/16	Acceptable
2-Fluorobiphenyl	71	50-150	03/22/16	Acceptable
2,4,6-Tribromophenol	76	50-150	03/22/16	Acceptable
Terphenyl-d14	83	50-150	03/22/16	Acceptable

† **Analyte Comments**

4-Methylphenol	This analyte cannot be separated from 3-Methylphenol.

Comments:

Specialty Analytical

11711 SE Capps Road, Ste B
Clackamas, Oregon 97015
TEL: 503-607-1331 FAX: 503-607-1336
Website: www.specialtyanalytical.com

April 15, 2016

Sean Kelly
Port of Longview
10 Port Way
Longview, WA 98632

TEL: (360) 425-3305
FAX:
RE: Berth 1 Pipe

Dear Sean Kelly: Order No.: 1603278

Specialty Analytical received 3 sample(s) on 3/29/2016 for the analyses presented in the following report.

REVISED REPORT: Please see case narrative for information on revision.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications, except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Marty French
Lab Director

Case Narrative

WO#: **1603278**

Date: **4/15/2016**

Specialty Analytical

CLIENT: Port of Longview
Project: Berth 1 Pipe

Revision 1.

Upon further data review 8015FF_S values were corrected and dry-wt correction was removed from all samples.

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/28/2016
Project: Berth 1 Pipe
Lab ID: 1603278-001
Client Sample ID: B
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HYDROCARBON FUEL FINGERPRINT		**8015M**				Analyst: **JRC**
Automatric Trans Fluid	ND	5000		mg/Kg	10	4/4/2016 9:43:27 AM
Hydraulic Oil	ND	5000		mg/Kg	10	4/4/2016 9:43:27 AM
Gasoline	ND	2000		mg/Kg	10	4/4/2016 9:43:27 AM
Mineral Spirits	ND	2000		mg/Kg	10	4/4/2016 9:43:27 AM
Kerosene	ND	5000		mg/Kg	10	4/4/2016 9:43:27 AM
Diesel	>99%	5000		mg/Kg	10	4/4/2016 9:43:27 AM
Oil	ND	10000	A3	mg/Kg	10	4/4/2016 9:43:27 AM
Surr: o-Terphenyl	2170	50-150	SMI	%REC	10	4/4/2016 9:43:27 AM
ICP/MS METALS-TOTAL RECOVERABLE		**SW6020A**				Analyst: **JRC**
Arsenic	ND	471		µg/Kg	10	4/1/2016 11:23:57 AM
Barium	ND	471		µg/Kg	10	4/1/2016 11:23:57 AM
Cadmium	ND	94.3		µg/Kg	10	4/1/2016 11:23:57 AM
Chromium	ND	943		µg/Kg	10	4/1/2016 11:23:57 AM
Lead	ND	236		µg/Kg	10	4/1/2016 11:23:57 AM
Nickel	ND	471		µg/Kg	10	4/1/2016 11:23:57 AM
Selenium	ND	943		µg/Kg	10	4/1/2016 11:23:57 AM
Silver	ND	94.3		µg/Kg	10	4/1/2016 11:23:57 AM
Zinc	ND	4710		µg/Kg	10	4/1/2016 11:23:57 AM
TOTAL MERCURY		**SW 7471B**				Analyst: **BW**
Mercury	ND	0.0159		mg/Kg	1	4/1/2016 10:54:36 AM
VOLATILE ORGANICS BY GC/MS		**SW8260B**				Analyst: **CK**
1,1,1,2-Tetrachloroethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,1,1-Trichloroethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,1,2,2-Tetrachloroethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,1,2-Trichloroethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,1-Dichloroethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,1-Dichloroethene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,1-Dichloropropene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,2,3-Trichlorobenzene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,2,3-Trichloropropane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,2,4-Trichlorobenzene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,2,4-Trimethylbenzene	406000	100000		µg/Kg	10000	3/31/2016 1:25:00 PM
1,2-Dibromo-3-chloropropane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,2-Dibromoethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,2-Dichlorobenzene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/28/2016
Project: Berth 1 Pipe
Lab ID: 1603278-001
Client Sample ID: B
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		**SW8260B**				Analyst: **CK**
1,2-Dichloroethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,2-Dichloropropane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,3,5-Trimethylbenzene	90300	10000		µg/Kg	1000	3/31/2016 4:42:00 PM
1,3-Dichlorobenzene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,3-Dichloropropane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
1,4-Dichlorobenzene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
2,2-Dichloropropane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
2-Butanone	ND	20000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
2-Chlorotoluene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
2-Hexanone	ND	20000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
4-Chlorotoluene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
4-Isopropyltoluene	32500	10000		µg/Kg	1000	3/31/2016 4:42:00 PM
4-Methyl-2-pentanone	ND	20000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Acetone	ND	50000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Benzene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Bromobenzene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Bromochloromethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Bromodichloromethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Bromoform	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Bromomethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Carbon disulfide	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Carbon tetrachloride	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Chlorobenzene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Chloroethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Chloroform	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Chloromethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
cis-1,2-Dichloroethene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
cis-1,3-Dichloropropene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Dibromochloromethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Dibromomethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Dichlorodifluoromethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Ethylbenzene	22400	10000		µg/Kg	1000	3/31/2016 4:42:00 PM
Hexachlorobutadiene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Isopropylbenzene	14800	10000		µg/Kg	1000	3/31/2016 4:42:00 PM
m,p-Xylene	102000	20000		µg/Kg	1000	3/31/2016 4:42:00 PM
Methyl tert-butyl ether	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Methylene chloride	ND	50000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Naphthalene	635000	100000		µg/Kg	10000	3/31/2016 1:25:00 PM
n-Butylbenzene	81800	10000		µg/Kg	1000	3/31/2016 4:42:00 PM

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/28/2016
Project: Berth 1 Pipe
Lab ID: 1603278-001
Client Sample ID: B
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		**SW8260B**				Analyst: **CK**
n-Propylbenzene	58400	10000		µg/Kg	1000	3/31/2016 4:42:00 PM
o-Xylene	59500	10000		µg/Kg	1000	3/31/2016 4:42:00 PM
sec-Butylbenzene	31000	10000		µg/Kg	1000	3/31/2016 4:42:00 PM
Styrene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
tert-Butylbenzene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Tetrachloroethene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Toluene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
trans-1,2-Dichloroethene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
trans-1,3-Dichloropropene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Trichloroethene	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Trichlorofluoromethane	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Vinyl chloride	ND	10000	Q	µg/Kg	1000	3/31/2016 4:42:00 PM
Surr: 1,2-Dichloroethane-d4	83.4	71.5-112		%REC	1000	3/31/2016 4:42:00 PM
Surr: 4-Bromofluorobenzene	96.6	75.7-122		%REC	1000	3/31/2016 4:42:00 PM
Surr: Dibromofluoromethane	87.5	64.3-124		%REC	1000	3/31/2016 4:42:00 PM
Surr: Toluene-d8	98.8	74.9-120		%REC	1000	3/31/2016 4:42:00 PM
PCB'S IN OIL		**SW 8082A**				Analyst: **ajr**
Aroclor 1016	ND	1.30		mg/Kg-dry	1	3/30/2016 1:06:00 PM
Aroclor 1221	ND	1.30		mg/Kg-dry	1	3/30/2016 1:06:00 PM
Aroclor 1232	ND	1.30		mg/Kg-dry	1	3/30/2016 1:06:00 PM
Aroclor 1242	ND	1.30		mg/Kg-dry	1	3/30/2016 1:06:00 PM
Aroclor 1248	ND	1.30		mg/Kg-dry	1	3/30/2016 1:06:00 PM
Aroclor 1254	ND	1.30		mg/Kg-dry	1	3/30/2016 1:06:00 PM
Aroclor 1260	ND	1.30		mg/Kg-dry	1	3/30/2016 1:06:00 PM
Aroclor 1262	ND	1.30		mg/Kg-dry	1	3/30/2016 1:06:00 PM
Aroclor 1268	ND	1.30		mg/Kg-dry	1	3/30/2016 1:06:00 PM
Surr: Decachlorobiphenyl	80.4	76.3-151		%REC	1	3/30/2016 1:06:00 PM
IGNITABILITY		**SW1010**				Analyst: **MIS**
Ignitability	>140	0		°F	1	3/31/2016 1:20:32 PM
SUB CONTRACTING		**SUB_CONTRACTING**				Analyst: **sub**
Total Halogens	See Sub Report				1	4/4/2016

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/25/2016
Project: Berth 1 Pipe
Lab ID: 1603278-002
Client Sample ID: D
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HYDROCARBON FUEL FINGERPRINT		**8015M**				Analyst: **JRC**
Automatric Trans Fluid	ND	10000		mg/Kg	20	4/4/2016 10:05:25 AM
Hydraulic Oil	ND	10000		mg/Kg	20	4/4/2016 10:05:25 AM
Gasoline	ND	4000		mg/Kg	20	4/4/2016 10:05:25 AM
Mineral Spirits	ND	4000		mg/Kg	20	4/4/2016 10:05:25 AM
Kerosene	ND	10000		mg/Kg	20	4/4/2016 10:05:25 AM
Diesel	538000	10000		mg/Kg	20	4/4/2016 10:05:25 AM
Oil	295000	20000	A2	mg/Kg	20	4/4/2016 10:05:25 AM
Surr: o-Terphenyl	193	50-150	SMI	%REC	20	4/4/2016 10:05:25 AM
ICP/MS METALS-TOTAL RECOVERABLE		**SW6020A**				Analyst: **JRC**
Arsenic	ND	485		µg/Kg	10	4/1/2016 11:10:27 AM
Barium	ND	485		µg/Kg	10	4/1/2016 11:10:27 AM
Cadmium	ND	97.1		µg/Kg	10	4/1/2016 11:10:27 AM
Chromium	ND	971		µg/Kg	10	4/1/2016 11:10:27 AM
Lead	ND	243		µg/Kg	10	4/1/2016 11:10:27 AM
Nickel	51300	485		µg/Kg	10	4/1/2016 11:10:27 AM
Selenium	ND	971		µg/Kg	10	4/1/2016 11:10:27 AM
Silver	ND	97.1		µg/Kg	10	4/1/2016 11:10:27 AM
Zinc	ND	4850		µg/Kg	10	4/1/2016 11:10:27 AM
TOTAL MERCURY		**SW 7471B**				Analyst: **BW**
Mercury	ND	0.0143		mg/Kg	1	4/1/2016 11:02:36 AM
SEMIVOLATILE ORGANICS-LOW LEVEL		**SW8270D**				Analyst: **CK**
1,2,4-Trichlorobenzene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
1,2-Dichlorobenzene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
1,2-Diphenylhydrazine	ND	500000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
1,3-Dichlorobenzene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
1,4-Dichlorobenzene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
1-Methylnaphthalene	2550000	100000		µg/Kg	10	3/30/2016 5:25:00 PM
2,4,5-Trichlorophenol	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
2,4,6-Trichlorophenol	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
2,4-Dichlorophenol	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
2,4-Dimethylphenol	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
2,4-Dinitrophenol	ND	1000000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
2,4-Dinitrotoluene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
2,6-Dinitrotoluene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
2-Chloronaphthalene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
2-Chlorophenol	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/25/2016
Project: Berth 1 Pipe
Lab ID: 1603278-002
Client Sample ID: D
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS-LOW LEVEL		**SW8270D**				Analyst: **CK**
2-Methylnaphthalene	3440000	100000		µg/Kg	10	3/30/2016 5:25:00 PM
2-Methylphenol	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
2-Nitroaniline	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
2-Nitrophenol	ND	500000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
3-&4-Methylphenol	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
3,3-Dichlorobenzidine	ND	500000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
3-Nitroaniline	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
4,6-Dinitro-2-methylphenol	ND	500000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
4-Bromophenyl phenyl ether	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
4-Chloro-3-methylphenol	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
4-Chloroaniline	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
4-Chlorophenyl phenyl ether	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
4-Nitroaniline	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
4-Nitrophenol	ND	500000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Acenaphthene	199000	100000		µg/Kg	10	3/30/2016 5:25:00 PM
Acenaphthylene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Aniline	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Anthracene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Benz(a)anthracene	458000	100000		µg/Kg	10	3/30/2016 5:25:00 PM
Benzidine	ND	500000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Benzo(a)pyrene	237000	100000		µg/Kg	10	3/30/2016 5:25:00 PM
Benzo(b)fluoranthene	159000	100000		µg/Kg	10	3/30/2016 5:25:00 PM
Benzo(g,h,i)perylene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Benzo(k)fluoranthene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Benzoic Acid	ND	2000000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Benzyl Alcohol	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Benzyl butyl phthalate	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Bis(2-chloroethoxy)methane	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Bis(2-chloroethyl)ether	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Bis(2-chloroisopropyl)ether	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Bis(2-ethylhexyl)phthalate	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Carbazole	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Chrysene	890000	100000		µg/Kg	10	3/30/2016 5:25:00 PM
Dibenz(a,h)anthracene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Dibenzofuran	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Diethyl phthalate	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Dimethyl phthalate	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Di-n-butyl phthalate	ND	500000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Di-n-octyl phthalate	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/25/2016
Project: Berth 1 Pipe
Lab ID: 1603278-002
Client Sample ID: D
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS-LOW LEVEL		**SW8270D**				Analyst: **CK**
Fluoranthene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Fluorene	294000	100000		µg/Kg	10	3/30/2016 5:25:00 PM
Hexachlorobenzene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Hexachlorobutadiene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Hexachlorocyclopentadiene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Hexachloroethane	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Indeno(1,2,3-cd)pyrene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Isophorone	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Naphthalene	1270000	100000		µg/Kg	10	3/30/2016 5:25:00 PM
Nitrobenzene	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
N-Nitrosodimethylamine	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
N-Nitrosodi-n-propylamine	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
N-Nitrosodiphenylamine	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Pentachlorophenol	ND	500000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Phenanthrene	714000	100000		µg/Kg	10	3/30/2016 5:25:00 PM
Phenol	ND	100000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Pyrene	478000	100000		µg/Kg	10	3/30/2016 5:25:00 PM
Pyridine	ND	500000	Q	µg/Kg	10	3/30/2016 5:25:00 PM
Surr: 2,4,6-Tribromophenol	69.1	57.8-119		%REC	10	3/30/2016 5:25:00 PM
Surr: 2-Fluorobiphenyl	85.9	52.6-113.2		%REC	10	3/30/2016 5:25:00 PM
Surr: 2-Fluorophenol	65.3	40.7-111		%REC	10	3/30/2016 5:25:00 PM
Surr: 4-Terphenyl-d14	65.1	49.8-118		%REC	10	3/30/2016 5:25:00 PM
Surr: Nitrobenzene-d5	63.2	44.8-103		%REC	10	3/30/2016 5:25:00 PM
Surr: Phenol-d6	45.1	37.5-117		%REC	10	3/30/2016 5:25:00 PM
VOLATILE ORGANICS BY GC/MS		**SW8260B**				Analyst: **CK**
1,1,1,2-Tetrachloroethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,1,1-Trichloroethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,1,2,2-Tetrachloroethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,1,2-Trichloroethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,1-Dichloroethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,1-Dichloroethene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,1-Dichloropropene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,2,3-Trichlorobenzene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,2,3-Trichloropropane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,2,4-Trichlorobenzene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,2,4-Trimethylbenzene	516000	100000		µg/Kg	2000	3/31/2016 1:58:00 PM
1,2-Dibromo-3-chloropropane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/25/2016
Project: Berth 1 Pipe
Lab ID: 1603278-002
Client Sample ID: D
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		**SW8260B**				Analyst: **CK**
1,2-Dibromoethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,2-Dichlorobenzene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,2-Dichloroethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,2-Dichloropropane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,3,5-Trimethylbenzene	125000	10000		µg/Kg	200	3/31/2016 5:14:00 PM
1,3-Dichlorobenzene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,3-Dichloropropane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
1,4-Dichlorobenzene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
2,2-Dichloropropane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
2-Butanone	ND	20000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
2-Chlorotoluene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
2-Hexanone	ND	20000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
4-Chlorotoluene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
4-Isopropyltoluene	19900	10000		µg/Kg	200	3/31/2016 5:14:00 PM
4-Methyl-2-pentanone	ND	20000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Acetone	ND	50000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Benzene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Bromobenzene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Bromochloromethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Bromodichloromethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Bromoform	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Bromomethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Carbon disulfide	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Carbon tetrachloride	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Chlorobenzene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Chloroethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Chloroform	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Chloromethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
cis-1,2-Dichloroethene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
cis-1,3-Dichloropropene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Dibromochloromethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Dibromomethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Dichlorodifluoromethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Ethylbenzene	48200	10000		µg/Kg	200	3/31/2016 5:14:00 PM
Hexachlorobutadiene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Isopropylbenzene	44500	10000		µg/Kg	200	3/31/2016 5:14:00 PM
m,p-Xylene	190000	20000		µg/Kg	200	3/31/2016 5:14:00 PM
Methyl tert-butyl ether	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Methylene chloride	ND	50000	Q	µg/Kg	200	3/31/2016 5:14:00 PM

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/25/2016
Project: Berth 1 Pipe
Lab ID: 1603278-002
Client Sample ID: D
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		**SW8260B**				Analyst: **CK**
Naphthalene	1140000	100000		µg/Kg	2000	3/31/2016 1:58:00 PM
n-Butylbenzene	62400	10000		µg/Kg	200	3/31/2016 5:14:00 PM
n-Propylbenzene	55300	10000		µg/Kg	200	3/31/2016 5:14:00 PM
o-Xylene	97900	10000		µg/Kg	200	3/31/2016 5:14:00 PM
sec-Butylbenzene	20400	10000		µg/Kg	200	3/31/2016 5:14:00 PM
Styrene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
tert-Butylbenzene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Tetrachloroethene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Toluene	51400	10000		µg/Kg	200	3/31/2016 5:14:00 PM
trans-1,2-Dichloroethene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
trans-1,3-Dichloropropene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Trichloroethene	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Trichlorofluoromethane	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Vinyl chloride	ND	10000	Q	µg/Kg	200	3/31/2016 5:14:00 PM
Surr: 1,2-Dichloroethane-d4	78.7	71.5-112		%REC	200	3/31/2016 5:14:00 PM
Surr: 4-Bromofluorobenzene	93.6	75.7-122		%REC	200	3/31/2016 5:14:00 PM
Surr: Dibromofluoromethane	83.7	64.3-124		%REC	200	3/31/2016 5:14:00 PM
Surr: Toluene-d8	98.2	74.9-120		%REC	200	3/31/2016 5:14:00 PM
PCB'S IN OIL		**SW 8082A**				Analyst: **ajr**
Aroclor 1016	ND	1.10		mg/Kg-dry	1	3/30/2016 1:24:00 PM
Aroclor 1221	ND	1.10		mg/Kg-dry	1	3/30/2016 1:24:00 PM
Aroclor 1232	ND	1.10		mg/Kg-dry	1	3/30/2016 1:24:00 PM
Aroclor 1242	ND	1.10		mg/Kg-dry	1	3/30/2016 1:24:00 PM
Aroclor 1248	ND	1.10		mg/Kg-dry	1	3/30/2016 1:24:00 PM
Aroclor 1254	ND	1.10		mg/Kg-dry	1	3/30/2016 1:24:00 PM
Aroclor 1260	ND	1.10		mg/Kg-dry	1	3/30/2016 1:24:00 PM
Aroclor 1262	ND	1.10		mg/Kg-dry	1	3/30/2016 1:24:00 PM
Aroclor 1268	ND	1.10		mg/Kg-dry	1	3/30/2016 1:24:00 PM
Surr: Decachlorobiphenyl	93.3	76.3-151		%REC	1	3/30/2016 1:24:00 PM
IGNITABILITY		**SW1010**				Analyst: **MIS**
Ignitability	>140	0		°F	1	3/31/2016 2:00:32 PM
SUB CONTRACTING		**SUB_CONTRACTING**				Analyst: **sub**
Total Halogens	See Sub Report				1	4/4/2016

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/29/2016
Project: Berth 1 Pipe
Lab ID: 1603278-003
Client Sample ID: E
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HYDROCARBON FUEL FINGERPRINT		**8015M**				Analyst: **JRC**
Automatric Trans Fluid	ND	10000		mg/Kg	20	4/4/2016 10:49:33 AM
Hydraulic Oil	ND	10000		mg/Kg	20	4/4/2016 10:49:33 AM
Gasoline	ND	4000		mg/Kg	20	4/4/2016 10:49:33 AM
Mineral Spirits	ND	4000		mg/Kg	20	4/4/2016 10:49:33 AM
Kerosene	ND	10000		mg/Kg	20	4/4/2016 10:49:33 AM
Diesel	229000	10000	K	mg/Kg	20	4/4/2016 10:49:33 AM
Oil	292000	20000	A2	mg/Kg	20	4/4/2016 10:49:33 AM
Surr: o-Terphenyl	107	50-150		%REC	20	4/4/2016 10:49:33 AM
ICP/MS METALS-TOTAL RECOVERABLE		**SW6020A**				Analyst: **JRC**
Arsenic	533	532		µg/Kg	10	4/1/2016 11:27:19 AM
Barium	ND	532		µg/Kg	10	4/1/2016 11:27:19 AM
Cadmium	ND	106		µg/Kg	10	4/1/2016 11:27:19 AM
Chromium	ND	1060		µg/Kg	10	4/1/2016 11:27:19 AM
Lead	2940	266		µg/Kg	10	4/1/2016 11:27:19 AM
Nickel	38300	532		µg/Kg	10	4/1/2016 11:27:19 AM
Selenium	ND	1060		µg/Kg	10	4/1/2016 11:27:19 AM
Silver	ND	106		µg/Kg	10	4/1/2016 11:27:19 AM
Zinc	ND	5320		µg/Kg	10	4/1/2016 11:27:19 AM
TOTAL MERCURY		**SW 7471B**				Analyst: **BW**
Mercury	ND	0.0168		mg/Kg	1	4/1/2016 11:04:36 AM
SEMIVOLATILE ORGANICS-LOW LEVEL		**SW8270D**				Analyst: **CK**
1,2,4-Trichlorobenzene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
1,2-Dichlorobenzene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
1,2-Diphenylhydrazine	ND	500000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
1,3-Dichlorobenzene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
1,4-Dichlorobenzene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
1-Methylnaphthalene	823000	100000		µg/Kg	10	3/30/2016 4:58:00 PM
2,4,5-Trichlorophenol	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
2,4,6-Trichlorophenol	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
2,4-Dichlorophenol	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
2,4-Dimethylphenol	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
2,4-Dinitrophenol	ND	1000000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
2,4-Dinitrotoluene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
2,6-Dinitrotoluene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
2-Chloronaphthalene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
2-Chlorophenol	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/29/2016
Project: Berth 1 Pipe
Lab ID: 1603278-003
Client Sample ID: E
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS-LOW LEVEL		**SW8270D**				Analyst: **CK**
2-Methylnaphthalene	1040000	100000		µg/Kg	10	3/30/2016 4:58:00 PM
2-Methylphenol	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
2-Nitroaniline	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
2-Nitrophenol	ND	500000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
3-&4-Methylphenol	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
3,3-Dichlorobenzidine	ND	500000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
3-Nitroaniline	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
4,6-Dinitro-2-methylphenol	ND	500000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
4-Bromophenyl phenyl ether	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
4-Chloro-3-methylphenol	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
4-Chloroaniline	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
4-Chlorophenyl phenyl ether	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
4-Nitroaniline	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
4-Nitrophenol	ND	500000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Acenaphthene	113000	100000		µg/Kg	10	3/30/2016 4:58:00 PM
Acenaphthylene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Aniline	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Anthracene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Benz(a)anthracene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Benzidine	ND	500000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Benzo(a)pyrene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Benzo(b)fluoranthene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Benzo(g,h,i)perylene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Benzo(k)fluoranthene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Benzoic Acid	ND	2000000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Benzyl Alcohol	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Benzyl butyl phthalate	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Bis(2-chloroethoxy)methane	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Bis(2-chloroethyl)ether	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Bis(2-chloroisopropyl)ether	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Bis(2-ethylhexyl)phthalate	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Carbazole	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Chrysene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Dibenz(a,h)anthracene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Dibenzofuran	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Diethyl phthalate	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Dimethyl phthalate	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Di-n-butyl phthalate	ND	500000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Di-n-octyl phthalate	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/29/2016
Project: Berth 1 Pipe
Lab ID: 1603278-003
Client Sample ID: E
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS-LOW LEVEL		**SW8270D**				Analyst: **CK**
Fluoranthene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Fluorene	135000	100000		µg/Kg	10	3/30/2016 4:58:00 PM
Hexachlorobenzene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Hexachlorobutadiene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Hexachlorocyclopentadiene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Hexachloroethane	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Indeno(1,2,3-cd)pyrene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Isophorone	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Naphthalene	311000	100000		µg/Kg	10	3/30/2016 4:58:00 PM
Nitrobenzene	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
N-Nitrosodimethylamine	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
N-Nitrosodi-n-propylamine	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
N-Nitrosodiphenylamine	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Pentachlorophenol	ND	500000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Phenanthrene	577000	100000		µg/Kg	10	3/30/2016 4:58:00 PM
Phenol	ND	100000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Pyrene	229000	100000		µg/Kg	10	3/30/2016 4:58:00 PM
Pyridine	ND	500000	Q	µg/Kg	10	3/30/2016 4:58:00 PM
Surr: 2,4,6-Tribromophenol	63.9	57.8-119		%REC	10	3/30/2016 4:58:00 PM
Surr: 2-Fluorobiphenyl	93.3	52.6-113.2		%REC	10	3/30/2016 4:58:00 PM
Surr: 2-Fluorophenol	56.5	40.7-111		%REC	10	3/30/2016 4:58:00 PM
Surr: 4-Terphenyl-d14	88.7	49.8-118		%REC	10	3/30/2016 4:58:00 PM
Surr: Nitrobenzene-d5	69.7	44.8-103		%REC	10	3/30/2016 4:58:00 PM
Surr: Phenol-d6	45.3	37.5-117		%REC	10	3/30/2016 4:58:00 PM
VOLATILE ORGANICS BY GC/MS		**SW8260B**				Analyst: **CK**
1,1,1,2-Tetrachloroethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,1,1-Trichloroethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,1,2,2-Tetrachloroethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,1,2-Trichloroethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,1-Dichloroethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,1-Dichloroethene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,1-Dichloropropene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,2,3-Trichlorobenzene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,2,3-Trichloropropane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,2,4-Trichlorobenzene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,2,4-Trimethylbenzene	168000	100000		µg/Kg	1000	3/31/2016 4:10:00 PM
1,2-Dibromo-3-chloropropane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/29/2016
Project: Berth 1 Pipe
Lab ID: 1603278-003
Client Sample ID: E
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		**SW8260B**				Analyst: **CK**
1,2-Dibromoethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,2-Dichlorobenzene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,2-Dichloroethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,2-Dichloropropane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,3,5-Trimethylbenzene	52900	10000		µg/Kg	100	3/31/2016 5:46:00 PM
1,3-Dichlorobenzene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,3-Dichloropropane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
1,4-Dichlorobenzene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
2,2-Dichloropropane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
2-Butanone	ND	20000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
2-Chlorotoluene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
2-Hexanone	ND	20000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
4-Chlorotoluene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
4-Isopropyltoluene	22000	10000		µg/Kg	100	3/31/2016 5:46:00 PM
4-Methyl-2-pentanone	ND	20000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Acetone	ND	50000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Benzene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Bromobenzene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Bromochloromethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Bromodichloromethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Bromoform	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Bromomethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Carbon disulfide	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Carbon tetrachloride	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Chlorobenzene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Chloroethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Chloroform	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Chloromethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
cis-1,2-Dichloroethene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
cis-1,3-Dichloropropene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Dibromochloromethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Dibromomethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Dichlorodifluoromethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Ethylbenzene	25700	10000		µg/Kg	100	3/31/2016 5:46:00 PM
Hexachlorobutadiene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Isopropylbenzene	10400	10000		µg/Kg	100	3/31/2016 5:46:00 PM
m,p-Xylene	107000	20000		µg/Kg	100	3/31/2016 5:46:00 PM
Methyl tert-butyl ether	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Methylene chloride	ND	50000	Q	µg/Kg	100	3/31/2016 5:46:00 PM

Specialty Analytical

Date Reported: 15-Apr-16

CLIENT: Port of Longview
Collection Date: 3/29/2016
Project: Berth 1 Pipe
Lab ID: 1603278-003
Client Sample ID: E
Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC/MS		**SW8260B**				Analyst: **CK**
Naphthalene	366000	100000		µg/Kg	1000	3/31/2016 4:10:00 PM
n-Butylbenzene	17200	10000		µg/Kg	100	3/31/2016 5:46:00 PM
n-Propylbenzene	22700	10000		µg/Kg	100	3/31/2016 5:46:00 PM
o-Xylene	54200	10000		µg/Kg	100	3/31/2016 5:46:00 PM
sec-Butylbenzene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Styrene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
tert-Butylbenzene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Tetrachloroethene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Toluene	35900	10000		µg/Kg	100	3/31/2016 5:46:00 PM
trans-1,2-Dichloroethene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
trans-1,3-Dichloropropene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Trichloroethene	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Trichlorofluoromethane	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Vinyl chloride	ND	10000	Q	µg/Kg	100	3/31/2016 5:46:00 PM
Surr: 1,2-Dichloroethane-d4	78.5	71.5-112		%REC	100	3/31/2016 5:46:00 PM
Surr: 4-Bromofluorobenzene	92.7	75.7-122		%REC	100	3/31/2016 5:46:00 PM
Surr: Dibromofluoromethane	80.4	64.3-124		%REC	100	3/31/2016 5:46:00 PM
Surr: Toluene-d8	98.2	74.9-120		%REC	100	3/31/2016 5:46:00 PM
PCB'S IN OIL		**SW 8082A**				Analyst: **ajr**
Aroclor 1016	ND	1.04		mg/Kg-dry	1	3/30/2016 1:41:00 PM
Aroclor 1221	ND	1.04		mg/Kg-dry	1	3/30/2016 1:41:00 PM
Aroclor 1232	ND	1.04		mg/Kg-dry	1	3/30/2016 1:41:00 PM
Aroclor 1242	ND	1.04		mg/Kg-dry	1	3/30/2016 1:41:00 PM
Aroclor 1248	ND	1.04		mg/Kg-dry	1	3/30/2016 1:41:00 PM
Aroclor 1254	ND	1.04		mg/Kg-dry	1	3/30/2016 1:41:00 PM
Aroclor 1260	ND	1.04		mg/Kg-dry	1	3/30/2016 1:41:00 PM
Aroclor 1262	ND	1.04		mg/Kg-dry	1	3/30/2016 1:41:00 PM
Aroclor 1268	ND	1.04		mg/Kg-dry	1	3/30/2016 1:41:00 PM
Surr: Decachlorobiphenyl	81.1	76.3-151		%REC	1	3/30/2016 1:41:00 PM
IGNITABILITY		**SW1010**				Analyst: **MIS**
Ignitability	>140	0		°F	1	3/31/2016 2:20:32 PM
SUB CONTRACTING		**SUB_CONTRACTING**				Analyst: **sub**
Total Halogens	See Sub Report				1	4/4/2016

QC SUMMARY REPORT

WO#: **1603278**

Specialty Analytical

15-Apr-16

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **6020_S**

Sample ID: **ICV** SampType: **ICV** TestCode: **6020_S** Units: **µg/Kg** Prep Date: RunNo: **24504**
Client ID: **ICV** Batch ID: **11031** TestNo: **SW6020A** **SW3050B** Analysis Date: **4/1/2016** SeqNo: **330569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4970	50.0	5000	0	99.4	90	110				
Barium	4930	50.0	5000	0	98.6	90	110				
Cadmium	4940	10.0	5000	0	98.7	90	110				
Chromium	4900	100	5000	0	98.1	90	110				
Lead	4990	25.0	5000	0	99.8	90	110				
Nickel	4990	50.0	5000	0	99.8	90	110				
Selenium	4970	100	5000	0	99.4	90	110				
Silver	5070	10.0	5000	0	101	90	110				
Zinc	4840	500	5000	0	96.9	90	110				

Sample ID: **MB-11031** SampType: **MBLK** TestCode: **6020_S** Units: **µg/Kg** Prep Date: **3/30/2016** RunNo: **24504**
Client ID: **PBS** Batch ID: **11031** TestNo: **SW6020A** **SW3050B** Analysis Date: **4/1/2016** SeqNo: **330570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	50.0									
Barium	ND	50.0									
Cadmium	ND	10.0									
Chromium	ND	100									
Lead	ND	25.0									
Nickel	ND	50.0									
Selenium	ND	100									
Silver	ND	10.0									
Zinc	ND	500									

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

15-Apr-16

Specialty Analytical

Client: Port of Longview

Project: Berth 1 Pipe **TestCode:** **6020_S**

Sample ID: **1603278-002DDUP** SampType: **DUP** TestCode: **6020_S** Units: **µg/Kg** Prep Date: **3/30/2016** RunNo: **24504**

Client ID: **D** Batch ID: **11031** TestNo: **SW6020A** **SW3050B** Analysis Date: **4/1/2016** SeqNo: **330573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	490						0	0	20	
Barium	ND	490						0	0	20	RF
Cadmium	ND	98.1						0	0	20	
Chromium	ND	981						0	0	20	
Lead	ND	245						0	0	20	
Nickel	52000	490						51300	1.38	20	
Selenium	ND	981						0	0	20	RF
Silver	ND	98.1						0	0	20	
Zinc	ND	4900						0	0	20	RF

Sample ID: **1603278-002DMS** SampType: **MS** TestCode: **6020_S** Units: **µg/Kg** Prep Date: **3/30/2016** RunNo: **24504**

Client ID: **D** Batch ID: **11031** TestNo: **SW6020A** **SW3050B** Analysis Date: **4/1/2016** SeqNo: **330574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4840	491	4912	113.5	96.3	70	130				
Barium	5230	491	4912	174.0	103	70	130				
Cadmium	5050	98.2	4912	0	103	70	130				
Chromium	5410	982	4912	125.0	108	70	130				
Lead	5100	246	4912	94.99	102	70	130				
Nickel	56700	491	4912	51300	110	70	130				
Selenium	4770	982	4912	222.0	92.6	70	130				
Silver	5010	98.2	4912	0	102	70	130				
Zinc	6370	4910	4912	1686	95.3	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

O RSD is greater than RSDlimit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

15-Apr-16

Specialty Analytical

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **6020_S**

Sample ID: **1603278-002DMSD** SampType: **MSD** TestCode: **6020_S** Units: **µg/Kg** Prep Date: **3/30/2016** RunNo: **24504**
Client ID: **D** Batch ID: **11031** TestNo: **SW6020A** **SW3050B** Analysis Date: **4/1/2016** SeqNo: **330575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	5190	505	5046	113.5	101	70	130	4844	6.84	20	
Barium	5590	505	5046	174.0	107	70	130	5226	6.69	20	
Cadmium	5340	101	5046	0	106	70	130	5045	5.73	20	
Chromium	5640	1010	5046	125.0	109	70	130	5414	4.02	20	
Lead	5370	252	5046	94.99	105	70	130	5103	5.10	20	
Nickel	56900	505	5046	51300	111	70	130	56680	0.358	20	
Selenium	5150	1010	5046	222.0	97.7	70	130	4771	7.72	20	
Silver	5390	101	5046	0	107	70	130	5009	7.29	20	
Zinc	7240	5050	5046	1686	110	70	130	6368	12.8	20	

Sample ID: **LCS-11031** SampType: **LCS** TestCode: **6020_S** Units: **µg/Kg** Prep Date: **3/30/2016** RunNo: **24504**
Client ID: **LCSS** Batch ID: **11031** TestNo: **SW6020A** **SW3050B** Analysis Date: **4/1/2016** SeqNo: **330579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4910	50.0	5000	0	98.1	73.4	120				
Barium	4940	50.0	5000	0	98.8	80	120				
Cadmium	4970	10.0	5000	0	99.3	80	120				
Chromium	5070	100	5000	0	101	80	120				
Lead	5130	25.0	5000	0	103	80	120				
Nickel	5010	50.0	5000	0	100	80	120				
Selenium	4860	100	5000	0	97.3	79.5	119				
Silver	5140	10.0	5000	0	103	12.3	165				
Zinc	4800	500	5000	0	96.0	69	129				

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

Specialty Analytical

15-Apr-16

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **8015FF_S**

Sample ID: **CCV** SampType: **CCV** TestCode: **8015FF_S** Units: **mg/Kg** Prep Date: **3/30/2016** RunNo: **24515**
Client ID: **CCV** Batch ID: **11030** TestNo: **8015M** **SW3580A** Analysis Date: **4/4/2016** SeqNo: **330787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	32100	500	30000	0	107	85	115				
Oil	17000	1000	15000	0	113	85	115				

Sample ID: **MB-11030** SampType: **MBLK** TestCode: **8015FF_S** Units: **mg/Kg** Prep Date: **3/30/2016** RunNo: **24515**
Client ID: **PBS** Batch ID: **11030** TestNo: **8015M** **SW3580A** Analysis Date: **4/4/2016** SeqNo: **330788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Automatric Trans Fluid	ND	500									
Hydraulic Oil	ND	500									
Gasoline	ND	200									
Mineral Spirits	ND	200									
Kerosene	ND	500									
Diesel	ND	500									
Oil	ND	1000									
Surr: o-Terphenyl	781		1000		78.1	50	150				

Sample ID: **CCV** SampType: **CCV** TestCode: **8015FF_S** Units: **mg/Kg** Prep Date: **3/30/2016** RunNo: **24515**
Client ID: **CCV** Batch ID: **11030** TestNo: **8015M** **SW3580A** Analysis Date: **4/4/2016** SeqNo: **330792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	30700	500	30000	0	102	85	115				
Oil	14300	1000	15000	0	95.1	85	115				

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

Specialty Analytical

15-Apr-16

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **8082_O**

Sample ID: **MB-11029** SampType: **MBLK** TestCode: **8082_O** Units: **mg/Kg** Prep Date: **3/30/2016** RunNo: **24473**
Client ID: **PBW** Batch ID: **11029** TestNo: **SW 8082A** **SW3580A** Analysis Date: **3/30/2016** SeqNo: **330310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.00									
Aroclor 1221	ND	1.00									
Aroclor 1232	ND	1.00									
Aroclor 1242	ND	1.00									
Aroclor 1248	ND	1.00									
Aroclor 1254	ND	1.00									
Aroclor 1260	ND	1.00									
Aroclor 1262	ND	1.00									
Aroclor 1268	ND	1.00									
Surr: Decachlorobiphenyl	1010		1000		101	76.3	151				

Sample ID: **1016/1260 CCV** SampType: **CCV** TestCode: **8082_O** Units: **mg/Kg** Prep Date: RunNo: **24473**
Client ID: **CCV** Batch ID: **11029** TestNo: **SW 8082A** **SW3580A** Analysis Date: **3/30/2016** SeqNo: **330317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016/1260	9.43	1.00	10.00	0	94.3	85	115				
Aroclor 1260	10.0	1.00	10.00	0	100	85	115				

Sample ID: **CCB-11029** SampType: **CCB** TestCode: **8082_O** Units: **mg/Kg** Prep Date: RunNo: **24473**
Client ID: **CCB** Batch ID: **11029** TestNo: **SW 8082A** **SW3580A** Analysis Date: **3/31/2016** SeqNo: **330451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.00									

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

Specialty Analytical

15-Apr-16

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **8082_O**

Sample ID: **CCB-11029**	SampType: **CCB**	TestCode: **8082_O**	Units: **mg/Kg**	Prep Date:	RunNo: **24473**
Client ID: **CCB**	Batch ID: **11029**	TestNo: **SW 8082A**	**SW3580A**	Analysis Date: **3/31/2016**	SeqNo: **330451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1221	ND	1.00									
Aroclor 1232	ND	1.00									
Aroclor 1242	ND	1.00									
Aroclor 1248	ND	1.00									
Aroclor 1254	ND	1.00									
Aroclor 1260	ND	1.00									
Aroclor 1262	ND	1.00									
Aroclor 1268	ND	1.00									
Surr: Decachlorobiphenyl	976		1000		97.6	76.3	151				

Sample ID: **1016/1260 CCV**	SampType: **CCV**	TestCode: **8082_O**	Units: **mg/Kg**	Prep Date:	RunNo: **24473**
Client ID: **CCV**	Batch ID: **11029**	TestNo: **SW 8082A**	**SW3580A**	Analysis Date: **3/31/2016**	SeqNo: **330454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016/1260	9.38	1.00	10.00	0	93.8	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

Specialty Analytical

15-Apr-16

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **8260_S**

Sample ID: **CCV MSVWS-2050** SampType: **CCV** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **24485**
Client ID: **CCV** Batch ID: **11035** TestNo: **SW8260B** **5030** Analysis Date: **3/31/2016** SeqNo: **330455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	76.9	10.0	80.00	0	96.2	80	120				
1,2-Dichloropropane	71.7	10.0	80.00	0	89.6	80	120				
Chloroform	80.8	10.0	80.00	0	101	80	120				
Ethylbenzene	78.5	10.0	80.00	0	98.2	80	120				
Toluene	73.0	10.0	80.00	0	91.2	80	120				
Vinyl chloride	72.9	10.0	80.00	0	91.1	80	120				

Sample ID: **LCS MSVWS-2051** SampType: **LCS** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **24485**
Client ID: **LCSS** Batch ID: **11035** TestNo: **SW8260B** **5030** Analysis Date: **3/31/2016** SeqNo: **330456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	78.9	10.0	80.00	0	98.6	80	120				
Benzene	76.4	10.0	80.00	0	95.4	80	120				
Chlorobenzene	78.9	10.0	80.00	0	98.6	80	120				
Toluene	73.3	10.0	80.00	0	91.6	80	120				
Trichloroethene	84.4	10.0	80.00	0	106	80	120				

Sample ID: **MB** SampType: **MBLK** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **24485**
Client ID: **PBS** Batch ID: **11035** TestNo: **SW8260B** **5030** Analysis Date: **3/31/2016** SeqNo: **330459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	10.0									
1,1,1-Trichloroethane	ND	10.0									

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

Specialty Analytical

15-Apr-16

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **8260_S**

Sample ID: **MB** SampType: **MBLK** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **24485**
Client ID: **PBS** Batch ID: **11035** TestNo: **SW8260B** **5030** Analysis Date: **3/31/2016** SeqNo: **330459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	10.0									
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	10.0									
1,1,2-Trichloroethane	ND	10.0									
1,1-Dichloroethane	ND	10.0									
1,1-Dichloroethene	ND	10.0									
1,1-Dichloropropene	ND	10.0									
1,2,3-Trichlorobenzene	ND	10.0									
1,2,3-Trichloropropane	ND	10.0									
1,2,4-Trichlorobenzene	ND	10.0									
1,2,4-Trimethylbenzene	ND	10.0									
1,2-Dibromo-3-chloropropane	ND	10.0									
1,2-Dibromoethane	ND	10.0									
1,2-Dichlorobenzene	ND	10.0									
1,2-Dichloroethane	ND	10.0									
1,2-Dichloropropane	ND	10.0									
1,3,5-Trimethylbenzene	ND	10.0									
1,3-Dichlorobenzene	ND	10.0									
1,3-Dichloropropane	ND	10.0									
1,4-Dichlorobenzene	ND	10.0									
2,2-Dichloropropane	ND	10.0									
2-Butanone	ND	20.0									
2-Chlorotoluene	ND	10.0									
2-Hexanone	ND	20.0									
4-Chlorotoluene	ND	10.0									
4-Isopropyltoluene	ND	10.0									
4-Methyl-2-pentanone	ND	20.0									

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

Specialty Analytical

15-Apr-16

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **8260_S**

Sample ID: **MB** SampType: **MBLK** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **24485**
Client ID: **PBS** Batch ID: **11035** TestNo: **SW8260B** **5030** Analysis Date: **3/31/2016** SeqNo: **330459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetone	ND	50.0									
Benzene	ND	10.0									
Bromobenzene	ND	10.0									
Bromochloromethane	ND	10.0									
Bromodichloromethane	ND	10.0									
Bromoform	ND	10.0									
Bromomethane	ND	10.0									
Carbon disulfide	ND	10.0									
Carbon tetrachloride	ND	10.0									
Chlorobenzene	ND	10.0									
Chloroethane	ND	10.0									
Chloroform	ND	10.0									
Chloromethane	ND	10.0									
cis-1,2-Dichloroethene	ND	10.0									
cis-1,3-Dichloropropene	ND	10.0									
Dibromochloromethane	ND	10.0									
Dibromomethane	ND	10.0									
Dichlorodifluoromethane	ND	10.0									
Ethylbenzene	ND	10.0									
Hexachlorobutadiene	ND	10.0									
Isopropylbenzene	ND	10.0									
m,p-Xylene	ND	20.0									
Methyl tert-butyl ether	ND	10.0									
Methylene chloride	ND	50.0									
Naphthalene	ND	10.0									
n-Butylbenzene	ND	10.0									

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted reco

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **8260_S**

Sample ID: **MB** SampType: **MBLK** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **24485**
Client ID: **PBS** Batch ID: **11035** TestNo: **SW8260B** **5030** Analysis Date: **3/31/2016** SeqNo: **330459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
n-Propylbenzene	ND	10.0									
o-Xylene	ND	10.0									
sec-Butylbenzene	ND	10.0									
Styrene	ND	10.0									
tert-Butylbenzene	ND	10.0									
Tetrachloroethene	ND	10.0									
Toluene	ND	10.0									
trans-1,2-Dichloroethene	ND	10.0									
trans-1,3-Dichloropropene	ND	10.0									
Trichloroethene	ND	10.0									
Trichlorofluoromethane	ND	10.0									
Vinyl chloride	ND	10.0									
Surr: 1,2-Dichloroethane-d4	100		100.0		100	71.5	112				
Surr: 4-Bromofluorobenzene	96.4		100.0		96.4	75.7	122				
Surr: Dibromofluoromethane	98.6		100.0		98.6	64.3	124				
Surr: Toluene-d8	96.7		100.0		96.7	74.9	120				

Sample ID: **A1603286-001AMS** SampType: **MS** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **24485**
Client ID: **ZZZZZZ** Batch ID: **11035** TestNo: **SW8260B** **5030** Analysis Date: **3/31/2016** SeqNo: **330628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	40.4	10.0	40.00	0	101	46.6	147				
Benzene	38.8	10.0	40.00	0	97.0	65.2	121				
Chlorobenzene	40.4	10.0	40.00	0	101	40.9	122				

QC SUMMARY REPORT

WO#: **1603278**

Specialty Analytical

15-Apr-16

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **8260_S**

Sample ID: **A1603286-001AMS** SampType: **MS** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **24485**
Client ID: **ZZZZZZ** Batch ID: **11035** TestNo: **SW8260B** **5030** Analysis Date: **3/31/2016** SeqNo: **330628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	38.2	10.0	40.00	0	95.4	52.1	127				
Trichloroethene	41.7	10.0	40.00	0	104	57.6	122				

Sample ID: **A1603286-001AMSD** SampType: **MSD** TestCode: **8260_S** Units: **µg/Kg** Prep Date: RunNo: **24485**
Client ID: **ZZZZZZ** Batch ID: **11035** TestNo: **SW8260B** **5030** Analysis Date: **3/31/2016** SeqNo: **330629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	40.9	10.0	40.00	0	102	46.6	147	40.36	1.40	20	
Benzene	39.5	10.0	40.00	0	98.8	65.2	121	38.79	1.86	20	
Chlorobenzene	40.9	10.0	40.00	0	102	40.9	122	40.40	1.16	20	
Toluene	38.5	10.0	40.00	0	96.4	52.1	127	38.15	1.02	20	
Trichloroethene	42.2	10.0	40.00	0	106	57.6	122	41.72	1.19	20	

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

Specialty Analytical

15-Apr-16

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **8270LL_S**

Sample ID: **CCV MSSWS-1384** SampType: **CCV** TestCode: **8270LL_S** Units: **µg/Kg** Prep Date: RunNo: **24475**
Client ID: **CCV** Batch ID: **11028** TestNo: **SW8270D** **SW3580A** Analysis Date: **3/30/2016** SeqNo: **330323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	34.5	1.00	40.00	0	86.2	80	120				
2,4,6-Trichlorophenol	41.9	1.00	40.00	0	105	80	120				
2,4-Dichlorophenol	42.5	1.00	40.00	0	106	80	120				
2-Nitrophenol	39.5	5.00	40.00	0	98.7	80	120				
4-Chloro-3-methylphenol	46.5	1.00	40.00	0	116	80	120				
Acenaphthene	42.0	1.00	40.00	0	105	80	120				
Benzo(a)pyrene	46.2	1.00	40.00	0	116	80	120				
Di-n-octyl phthalate	43.4	1.00	40.00	0	108	80	120				
Fluoranthene	41.3	1.00	40.00	0	103	80	120				
Hexachlorobutadiene	32.0	1.00	40.00	0	80.1	80	120				
N-Nitrosodiphenylamine	38.3	1.00	40.00	0	95.7	80	120				
Pentachlorophenol	34.8	5.00	40.00	0	87.1	80	120				
Phenol	45.2	1.00	40.00	0	113	80	120				

Sample ID: **MB-11028** SampType: **MBLK** TestCode: **8270LL_S** Units: **µg/Kg** Prep Date: **3/30/2016** RunNo: **24475**
Client ID: **PBS** Batch ID: **11028** TestNo: **SW8270D** **SW3580A** Analysis Date: **3/30/2016** SeqNo: **330324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	ND	10000									
1,2-Dichlorobenzene	ND	10000									
1,2-Diphenylhydrazine	ND	50000									
1,3-Dichlorobenzene	ND	10000									
1,4-Dichlorobenzene	ND	10000									
1-Methylnaphthalene	ND	10000									

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

Specialty Analytical

15-Apr-16

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **8270LL_S**

Sample ID: **MB-11028** SampType: **MBLK** TestCode: **8270LL_S** Units: **µg/Kg** Prep Date: **3/30/2016** RunNo: **24475**
Client ID: **PBS** Batch ID: **11028** TestNo: **SW8270D** **SW3580A** Analysis Date: **3/30/2016** SeqNo: **330324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,4,5-Trichlorophenol	ND	10000									
2,4,6-Trichlorophenol	ND	10000									
2,4-Dichlorophenol	ND	10000									
2,4-Dimethylphenol	ND	10000									
2,4-Dinitrophenol	ND	100000									
2,4-Dinitrotoluene	ND	10000									
2,6-Dinitrotoluene	ND	10000									
2-Chloronaphthalene	ND	10000									
2-Chlorophenol	ND	10000									
2-Methylnaphthalene	ND	10000									
2-Methylphenol	ND	10000									
2-Nitroaniline	ND	10000									
2-Nitrophenol	ND	50000									
3-&4-Methylphenol	ND	10000									
3,3-Dichlorobenzidine	ND	50000									
3-Nitroaniline	ND	10000									
4,6-Dinitro-2-methylphenol	ND	50000									
4-Bromophenyl phenyl ether	ND	10000									
4-Chloro-3-methylphenol	ND	10000									
4-Chloroaniline	ND	10000									
4-Chlorophenyl phenyl ether	ND	10000									
4-Nitroaniline	ND	10000									
4-Nitrophenol	ND	50000									
Acenaphthene	ND	10000									
Acenaphthylene	ND	10000									
Aniline	ND	10000									

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

15-Apr-16

Specialty Analytical

Client: Port of Longview

Project: Berth 1 Pipe **TestCode:** **8270LL_S**

Sample ID: **MB-11028** SampType: **MBLK** TestCode: **8270LL_S** Units: **µg/Kg** Prep Date: **3/30/2016** RunNo: **24475**

Client ID: **PBS** Batch ID: **11028** TestNo: **SW8270D** **SW3580A** Analysis Date: **3/30/2016** SeqNo: **330324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Anthracene	ND	10000									
Benz(a)anthracene	ND	10000									
Benzidine	ND	50000									
Benzo(a)pyrene	ND	10000									
Benzo(b)fluoranthene	ND	10000									
Benzo(g,h,i)perylene	ND	10000									
Benzo(k)fluoranthene	ND	10000									
Benzoic Acid	ND	200000									
Benzyl Alcohol	ND	10000									
Benzyl butyl phthalate	ND	10000									
Bis(2-chloroethoxy)methane	ND	10000									
Bis(2-chloroethyl)ether	ND	10000									
Bis(2-chloroisopropyl)ether	ND	10000									
Bis(2-ethylhexyl)phthalate	ND	10000									
Carbazole	ND	10000									
Chrysene	ND	10000									
Dibenz(a,h)anthracene	ND	10000									
Dibenzofuran	ND	10000									
Diethyl phthalate	ND	10000									
Dimethyl phthalate	ND	10000									
Di-n-butyl phthalate	ND	50000									
Di-n-octyl phthalate	ND	10000									
Fluoranthene	ND	10000									
Fluorene	ND	10000									
Hexachlorobenzene	ND	10000									
Hexachlorobutadiene	ND	10000									

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted reco

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **8270LL_S**

Sample ID: **MB-11028** SampType: **MBLK** TestCode: **8270LL_S** Units: **µg/Kg** Prep Date: **3/30/2016** RunNo: **24475**
Client ID: **PBS** Batch ID: **11028** TestNo: **SW8270D** **SW3580A** Analysis Date: **3/30/2016** SeqNo: **330324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexachlorocyclopentadiene	ND	10000									
Hexachloroethane	ND	10000									
Indeno(1,2,3-cd)pyrene	ND	10000									
Isophorone	ND	10000									
Naphthalene	ND	10000									
Nitrobenzene	ND	10000									
N-Nitrosodimethylamine	ND	10000									
N-Nitrosodi-n-propylamine	ND	10000									
N-Nitrosodiphenylamine	ND	10000									
Pentachlorophenol	ND	50000									
Phenanthrene	ND	10000									
Phenol	ND	10000									
Pyrene	ND	10000									
Pyridine	ND	50000									
Surr: 2,4,6-Tribromophenol	863000		1000000		86.3	57.8	119				
Surr: 2-Fluorobiphenyl	935000		1000000		93.5	52.6	113.2				
Surr: 2-Fluorophenol	840000		1000000		84.0	40.7	111				
Surr: 4-Terphenyl-d14	1070000		1000000		107	49.8	118				
Surr: Nitrobenzene-d5	993000		1000000		99.3	44.8	103				
Surr: Phenol-d6	793000		1000000		79.3	47.5	117				

QC SUMMARY REPORT

WO#: **1603278**

Specialty Analytical

15-Apr-16

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **HG_CTS**

Sample ID: **LCS-11044**	SampType: **LCS**	TestCode: **HG_CTS**	Units: **mg/Kg**	Prep Date: **4/1/2016**	RunNo: **24500**
Client ID: **LCSS**	Batch ID: **11044**	TestNo: **SW 7471B**	**SW 7471B**	Analysis Date: **4/1/2016**	SeqNo: **330548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.408	0.0167	0.4000	0	102	80	120				

Sample ID: **MB-11044**	SampType: **MBLK**	TestCode: **HG_CTS**	Units: **mg/Kg**	Prep Date: **4/1/2016**	RunNo: **24500**
Client ID: **PBS**	Batch ID: **11044**	TestNo: **SW 7471B**	**SW 7471B**	Analysis Date: **4/1/2016**	SeqNo: **330549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0167									

Sample ID: **1603278-001DDUP**	SampType: **DUP**	TestCode: **HG_CTS**	Units: **mg/Kg**	Prep Date: **4/1/2016**	RunNo: **24500**
Client ID: **B**	Batch ID: **11044**	TestNo: **SW 7471B**	**SW 7471B**	Analysis Date: **4/1/2016**	SeqNo: **330551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0153						0	0	20	RF

Sample ID: **1603278-001DMS**	SampType: **MS**	TestCode: **HG_CTS**	Units: **mg/Kg**	Prep Date: **4/1/2016**	RunNo: **24500**
Client ID: **B**	Batch ID: **11044**	TestNo: **SW 7471B**	**SW 7471B**	Analysis Date: **4/1/2016**	SeqNo: **330552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.282	0.0158	0.3794	0	74.2	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

Specialty Analytical

15-Apr-16

Client: Port of Longview
Project: Berth 1 Pipe **TestCode:** **HG_CTS**

Sample ID: **1603278-001DMSD**	SampType: **MSD**	TestCode: **HG_CTS**	Units: **mg/Kg**	Prep Date: **4/1/2016**	RunNo: **24500**
Client ID: **B**	Batch ID: **11044**	TestNo: **SW 7471B**	**SW 7471B**	Analysis Date: **4/1/2016**	SeqNo: **330553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.179	0.0142	0.3405	0	52.6	75	125	0.2815	44.5	20	SR

Sample ID: **CCV**	SampType: **CCV**	TestCode: **HG_CTS**	Units: **mg/Kg**	Prep Date:	RunNo: **24500**
Client ID: **CCV**	Batch ID: **11044**	TestNo: **SW 7471B**	**SW 7471B**	Analysis Date: **4/1/2016**	SeqNo: **330556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.376	0.0167	0.4000	0	93.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted reco

QC SUMMARY REPORT

WO#: **1603278**

15-Apr-16

Specialty Analytical

Client: Port of Longview

Project: Berth 1 Pipe **TestCode:** **IGN_S**

Sample ID: **LCS-R24489** SampType: **LCS** TestCode: **IGN_S** Units: **°F** Prep Date: RunNo: **24489**

Client ID: **LCSS** Batch ID: **R24489** TestNo: **SW1010** Analysis Date: **3/31/2016** SeqNo: **330473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ignitability	81.0	0	81.00	0	100	98.74	103.76				

Sample ID: **1603278-002CDUP** SampType: **DUP** TestCode: **IGN_S** Units: **°F** Prep Date: RunNo: **24489**

Client ID: **D** Batch ID: **R24489** TestNo: **SW1010** Analysis Date: **3/31/2016** SeqNo: **330476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ignitability	>140	0						0	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted reco

KEY TO FLAGS

Rev. May 12, 2010

A	This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
A1	This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
A2	This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
A3	The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
A4	The product appears to be aged or degraded diesel.
B	The blank exhibited a positive result great than the reporting limit for this compound.
CN	See Case Narrative.
D	Result is based from a dilution.
E	Result exceeds the calibration range for this compound. The result should be considered as estimate.
F	The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
G	Result may be biased high due to biogenic interferences. Clean up is recommended.
H	Sample was analyzed outside recommended holding time.
HT	At clients request, samples was analyzed outside of recommended holding time.
J	The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
K	Diesel result is biased high due to amount of Oil contained in the sample.
L	Diesel result is biased high due to amount of Gasoline contained in the sample.
M	Oil result is biased high due to amount of Diesel contained in the sample.
MC	Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
MI	Result is outside control limits due to matrix interference.
MSA	Value determined by Method of Standard Addition.
O	Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
Q	Detection levels elevated due to sample matrix.
R	RPD control limits were exceeded.
RF	Duplicate failed due to result being at or near the method-reporting limit.
RP	Matrix spike values exceed established QC limits; post digestion spike is in control.
S	Recovery is outside control limits.
SC	Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
*	The result for this parameter was greater that the maximum contaminant level of the TCLP regulatory limit.

CHAIN OF CUSTODY RECORD

Specialty Analytical
11711 SE Capps Road
Clackamas, OR 97015
Phone: 503-607-1331
Fax: 503-607-1336

Contact Person/Project Manager: Sean Kelly
Company: Port of Longview
Address: 10 Port Way, Longview, WA 98632
Phone: 360-703-0216 Fax:
Project No.: Project Name: Berth 1 Pipe
Project Site Location OR: WA: S Other:
Invoice To: Port of Longview P.O. No.:

Collected By:
Signature:
Printed: Sean Kelly
Signature:
Printed: Josh Johnson

Turn Around Time
- [x] Normal 5-7 Business Days
- [ ] Rush _____
  Specify

Rush Analyses Must Be Scheduled With The Lab In Advance

For Laboratory Use
Lab Job No. 1603278
Shipped Via Specialty
Air Bill No.
Temperature On Receipt 4 °C
Specialty Analytical Containers? ☐/☐
Specialty Analytical Trip Blanks? ☐/☐

Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses: Semivolatile Organics, 8270	Volatile Organics, 8260	PCBs, Aroclors	Metals, Total: As, Ba, Cd	---Cr, Pb, Ni, Ag, Se, Zn, Hg	TOX 9020	Flashpoint	Fingerprinting			Comments	Lab I.D.
3/28/16		B	liq	10		✓	✓	✓	✓	✓	✓	✓				
3/25/16		D	liq	10	✓	✓	✓	✓	✓	✓	✓	✓				
3/29/16		E	liq	2	✓	✓	✓	✓	✓	✓	✓	✓				

Relinquished By:	Date	Time	Received By:	Relinquished By:	Date	Time
Company: Port of LV	3/29/16	11⁰⁰ AM	Company: AI SA 3/29/16 1125	Company: AI SA	3/29/16	1346

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.
Samples held beyond 60 days subject to storage fee(s)

Received For Lab By: Nikki Rapper Date 3/29/16 Time 1346

Copies: White-Original Yellow-Project File Pink-Customer Copy

SPECTRA Laboratories
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

04/04/2016

Specialty Analytical
11711 SE Capps Rd
Clackamas, OR 97015
Attn: Nikki Bippes

P.O.#: COD
Project: 1603278
Sample Matrix: Oil
Date Sampled: 03/28/2016
Date Received: 03/31/2016
Spectra Project: 2016030843

Client ID	Spectra #	Analyte	Result	Units	Method
B	1	Total Halogens	23	ppm	SW846 9076
D	2	Total Halogens	18	ppm	SW846 9076
E	3	Total Halogens	45	ppm	SW846 9076

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager
a7/krd

SPECTRA Laboratories
2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

04/04/16

Specialty Analytical
11711 SE Capps Rd
Clackamas, OR 97015

Method: SW846 9076
Sample Matrix: Oil/Water
Units: ppm
Spectra Project: 2016030843
Applies to Spectra #'s: 1, 2, 3

TOTAL HALOGENS QUALITY CONTROL RESULTS

METHOD BLANK

Date Analyzed: 04/04/16
Untis: ppm

Total Halogens (TX)	< 5.0

INITIAL CHECK STANDARD RESULT

Date Analyzed: 04/04/16
Untis: ppm

	Known Value	Measured Value	% Recovered
Total Halogens (TX)	100	113.9	113.9

SPECTRA LABORATORIES

Steve Hibbs, Laboratory Manager

CHAIN OF CUSTODY RECORD 1016030843

Page ___ of ___

Specialty Analytical
11711 SE Capps Road
Clackamas, OR 97015
Phone: 503-607-1331
Fax: 503-607-1336

Contact Person/Project Manager: Nikki Buppes
Company:
Address:
Phone: Fax:
Project No. 1603278 Project Name: Port of Longview
Project Site Location OR ___ WA ___ Other ___
Invoice To: P.O. No.:

Collected By:
Signature:
Printed:
Signature:
Printed:

Turn Around Time
☒ Normal 5-7 Business Days
☐ Rush ___
Specify
Rush Analyses Must Be Scheduled With The Lab In Advance

For Laboratory Use
Lab Job No.
Shipped Via
Air Bill No.
Temperature On Receipt ___ °C
Specialty Analytical Containers? Y / N
Specialty Analytical Trip Blanks? Y / N

Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses: Total Halogens	Comments	Lab I.D.
3/28/16		B	WD	1	X		
3/25/16		D	WD	1	X		
3/29/16		E	Solid	1	X		

Relinquished By:	Date	Time	Received By:	Relinquished By:	Date	Time
Company: Specialty	3/29/16	1400	Company: Spectra	Company:		

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.
Samples held beyond 60 days subject to storage fee(s)

Received For Lab By: | Date | Time

Port of Longview
TPH Site

Interim Action Completion Report

Appendix B
Weekly Reports and
Field Notes

Week No.: 1	4/8/2019 to 4/12/2019	**Date:**	12 April 2019
Project Name:	POL IAWP TPH SITE FSID 42918181	**Contact:**	Josh Johnson, 360 703-0250
Location:	Port of Longview, 10 Port Way, 98632	**Director:**	L. Hendriksen, 360 703-0207

ACTIVITIES THIS WEEK

- Boomed beneath main hole [the only one over water (both were contained with poly in advance)].
- Opened both holes in dock, removed stringers and one pile cap. Placed Ecology blocks around holes and positioned removable covering.
- Constructed containments under Line E.
- Removed worst rust spots on pipe (to facilitate nibbler and poly wrapping).
- Prepared (vacuumed) scaffolding and walkway surfaces for coverage with sorbent rolls.
- Installed and operated stormwater collection system.
- Coordination meeting with NRC.
- Installed fire hose at valve houses and additional extinguishers (in lieu of sprinklers when working).
- Finished ordering BMPs/materials and revising costs.
- Project coordination meetings (Planning, Operations kickoff, and Health / Safety accommodations).
- Bought an intermodal container (and prepared its utilities), to be used for decon areas.

ACTIVITIES NEXT WEEK

- Maintain boom beneath main hole.
- Continue operating stormwater collection system.
- Install oil sorbent sheeting on all-below dock walkways and scaffolding.
- Finish preparing decon area (including eye wash).
- Update SOP's (incl. safety forms and drawings).
- Practice Nibbler in Maintenance Shop (incl. with generator).
- Install signage (e.g. access restrictions SW & NE stairs, project theme: 'No injuries. No drips." etc...).
- Prepare boom for deployment Friday, April 19th. Possible weekend maintenance of boom.
- Pre-job meeting Friday, April 19, with Marine Chemist, NRC, Floyd|Snider, and Port.
- Receive drop boxes, prepare TS1 for their storage, and arrange staged BMPs / supplies there.

PHOTOS

SOME BMPS (PADS & ROLLS) STAGED IN TS1

STORMWATER COLLECTION SYSTEM (W. OF TS2)

EAST (UPSTREAM) END OF PROJECT, AT STAIRWELL, SE CORNER OF TS2, LOOKING WEST. NOTE COMPOST WATTLE (TO DIVERT ANY EXCESS RUNOFF), SWEEPER, AND MAIN (CENTER) ACCESS HOLE IN BACKGROUND.

WEST ACCESS HOLE LOOKING S/SE. NOTE COMPOST WATTLE AND COVER. NOT SHOWN IS CLOSED-CELL BACKER-ROD UNDER BLOCKS.

Week No.: 2	4/15/2019 to 4/21/2019	**Date:**	19 April 2019
Project Name:	POL IAWP TPH SITE FSID 42918181	**Contact:**	Josh Johnson, 360 703-0250
Location:	Port of Longview, 10 Port Way, 98632	**Director:**	L. Hendriksen, 360 703-0207

ACTIVITIES THIS WEEK

- Continued operating stormwater collection system.
- Installed sorbent mat surfacing BMPs on below-dock scaffolding and walkways.
- Finished preparing decon facility (including eye wash and lighting).
- Update SOP's (incl. safety forms and drawings).
- Practice Nibbler in Maintenance Shop (incl. with generator).
- Install signage (e.g. access restrictions SW & NE stairs, project theme: 'No injuries. No drips." etc...).
- Continue receiving and organizing BMPs / supplies in TS1.
- Receive drop boxes Wednesday, April 17th and double-contain them inside TS1. Recycling included.
- Boom deployment Friday, April 19th (absorbent boom inside river boom).
- Pre-job meeting Friday, April 19th, with Marine Chemist, NRC and Port.
- Marine Chemist sign off of project BMPs for working conditions, on-call if needed.
- Weekend monitoring of boom.

ACTIVITIES NEXT WEEK

- Continue monitoring boom and stormwater systems.
- Begin shutting-off sprinkler system during work day (hose and extinguishers already in place).
- Demolition: With rovers and watchmen along system, begin Nibbling troughs, then seal with wide-width poly tape (or equivalent). Start at project center and work west (downstream), in this order: Lines B (yellow), C (silver), A (green), and D (orange). Then, return to center and work east (upstream). If within the week, the main east-west lengths have been completed, move to the western extents (under B1) that run north-south, and consult Engineer.
- NRC arrives with vacuum truck April 27, unless otherwise notified.

PHOTOS

INSTALLATION OF NEW PIG 'HAMO' OIL-ONLY ABSORBENT MAT SURFACING UNDER DOCK.	BOOM INSTALLATION

DECON TRAINER AT STAIRWELL, SE CORNER OF TS2.	SIGN IN STAIRWELL, PROJECT THEME: "SAFETY FIRST. NO DRIPS."

Week No.: 3	4/22/2019 to 4/28/2019	**Date:**	26 April 2019
Project Name:	POL IAWP TPH SITE FSID 42918181	**Contact:**	Josh Johnson, 360 703-0250
Location:	Port of Longview, 10 Port Way, 98632	**Director:**	L. Hendriksen, 360 703-0207

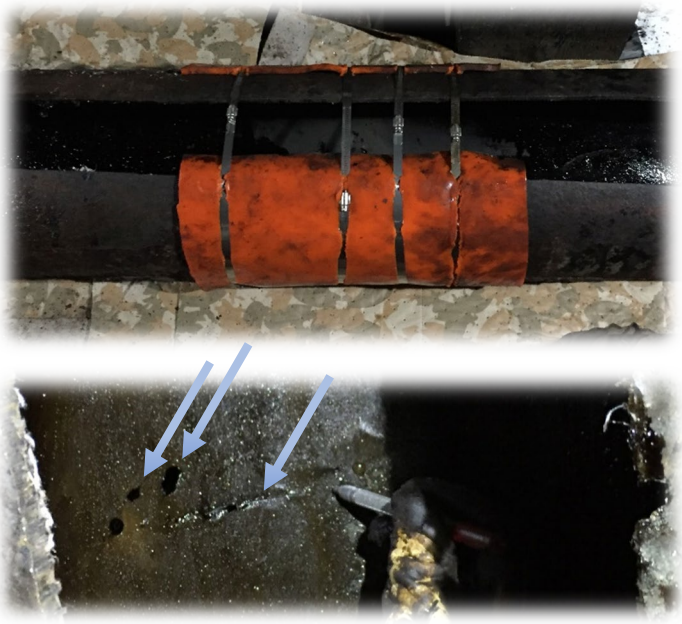
ACTIVITIES THIS WEEK

- Began 6-10's for demo phase of project.
- Stormwater collection system operation and maintenance.
- Boom monitoring and maintenance.
- Troughed, evacuated, triple-cleaned, sectioned, double-wrapped, removed, and recycled ~1,440' or almost 60% of system, recovering about 650-gallons of oil – injury and spill free.
- Two leaks, no spills (Monday). Leaks promptly discovered on Line D (Orange, the 12" Line), approximately 70' west of the main (center) access hole, as part of rover watchman BMP. It was contained by pre-deployed BMPs and addressed immediately.
- Based on the Day 1 leaks and learning just how deteriorated some pipe sections have become, we decided to keep NRC on-site and evacuate the pipes more aggressively (i.e. nearly-continuously, beginning just as soon as pipe contents become accessible).
- Began using two 3" hoses – one active and the other being cleaned (of oil and nibblets).
- Send NRC to standby on Saturday
- Ecology inspections Tuesday (waste water) and Friday (IAWP). L&I inspection Thursday.

ACTIVITIES NEXT WEEK

- Continue monitoring boom and stormwater systems.
- Mob to West end. Re-locate trolley system there. Cover surfaces with Ham-O oil mat. Bolster other BMPs and access. Drill 3" holes top-of-pipe on low-points and after valves, etc.
- NRC returning Tuesday.
- Evacuate oil from top holes (to the degree possible) prior to nibbling.
- Boom around cantilevered platform at SW extent of project.
- Begin demo operations from West access hole, then over bulkhead (as shown on the IAWP plan, SW corner of containment).

PHOTOS



FIRST LEAK. LINE D, 75' WEST OF CENTER. NO SPILLS	SECOND LEAK. LINE D, 60' WEST OF CENTER. NO SPILLS. NOTE PIPE PERFORATIONS AND CRACK.

TROUGHED PIPE, W/ OIL.	VACUUMING PIPE.	SURFACE OPERATIONS.

Week No.: 4	4/29/2019 to 5/4/2019	**Date:**	3 May 2019
Project Name:	POL IAWP TPH SITE FSID 42918181	**Contact:**	Josh Johnson, 360 703-0250
Location:	Port of Longview, 10 Port Way, 98632	**Director:**	L. Hendriksen, 360 703-0207

ACTIVITIES THIS WEEK

- Stormwater collection system operation and maintenance.
- Boom monitoring and maintenance.
- Mob'd to West access hole, re-distributed BMPs, tools, etc…
- Built additional scaffolding under west-end pipe (additional access, but primarily for spill control precautions). Lined new surfaces with 'Ham-O' oil-only mat.
- Drilled holes in top-of-pipe at key locations.
- Brought NRC back from standby Tuesday 30 April, and vacuumed ~250-gal of oil prior to Nibbling.
- Added boom in river under cantilevered platform ("balcony") at SW-end of project.
- Three Port Commissioner tours: one Tuesday and two Wednesday.
- Project delayed Thursday half-day to provide support for Operations at WH14.
- Finished demo of West-end Friday. Troughed, evacuated, triple-cleaned, sectioned, double-wrapped, removed, and recycled 600,' or almost 25% of system. Recovered a total of 925-gallons of oil to date – injury and spill free. [Note, some pipe sections, such as Line A (Green) that were bone-dry, were not troughed.]
- Friday, at East-end, drilled 3" holes top-of-pipe at low-points, elbows, etc. and began pre-vacuuming.
- Saturday, mob'd to East-end, and began scaffolding which will allow containment and safe pipe removal. Bolstered BMPs, housekeeping.
- Status: 90% done by oil, 82% done by pipe, 54% done by hours.

ACTIVITIES NEXT WEEK

- Continue monitoring boom and stormwater systems.
- Weld 90^{O} extend-a handle on a half-moon hoe.
- Begin East-end operations, removing 8" Lines D (orange), B (Yellow), A (Green), and C (Silver).
- Ecology visit Wednesday, May 8^{th}.
- Once all 8" lines are removed, re-fresh BMPs, re-order project site, team meeting, and begin Line E.
- Line E vacuum trial (prior to troughing): Short 2'x2" stinger; shortest possible length of spare 3" hose (fully-cleaned); begin riverside of flange with all access holes firmly taped shut, per NRC.
- Line E handwork: Double check containments (clean, dry, Ham-O'd). Set-up lined trays, buckets, lids, and scoops. Set-out Tyvek suits, pads, wipes. Stage NRC drop box. Nibble one ~10'x4" trough starting at empty end (landward of walkway). Hand-scoop bunker into 5-gallon buckets. As levels drop, trough another ~10.' Do not reach-in pipe w/o heavy glove. Blind on remaining flange shall not be trusted - immediately plug, cap, and consult engineer for its encasement.

PHOTOS

DOUBLE SCAFFOLDING IN KEY AREAS	PRE-VACUUMING NEAR BULKHEAD

LIFTING PIPE NEAR BULLRAIL	BOOMING “BALCONY” UNDER BULLRAIL

Week No.: 5 5/6/2019 to 5/11/2019	**Date:** 10 May 2019
Project Name: POL IAWP TPH SITE FSID 42918181	**Contact:** Josh Johnson, 360 703-0250
Location: Port of Longview, 10 Port Way, 98632	**Director:** L. Hendriksen, 360 703-0207

ACTIVITIES THIS WEEK

- Stormwater collection system operation and maintenance.
- Boom monitoring and maintenance (required more vigilance as river levels dropped).
- [Line E vacuum trial (late on 3 May) was unsuccessful; NRC placed on indefinite standby upon completion of all 8" lines (about noon Saturday 4 May].
- Monday: Crew switched to 5-8's.
- Monday: Environmental bench trial for thinning bunker -C as a second option for removal, if needed.
- Tuesday: Completed removal of East-end 8" Lines D (orange), B (Yellow), A (Green), and C (Silver).
    - **This concludes the removal of pipelines A – D.**
- Wednesday: Prepared the Line E area for handwork (staged tools and supplies, reviewed BMPs). General housekeeping of the work site. Some scaffolding removal on West-end and fortifying sections that will remain. Removed preventative boom under the Day One leaks and the additional boom under the cantilevered platform ("balcony") at SW-end of project.
- Ecology visit Wednesday, May 8th.
- Thursday: Line E handwork began – Double checked containments (clean, dry, Ham-O'd). Set-up lined trays, buckets, lids, and scoops. Set-out Tyvek suits, pads, wipes. Staged NRC drop box. Nibbled one ~10'x6" trough starting at empty end (landward of walkway). Used the hoe tool to push bunker in trough to Port labor, and then it was scooped it into 5-gallon bucket. The buckets are also wrapped in tape to keep clean. This action continued until levels dropped and then Line 'E' was troughed another ~10.' Buckets were capped and bagged. Blind on remaining flange was not trusted.
- Friday: Line 'E' removed by noon. By day's end, all metal recycled, and 24-buckets of product disposed of in NRC's drop box. Line 'E's flange found to be in pristine shape, with no trace of oil seeping by.
- Line 'E' was sealed with a Cherne aluminum, gasketed mechanical plug and a Fernco rubber plug.
    - **This concludes the removal of pipeline E.**
- Status: 100% done by oil, 100% done by pipe, 79% done by hours. *Phase IV c'est finis !*

ACTIVITIES NEXT WEEK

- Continue monitoring boom and stormwater systems until dock deck replaced.
- Monday: PNW Metals to remove last box. NRC to remove its drop box and trailer.
- Monday: Clean-up. Removal of scaffolding. Ordering supplies for return / re-use.
- Begin Phase V, restoration of dock deck.

PHOTOS

RECYCLING	CLEANING	HAND-SCOOPING LINE 'E'

REMOVAL OF LINE 'E' END-SECTION	LINE 'E' TROUGHED	LINE 'E' REMOVED

Week No.: 6 5/13/2019 to 5/17/2019	**Date:** 17 May 2019
Project Name: POL IAWP TPH SITE FSID 42918181	**Contact:** Josh Johnson, 360 703-0250
Location: Port of Longview, 10 Port Way, 98632	**Director:** L. Hendriksen, 360 703-0207

ACTIVITIES THIS WEEK

- Stormwater collection system and boom monitoring and maintenance.
- Removal of scaffolding, BMPs, fire hose, etc.. About 90% complete with this and general clean-up.
- Dock deck restoration paused while pilebucks and operator dispatched to Berth 6.
- PNW trailers removed. Final count: Six trailers, totaling 44⅓-tons recycled.
- NRC trailer removed. Final reading 1,200-gallons vacuumed (incl. cleaning diesel).
- NRC box (waste-grease / garbage) on-site, in TS1, awaiting removal.

ACTIVITIES NEXT WEEK

- Continue monitoring boom and stormwater systems until dock deck replaced.
- Organize supplies for return / re-use.
- Remove decon trailer and Port-a-Potties.
- Restore dock deck. [Only upon completion, may boom and stormwater system be removed].

Week No.: 7 5/20/2019 to 5/24/2019	**Date:** 24 May 2019
Project Name: POL IAWP TPH SITE FSID 42918181	**Contact:** Josh Johnson, 360 703-0250
Location: Port of Longview, 10 Port Way, 98632	**Director:** L. Hendriksen, 360 703-0207

ACTIVITIES THIS WEEK

- Stormwater collection system and boom monitoring and maintenance.
- Dock deck at west access hole restored, ready for paving prep.
- NRC box (waste-grease / garbage) removed.
- General clean-up and removal of scaffolding, BMPs, fire hose, and Port-a-Potties.

ACTIVITIES NEXT WEEK

- Continue monitoring boom and stormwater systems until dock deck replaced.
- Organize supplies for return / re-use.
- Restore dock deck at main access hole.
- Only when both holes prepped for paving may boom and stormwater system be removed.
- General clean-up walk-through and removal of decon trailer.

Week No.: 8 5/28/2019 to 5/31/2019	**Date:** 31 May 2019
Project Name: POL IAWP TPH SITE FSID 42918181	**Contact:** Josh Johnson, 360 703-0250
Location: Port of Longview, 10 Port Way, 98632	**Director:** L. Hendriksen, 360 703-0207

ACTIVITIES THIS WEEK

- Dock deck at main access hole restored, ready for paving.
- Stormwater collection system taken offline.

PROJECT COMPLETE *!*

Pipe A - Green

no product

Pipe B - Yellow

2nd leak

WK of 3/21 developed leak again due to work in area - pipe section evacuated to buckets

looks like kerosene
buckets sample 3/28 - Specialty

Pipe C - Silver

1ST leak
sample 2/18 - ALS

Pipe D - Orange

sample 3/25 - Specialty
Thick

Pipe E (no color)

sample 3/29 - jar + bag - Specialty
very thick

Pipe C

2/18/16 drew samples from buckets used to collect leak @ Berth 1
Samples taken to ALS 2/18/16
used bottles from ALS

Pipe B

3/28/16 Drew samples from buckets used to empty section of pipe B on 3/24/16 because that section developing leak and determined evacuating product from section was better than trying to stop leak - ie not confident the leak could be stopped.

Hole cut in top of pipe. Originally done for sampling - but pipe found to be developing leaks in section.

Product evacuated with pump that last pumped. Filled 4 buckets Mobilube HD Plus 80W-90, 85W-140

Made a composite samples of ↑ for analytical.

Used bottles provided by Specialty

Collected samples by dipping HDPE bottle below surface in buckets, allowing to fill / air evac like SW samples

Filled each jar for analytical ~1/4 w/ each bucket.

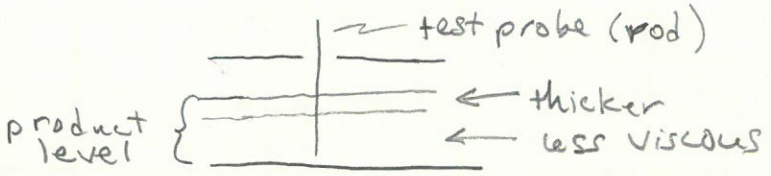
Pipe E

3/25/16

Product in pipe very viscous

Working way back from high end with drill holes probing depth + consistency

Trying to get to deeper product - ~~so~~ viscosity is less in deeper portion - "skin" on top



Too thick could not pump

Will have to "scoop" into bags, or something

3/28

Spoke w/ Nikki @ Specialty re sample to thick to get in preserved bottles.

Collect one wide mouth glass jar, ~250 ml. as full as possible / as little air as possible and one 1gt freeze bag.

3/29

Sample collected in jar + bag per ↑

Top "skin" with cutting fluid and metal shaving removed before sampling.

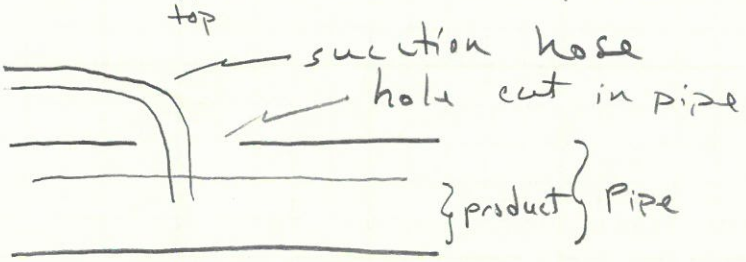
Scooped with gloved hand and spoon.

Pipe D

3/25/16

Used parastaltic pump to pump out product into sample bottles.

Suction hose to pump placed thru hole cut into pipe and end of hose placed under surface of product.



Note for Pipe D + E sample collection

Hole cut in pipe ~ 2½" dia by pile bucks. Had to cut larger hole in pipe D to allow for scooping

Cutting fluid used – Relton, Option 1 Cutting Fluid

Every attemp made to avoid getting cutting fluid and metal shavings in samples

- scooping shavings off surface
- syringing cutting fluid off surface
- removing thick surface in E
- suction tube placed below surface in D

Port of Longview
TPH Site

Interim Action Completion Report

Appendix C
Waste Disposal Manifests

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 1 (360) 835-7122	4. Waste Tracking Number 51519-1

5. Generator's Name and Mailing Address
Port of Longview

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: NRC Environmental — U.S. EPA ID Number: CAR 000030110

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address — U.S. EPA ID Number:
ORRCO
4150 N Suttle Rd
Portland, OR 97217

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Material not regulated by D.O.T. waste oil with diesel	01	TT	1200	G
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information
Truck # 2166
Trailer # 3444

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: [illegible] — Signature: [signature] — Month 5 Day 15 Year 2019

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Eduardo Mosqueda — Signature: [signature] — Month 5 Day 15 Year 19
Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name — Signature — Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	1	800-[illegible]	[illegible]

GENERATOR

5. Generator's Name and Mailing Address
[illegible]

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name
[illegible]

U.S. EPA ID Number
[illegible]

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address

U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Liquid Not Regulated by D.O.T	01	Can	20	Y	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
Truck # 6060
Box # 5381

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Sean Kelly
Signature:
Month: 5 Day: 22 Year: 19

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Eduardo Hernandez
Signature:
Month: 5 Day: 22 Year: 19

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name
Signature
Month Day Year

169-BLC-O 5 11977 (Rev. 9/09)

GENERATOR'S/SHIPPER'S INITIAL COPY

Port of Longview
TPH Site

Interim Action Completion Report

Appendix D
Marine Chemist Report and Certificate

From:	Craig Trettevik
To:	Josh Johnson
Cc:	Lisa Hendriksen; Sean Kelly; Sam Hammergren; Tom Colligan; Sound Testing Office
Subject:	Port of Longview TPH Site - Marine Chemist Conclusion
Date:	Friday, April 26, 2019 3:38:13 PM

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26 April 2019

Josh R Johnson, PE
Environmental Engineer
10 Port Way
Longview, WA 98632

Re: Port of Longview TPH Site

Dear Mr. Johnson:

All of your team has done such a great job that I do not anticipate the need for me to return to the site. I will, however, be available to answer by phone any questions you may have during the completion of the pipe removal.

I would like to complement everyone involved in the project. I have been impressed with how well everyone has worked together to solve the challenges presented by the difficult location of the pipes and their fragility.

The purchase of the nibblers and the idea of turning the pipes into troughs that can be cleaned out from the top has dramatically decreased the hazards on both the environmental and safety fronts. In other words, the fire and spill hazards have both been greatly reduced.

During my last inspection on 19 April 19, I left a hand-written certificate (47212). The certificate reports all the facts of my inspection but I would like to provide a "plain-English" version of my findings.

I found no atmospheric hazards at all in any of the pipes during this inspection. Only pipes E and C showed any airborne hydrocarbons at all. Those concentrations (12 ppm and 20 ppm respectively) are far below the levels required to present an atmospheric fire hazard.

Most petroleum products need a fuel-vapor-in-air concentration between 5,000 and 10,000 ppm in air to catch fire in the presence of a spark. That concentration is called the Lower Explosive Limit or LEL (aka Lower Flammable Limit). OSHA requires that the fuel-vapor-in-air concentration remain below 10% of the LEL. Clearly these pipes are well below 500 ppm.

In addition, the crew was kind enough to demonstrate the nibbler for me in the shop. Immediately after the demonstration, I was able to pick up the niblets with my bare hand and pinch them between my fingers until they cooled.

That would indicate the temperature of the niblets was considerably less than 130 degrees F.

They were well below the auto-ignition temperature of 480 degrees F that applies to petroleum products of the type in these pipes.

Again, I want to thank all of your team for the opportunity to work with you.

Should my presence be required again, I would be happy to come down. However, I think any questions can be answered over the phone at no charge.

Good luck with the project. I wish you all success and hope you come in under budget.

Sincerely,

Craig Trettevik, CMC 688
(206) 313-6933 Cell

Sound Testing, Inc.
PO Box 16204
Seattle, WA 98116
Office: 206-932-0206
Fax: 206-937-3848
E-mail: admin@soundtestinginc.com

SOUND TESTING, INC.
P.O. BOX 16204 SEATTLE, WA 98116
(206) 932-0206 FAX (206) 937-3848
WWW.SOUNDTESTINGINC.COM

MARINE CHEMIST CERTIFICATE

SERIAL Nº 47212

PORT OF LONGVIEW Survey Requested by	PORT OF LONGVIEW Vessel Owner or Agent	19 APRIL 19 Date
BERTH 1 & 2 Vessel	PIPELINES Type of Vessel	BERTH 1 & 2 Specific Location of Vessel
PETROLEUM PRODUCTS DIESEL AND BUNKER C Last Three (3) Loadings	VISUAL, O_2, LEL, CO, H_2S, TAC (CO = 1 ppm) Tests Performed	0931 Time Survey Completed

PIPE	COLOR	SIZE	PID (PPM)	H_2S (PPM)	CO (PPM)	O_2 (%)	LEL (%)
E	NO COLOR	8"	12	0	0	20.9	0
C	SILVER	8"	20	0	0	20.9	0
A	GREEN	8"	0	0	0	20.9	0
B	YELLOW	8"	0	0	0	20.9	0
D	~~RED~~ ORANGE (A)	12"	0	0	0	20.9	0

PLEASE NOTE: (1) ALL 5 PIPES ARE SAFE TO CUT OPEN WITH A NIBBLER,
(2) ONCE THE PIPE IS ~~REMOVED,~~ + (A) CUT OPEN ON TOP AND PRODUCT REMOVED AND PIPE WIPED DOWN, IT IS EXPECTED THE PIPES WILL BE SAFE TO CUT WITH ABRASIVE "SKINNY" WHEELS.
(3) THE MARINE CHEMIST WILL BE AVAILABLE TO ANSWER QUESTIONS BY PHONE AT ALL TIMES. (206) 313-6933

(A) CURRENTLY SAFE FOR DRILLS AND HOLE SAWS

In the event of changes adversely affecting conditions in the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist.

Qualifications: Manipulation of valves or devices tending to alter conditions in pipe lines or tanks noted above, unless specifically approved in this certificate, will require re-inspection and a new Certificate for spaces so affected. All piping, heating coils, pumps and floating roof gaskets attached to or contained within spaces listed above shall be considered "NOT SAFE" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS

(These detail the minimum conditions for Safe Entry and Hot Work.) The Marine Chemist may request additional measures if workplace conditions so dictate.

ATMOSPHERE SAFE FOR WORKERS means that in a space (a) the oxygen content is between 19.5% and 22% by volume, and (b) combustible gas is less than 10% of the Lower Explosive Limit, and (c) airborne toxic materials are within permissible concentrations as listed in OSHA's Subpart Z or in ACGIH's current list of Threshold Limit Values.

SAFE FOR HOT WORK means that (a) oxygen within the space is less than 22% by volume; and (b) the combustible gas is less than 10% of the Lower Explosive Limit; and (c) cargo residues within the space will not combust during hot work; and (d) pipes that can deliver hazardous materials to the workspace have been separated, blanked, or locked out, and nearby hazardous spaces have been evaluated and noted on the certificate.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot work is not permitted.

"The undersigned acknowledges receipt of this Certificate and understands conditions and limitations under which it was issued."

Signed _____ Name 19 APRIL 2019 Company PORT OF LONGVIEW Date

POSTING

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

19 APR 19 Signed Craig L. Tutterrow #688
Date Marine Chemist Certificate No.
CRAIG 206-313-6933