Port of Longview
TPH Site

Interim Action Work Plan

Prepared for

Port of Longview
PO Box 1258
Longview, Washington 98632

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20 YEARS FLOYD | SNIDER
strategy ▪ science ▪ engineering
Two Union Square • 601 Union Street • Suite 600
Seattle, Washington 98101 • tel: 206.292.2078

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List of Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
AST	Aboveground storage tank
BMP	Best management practices
Ecology	Washington State Department of Ecology
NRC	NRC Environmental Services
NWP	Nationwide Permit
Port	Port of Longview
SEPA	State Environmental Policy Act
TS	Transit Shed
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
WAC	Washington Administrative Code

1.0 Introduction

This Interim Action Work Plan describes how abandoned fuel pipelines lying under Berths 1 and 2 at the Port will be removed. Removal of the pipes as an interim action is necessitated by the deteriorating condition of the pipes.

In the 1920s, Standard Oil Company and Longview Fibre Company installed pipelines to transfer petroleum products from ships docked at the Port of Longview (Port) Berths 1 and 2 (berths; Figure 1.1). The exposed pipelines were supported by infrastructure under the berths and entered the uplands through the bulkhead and continued below ground from the berths to both the Standard Oil Company bulk tank farm, which still exists but is now owned by Wilson Oil, and a former 80,000-barrel aboveground storage tank (AST) once owned by Longview Fibre Company, Crown Zellerbach, and the Port; the AST was removed in 1995. The Standard Oil Company pipelines, which Wilson Oil operated, transferred gasoline, diesel, stove oil, Bunker C, and PS 300 fuels from ships docked at the berths via the pipelines to the bulk tank farm. Bunker C fuel- and petroleum-contaminated ballast water was sent to the AST via a separate pipeline. The 80,000-barrel AST and four known underground storage tanks (USTs) were abandoned in place and/or removed in various phases between 1986 and 1992. No on-going petroleum distribution is occurring at the Port and, to the extent possible, all known potential sources of petroleum hydrocarbons have been removed.

Releases of hydrocarbons to Site soil and groundwater were subsequently discovered in the vicinity of the buried pipes, AST, and USTs. Cleanup of these releases to upland soil and groundwater and removal of the historical pipes underneath Berths 1 and 2 will be the focus of the upcoming Agreed Order between the site potentially liable parties and the Washington State Department of Ecology (Ecology).

In March 2016, small amounts of petroleum product were released from the abandoned pipelines under the berths to the Columbia River through two separate corroded areas. The Port took immediate spill response measures, including deploying a boom around the dock in the area of the spill and stopping the leak. The Port reported the releases to the U.S. Coast Guard (USCG) and Ecology. The USCG dispatched personnel to investigate. The USCG found that while the initial response actions were appropriate, the Port needed to develop a spill response plan to insure continued monitoring until a final action could be developed that would address future spillage potential. In addition, a fine of $250.00 was levied to the Port. After consultation with Ecology, it was determined that the final action should be conducted under Ecology's authority.

The work described in this plan to remove the historical pipes and permanently eliminate future spillage potential will be conducted as an interim action under an Agreed Order between Ecology and the Port. 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."

Given that the historical pipelines underneath Berths 1 and 2 present an ongoing risk of a release that may become substantially worse or cost substantially more to address if the remedial action is delayed, Ecology has determined that an interim action is warranted under WAC 173-340-430.

2.0 Background

Since 1926, several pipelines have been constructed and used to transport a variety of petroleum products from ships berthed on the Columbia River to the former Standard Oil/Chevron bulk facility and to an 80,000-barrel AST and a fuel transfer facility (loading rack) that were operated and maintained by Longview Fibre (refer to Figure 1.1). These petroleum products included stove oil, Bunker C, PS300 fuel (a heavy fuel oil also referred to as No. 5 oil), gasoline, and diesel.

2.1 CHEVRON PIPELINES

By 1944, Standard Oil was operating a set of four pipelines along this route, which bends to the east south of the former mechanic's shop, extends several hundred feet to the east, and then bends to the south, where it emerges at the shoreline beneath Berth 2. Between 1955 and 1973, Standard Oil constructed a new set of pipelines to re-route the southern portion of their pipelines, and reportedly abandoned in place the older pipelines at that time (Golder 1994). These newer pipelines continued south from the bend directly to the shoreline at Berth 1. In 1983 or 1984, Chevron shut down all the pipelines from the berth to their bulk facility, and reportedly decommissioned the remaining operable lines by cleaning the lines and placing a concrete plug at both ends; however, documentation of this is lacking (Golder 1994). In 1984, the former Standard Oil bulk plant facility was sold to Wilcox and Flegel.

2.2 LONGVIEW FIBRE PIPELINE

The former 80,000-barrel AST was supplied from a pipeline that begin on a wharf on the Columbia River in the present location of Berth 2. This infrastructure was operated from 1935 to 1973 primarily to transfer and store Bunker C fuel from tanker ships for use as boiler fuel by Longview Fibre. The pipelines also carried PS300 fuel (#5 fuel oil). In 1973, Crown Zellerbach purchased the AST from Longview Fibre; rather than using the former Longview Fibre pipeline, Crown Zellerbach used the Chevron-owned pipeline to transport Bunker C to a cross-over valve, which then entered the Longview Fibre pipeline at a location very close to the AST (Wilson Oil 1993). Product was not stored in the AST between 1975 and 1976. During portions of 1977 and 1978, Crown Zellerbach used the Longview Fibre pipeline and the AST to store and transfer petroleum-impacted ballast waters from ships (Golder 1994). The AST does not appear to have been used following its sale to the Port in 1983 and subsequent removal in 1995. The fuel loading rack was operated by Longview Fibre from the 1930s to the 1970s, reportedly to load fuel, including Bunker C, from ships and the AST into railroad tank cars for transport to the Longview Fibre facility.

3.0 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, 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, 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, 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 continue to be deployed and monitored. In April 2017, with no further leaking being observed since March 4, the hard boom was removed leaving only the sorbent boom and buckets in place. Port staff inspect the pipes weekly for additional leaks.

Drawing G1 is an aerial plan view of the full extent of the pipelines under Berths 1 and 2 that 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, labelled by the Port on Drawing G1 as A, B, C, D, and E. A sample of the leaking material from the pipeline that initially leaked (noted as Pipeline C) was collected on February 18. A sample of the leaking material from the second leaking, Pipeline B, was collected on March 28. Samples of product in Pipelines D and E were collected in late March as well. An attempt was made at sampling Pipeline A, but this pipeline was found to be empty at a low point in the line.

4.0 Pipe Content Analytical Results

In total, samples of product from four pipelines were collected and submitted to either ALS Laboratories or Specialty Analytical. Samples were tested for product identification, presence of chloride, volatile, and semivolatile organic compounds, polychlorinated biphenyls (PCBs), 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). The lack of a fluid sample from Pipe A suggested the possibility this pipeline was used to transport gasoline, and that residual gasoline left in the pipeline at abandonment has since evaporated. Laboratory results from the testing of the four samples are included in Appendix A. Field notes by Port personnel as to how each sample was collected are provided in Appendix B. Table 4.1 provides a summary of the results.

5.0 Project Team

The project will be performed by the following parties:

- **Port of Longview.** The Port has overall responsibility for the project, as well as physical removal of the pipes and disposal of any wastes generated. All work will be conducted by Port Trade Union Labor, except for testing and evacuation of pipes for gases/vapors, spill response, hauling, and manifesting for disposal.
- **NRC.** NRC is responsible for development of the Health and Safety Plan, oversight of the waste evacuation from pipes, manifesting of the waste, and coordination of hauling the waste. They will also provide spill response support for the project, if required.
- **Sound Testing, Inc.** Sound Testing will be responsible for assessing the concentration of oxygen, carbon dioxide, and explosive gases within the pipes prior to pipe removal and inerting pipes, if necessary.
- **Floyd|Snider.** Floyd|Snider will provide general assistance in project planning and will be responsible for project documentation and reporting.

6.0 Proposed Removal Action

The removal action will remove the abandoned pipelines, A through E, exposed under Berths 1 and 2 (refer to Sheet 1 of Drawing G1). The demolition of the pipelines is proposed to occur in sequential steps as described below:

1. Prior to any start of work, proper best management practices (BMPs) will be in place upland and in-water.
2. Electrical and/or plumbing work will be conducted prior to or concurrent with pipe removal to ensure no disruption in service occurs during pipe removal work.
3. Under dock scaffolding will be constructed under and around the pipes for Berth 1 and Berth 2 pipe removal. Current catwalks will be utilized as much as possible; however, much of the pipeline length runs parallel to the existing catwalks. This scaffolding will be constructed and removed by Port labor. Proper BMPs will be employed during construction and removal of the scaffolding. No treated wood will be used in construction of the scaffolding. No work will be conducted in-water or below the ordinary high-water mark.
4. A section (12 feet by 20 feet) of the concrete deck of the dock between Berths 1 and 2 will be cut to allow pipe section removal. The decking will be cut by Port labor via a concrete saw for the pavement and a chainsaw for the creosote timber decking underneath. Demolition materials will be placed in a drop box on the upland side of the dock behind the bulkhead line or within Transit Shed (TS) 1 or 2 and will be hauled off and disposed of at an appropriate facility once the project is completed.
5. Prior to removal of the pipes, a marine chemist will test the atmosphere inside each pipe to ensure there is no potential for ignition of flammable gases/vapors. If gases/vapors are found, measures will be taken to remove such gases/vapors to levels that are not potentially explosive.
6. Prior to removal of the pipes, all liquids will be evacuated as much as possible. Three of the five pipes have heavy viscous fuel (pipes C, D, and E; refer to Drawing G1). Pipe B was evacuated as much as possible through the Port's investigative sampling process; however, there is still potential for residuals within that pipeline. Pipe A was determined at the time of investigative sampling to not have product. Both pipelines A and B will be examined again, and evacuated as needed, prior to removal. A vacuum truck may assist with the evacuation of liquids.
7. The pipelines will be removed individually beginning at the downstream end of Berth 1 and working upstream to Berth 2. Each pipe will be cut by reciprocating saw (or something similar) into sections approximately 10 feet in length (dependent on the pipe weight and location of the cut).
8. The pipe ends will be elevated as much as possible to allow any residual liquids to flow toward the low point. The upper end of the pipe will then be cut and capped with a Plumber's plug, balloon, or other type plug. The pipe will then be elevated in

the opposite direction to allow for any residual liquids to flow toward the capped end; that end will be cut and plugged. This will continue until the entire pipe has been removed, as repeated at subsequent pipes.

9. Each section of capped pipe will be hand-moved, and/or moved through an alternative system yet to be determined, carried along the scaffolding and/or catwalk under the berth to the opening in the dock decking and lifted out via crane and placed into drop boxes for disposal or for product recovery. The drop box staging area will be within Transit Shed (TS) 2. TS 1 may also be used if additional space is needed.

   The pipes will be vacuumed via vacuum truck prior to removal from under the berth; however, there may be some residual product in the pipes. If that is the case, the Port will try and remove the product again by vacuum truck for recycling if possible. This activity will be conducted within TS 2.

   Although the drop boxes will be lined to eliminate potential leaks, an added precaution will be employed. The Port will place absorbents on the bottom of the lined drop boxes (refer to Sheet 3 of Drawing G1). All drop boxes will be hauled as needed to appropriate landfills based on the analysis previously performed or additional analysis as needed. Analysis will be coordinated with Floyd|Snider, and drop box removal will be coordinated with NRC.

   The containment system at Berth 1 is part of the Port's wastewater infrastructure and permitted through the Port's State Waste Discharge Permit (permit #ST6081). Operation of the infrastructure is documented in the Port of Longview Industrial Wastewater Discharge Permit Compliance Manual, attached as Appendix C. Appendix C provides the Outfall 001 Discharge Procedures (Section 11 of the compliance manual) and flow diagram (Appendix B of the compliance manual). Further, refer to Sheet 3 of Drawing G1 to identify the catch basin numbers and valve locations.

   In summary, Berth 1 consists of an area that can capture process water and incidental stormwater through a series of daisy-chained catch basins to a sump pump system, from which the captured water is pumped to a Rain for Rent tank(s). Catch basins 101 and 111 are fitted with hand valves to either allow stormwater to be discharged to the river through under-dock piping or redirected through alternate piping to the catch basin where the sump pump is located. This allows for collection of process water and incidental stormwater within the contained area.

   Disposal of the process water and incidental stormwater, as outlined in Appendix C, will be modified for this project. Collected water will be handled as follows:

   a. Water captured in the Rain for Rent tank(s) will be sampled and profiled to determine whether there are hazardous wastes that would preclude the Port from discharging waste waters from Outfall 004 per the Port's wastewater

permit parameters. The Port will confer with Don Reif atEcology, as well as with Floyd|Snider, on analysis parameters.

b. If water analysis determines that discharge through Outfall 004 is possible, the Port will contact and gain approval from Don Reif, Ecology, and Duane Leaf, Three Rivers Regional Wastewater Authority, prior to any discharge.

c. If water analysis determines that the water cannot be discharged through Outfall 004, the Port will have the water disposed of at an appropriate facility. This will be coordinated with the vacuum truck contractor, Flyod|Snider, and NRC.

Waste fluids generated from the vacuum truck will be managed and coordinated with the vacuum truck contractor, Floyd|Snider, and NRC. No hazardous wastes are expected be generated.

10. The Port operates under an Industrial Stormwater General Permit (WAR001242). To satisfy compliance under this permit, any bulk commodity imported or exported across Berth 1 is done within this containment area, and the process water and incidental stormwater collected are treated through one of the Port's permitted wastewater treatment facilities. In this instance, the process water and incidental stormwater collected will be evaluated as discussed above prior to disposal. Nevertheless, this activity complies with both the Industrial Stormwater General Permit and Waste Discharge permit.

11. Once pipes are removed, scaffolding under the deck will be removed and the hole in the concrete decking will be replaced. All installed BMPs, including in-water boom, will remain in place until construction is complete.

7.0 Best Management Practices

The Port proposes to utilize the following BMPs during the removal of pipelines:

1. The Port has acquired, and work will comply with, the general, regional, and specific conditions of a U.S. Army Corps of Engineers (USACE)-issued Nationwide Permit (NWP) No. 38 for "cleanup of hazardous and toxic waste."
2. Equipment used for this project will not operate in-water, but work will occur over water, waterward of the ordinary high-water mark.
3. Equipment will include 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 will be located upland away from the water and catch basins, and it will be parked within the containment area at Berth 1. All hand tools will be stored at the maintenance yard when not being used. Spill response equipment (i.e., boom) will be left in place until construction is complete. A spill response trailer is stationed on the downstream side of TS 1 if additional equipment is needed.
4. Equipment will be checked daily for leaks and before using the equipment near the water. Any required repairs will be completed at the Port's mechanic shop or maintenance yard.
5. Preventative spill measures will include the following:
    a. Deploy appropriate boom within the area of decking and pipe removal prior to and during removal actions.
    b. Make appropriate spill materials available for use within the area of construction.
    c. NRC will be on site for pipe disposal management and spill response services.
    d. When possible, sorbent material will be placed below pipelines at the cut locations, within the immediate area of the lined drop boxes, and near the temporary dock opening to prevent spills from reaching the river.
    e. Lined (i.e., adsorbent placed on plastic) drop boxes will either be covered in place or located within TS 2 (alternatively TS 1) to prevent stormwater encountering residual contaminates.
6. 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. Use of tarps or other methods to prevent wood, sawdust, trimmings, drill shavings, concrete, and other debris from contacting the bed or waters of the state.

b. Evacuating any liquid materials prior to under-dock removal via a vacuum truck from the dock.

c. Installing end caps to the fuel pipeline sections during removal, such as Plumber's plugs, balloons, or other such materials to ensure no hazardous liquids enter the water.

d. Use of contained area on Berth 1 where process water and incidental stormwater can be piped to a Rain for Rent tank.

e. Ensure that all drop boxes are covered if on dock, or moved into TS 2 during non-activity or at end of work day.

f. Placing a containment boom in water around the work area to confine sawdust dispersal. The containment boom will be gathered, and the collected sawdust disposed of after completion of work. Water used during the cutting/boring process and the combined water and concrete dust (slurry) will all be vacuumed up during cutting/boring so that little or no slurry enters the water. Larger debris/materials/waste with a potential to fall into the river will be caught by prepositioned webbing/hangers. This work will occur from the dock.

7. Prior to removal of the pipes, the Port will have a marine chemist test the pipe atmospheres for any gases/vapors. If potentially explosive vapors are found, the atmosphere in the pipelines will be inerted to ensure safe removal.

8.0 Health and Safety and Environmental Controls

Appendix D to this document contains the Health and Safety Plan prepared by NRC, who will provide support for this project to the Port.

9.0 Permitting

The proposed work is not subject to review for compliance with the Shoreline Management Act or a demolition permit from the City of Longview. The pipeline removal will be performed under the Model Toxics Control Act. WAC 173-340-710 which provides an exemption for those procedural requirements of all relevant and appropriate requirements (ARARs) related to the on-site 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 proposed removal and best management practices will meet the required ARARs.

The pipeline work will require review through Washington State Environmental Policy Act and a Nation Wide Permit from the U.S. Army Corps of Engineers Portland District.

9.1 STATE ENVIRONMENTAL POLICY ACT REQUIREMENTS

The Washington State SEPA Rules described a "demolition" in WAC 197-11-800(2)(g), which specifically exempts demolition projects where the construction of such structures would be exempt under WAC 197-11-800(1) and (2). These construction exemptions do not apply to petroleum pipelines, and therefore the demolition of such structures is not exempt from SEPA review. The Port, as a municipal corporation of the State of Washington, has SEPA lead official authority. The Port's SEPA Resolution 2014-6 adopts the state's policies and procedures under Chapter 43.21C RCW and WAC 197-11. However, the Port recognizes the efficiency of having Ecology act in the SEPA lead official role for the environmental review of the pipeline demolition, and the MTCA Interim Action and Agreed Order process. The Port will work in collaboration with Ecology throughout the SEPA process. The Port will provide the SEPA checklist to Ecology for determination and the SEPA comment period with be combined with the 30-day comment period of the interim action work plan. Once comments are addressed, work would begin on this project.

9.2 APPLICABLE FEDERAL, STATE, AND LOCAL PERMIT REQUIREMENTS

This project is within the regulatory purview of the USACE under a 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. The pipeline removal is consistent with the activities authorized under NWP 38, and the Port has acquired this approval. The Port has reviewed the general conditions associated with the NWP and has determined that the work will substantively comply with the general conditions related to project construction. Compliance with these general conditions will ensure that potential adverse effects to the Columbia River are avoided and minimized, and that the project is conducted in a manner that meets USACE approval.

The Port operates under an Industrial Stormwater General Permit (WAR001242) and an Industrial Wastewater Permit (ST6081). All work will be in conformance with the Port's current permit requirements (refer to item 9 in Section 6.0).

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) do not require application for a substantial development permit or an exemption for this project. This project is not considered development and therefore not within the jurisdiction of said regulations.

10.0 Schedule

The work will commence following Ecology approval of this document and in accordance with the schedule in the Agreed Order. The interim action is expected to require 6 to 8 weeks to complete and will be considered complete once demobilization has occurred. Ecology will be notified within 48 hours of demobilization. An Agency Review Draft Interim Action Report will be submitted to Ecology for review and approval within 60 calendar days of completion of the interim action.

11.0 Reporting

The work will be documented in an Interim Action Report submitted to Ecology for approval after completion of field activities and in accordance with the schedule in the Agreed Order. The report will include a description of the work performed and include appendices with representative photographs and all analytical reports (if generated), as well as any copies of waste disposal manifests.

During the period of work itself, Ecology will receive weekly updates from the Port as to the work accomplished the prior week and the work expected to be accomplished the upcoming week.

12.0 References

Golder Associates (Golder). 1994. *Phase IV Characterization Report, Bunker C and Diesel Fuel Investigation, Port of Longview*. 7 December.

Wilson Oil, Inc. (Wilson Oil). 1993. Letter from Steve Wilcox, Wilson Oil, to Judy Grigg, Port of Longview re: Golder and Associates Report. 29 September.

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Table

Table 4.1
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 4.1
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 4.1
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

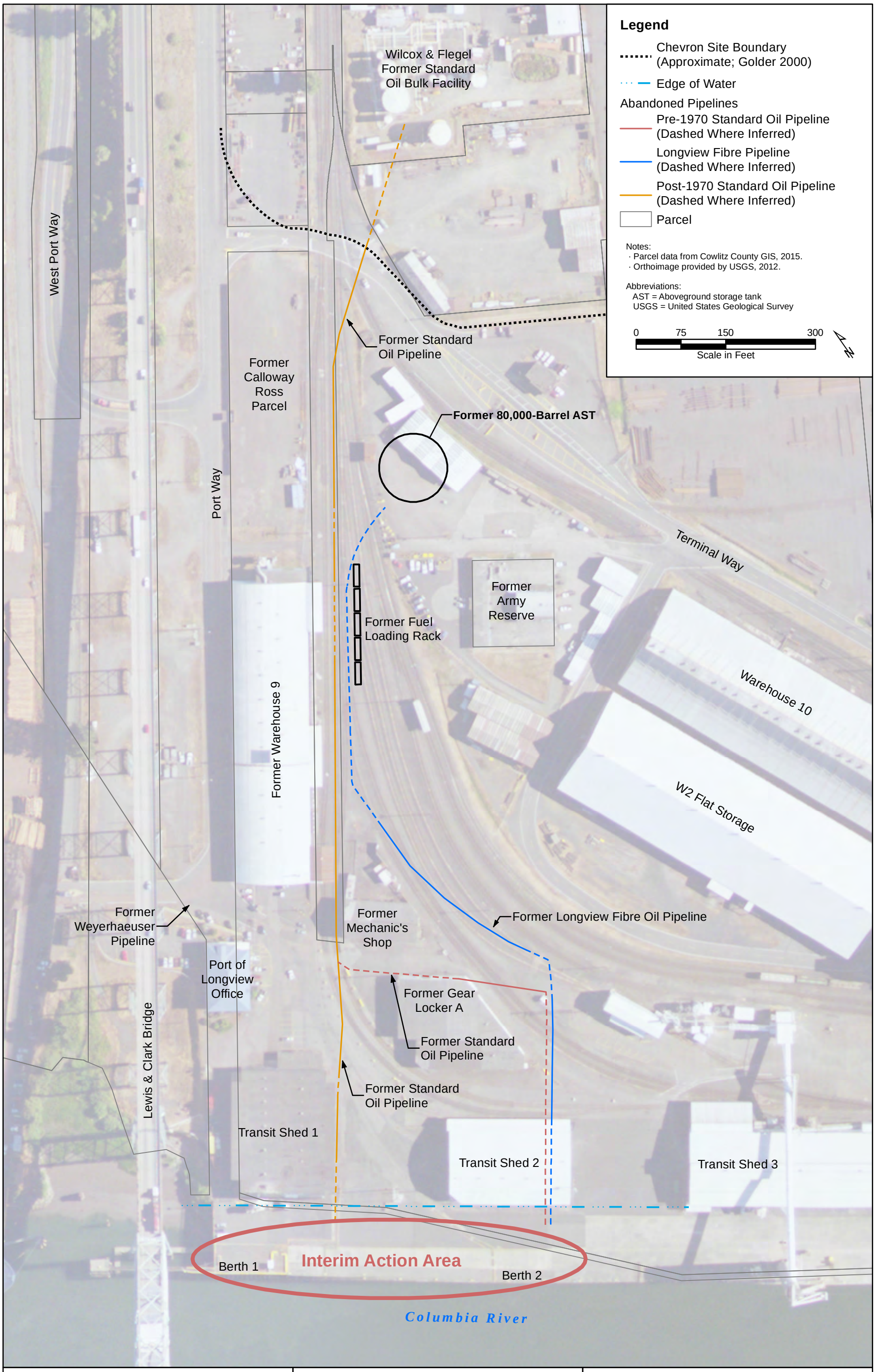
Qualifiers:

* 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.

Port of Longview
TPH Site

Interim Action Work Plan

Figure



FLOYD | SNIDER
strategy • science • engineering

Interim Action Work Plan
Port of Longview TPH Site
Longview, Washington

Figure 1.1
Site Map

I:\GIS\Projects\POL-TPH\MXD\InterimActionWorkPlan\Figure 1 Site Map.mxd
5/25/2016

Port of Longview
TPH Site

Interim Action Work Plan

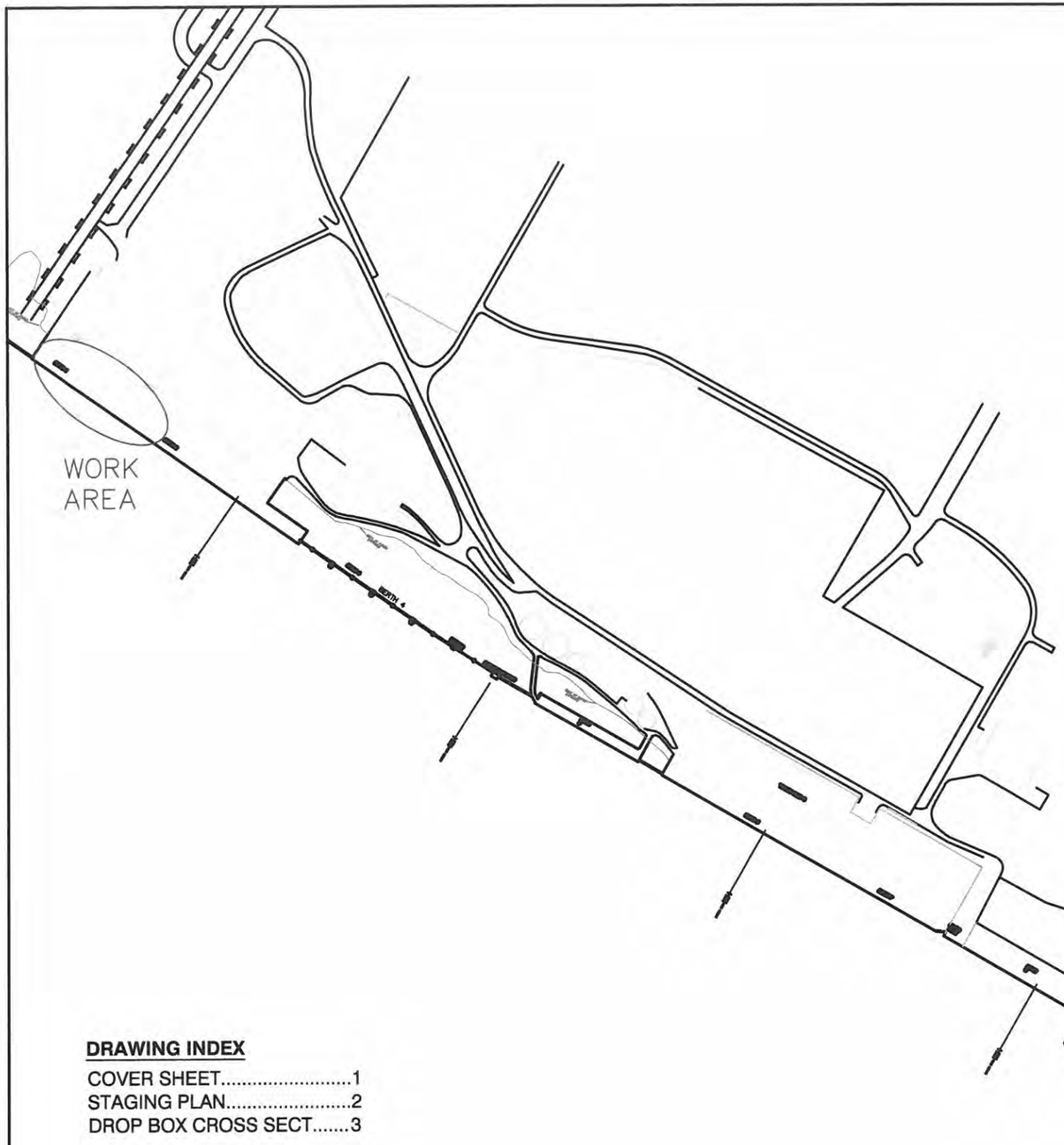
Drawing

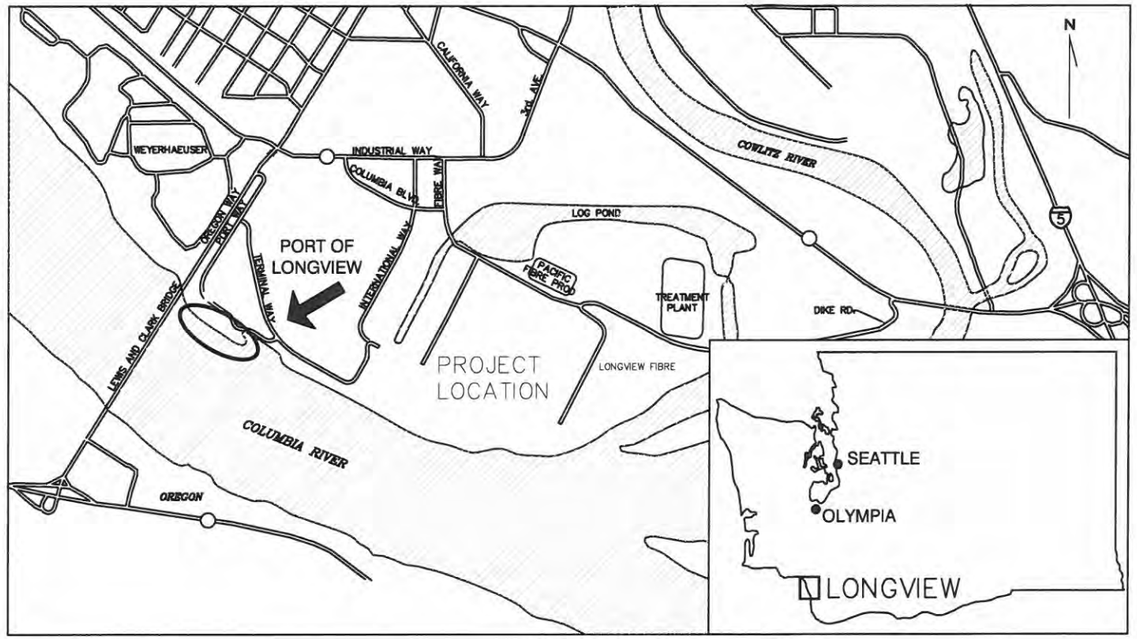
PORT OF LONGVIEW • EST. 1921 •

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.

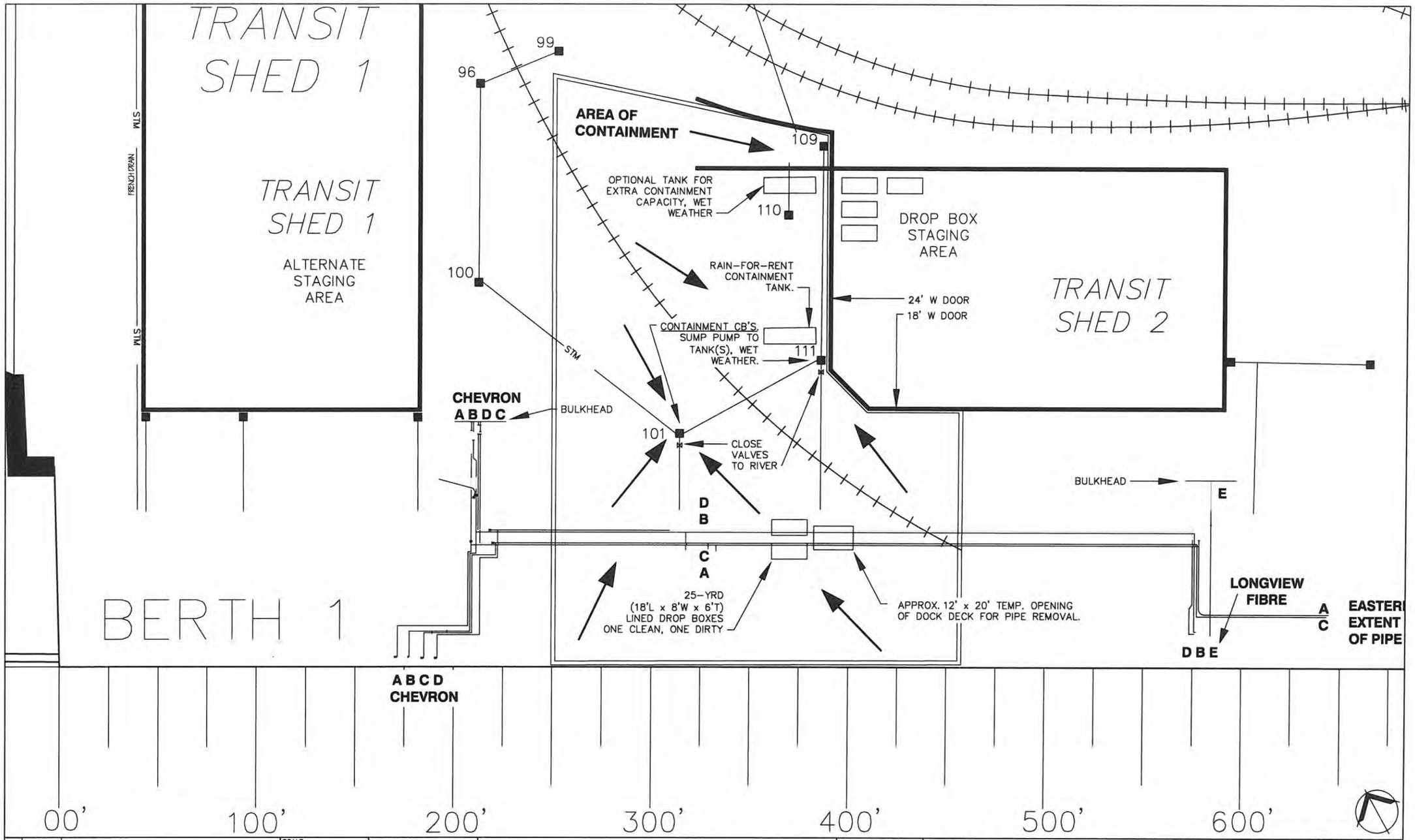
PORT OF LONGVIEW • EST. 1921 • | WASHINGTON'S WORKING PORT

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
--	--	--

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

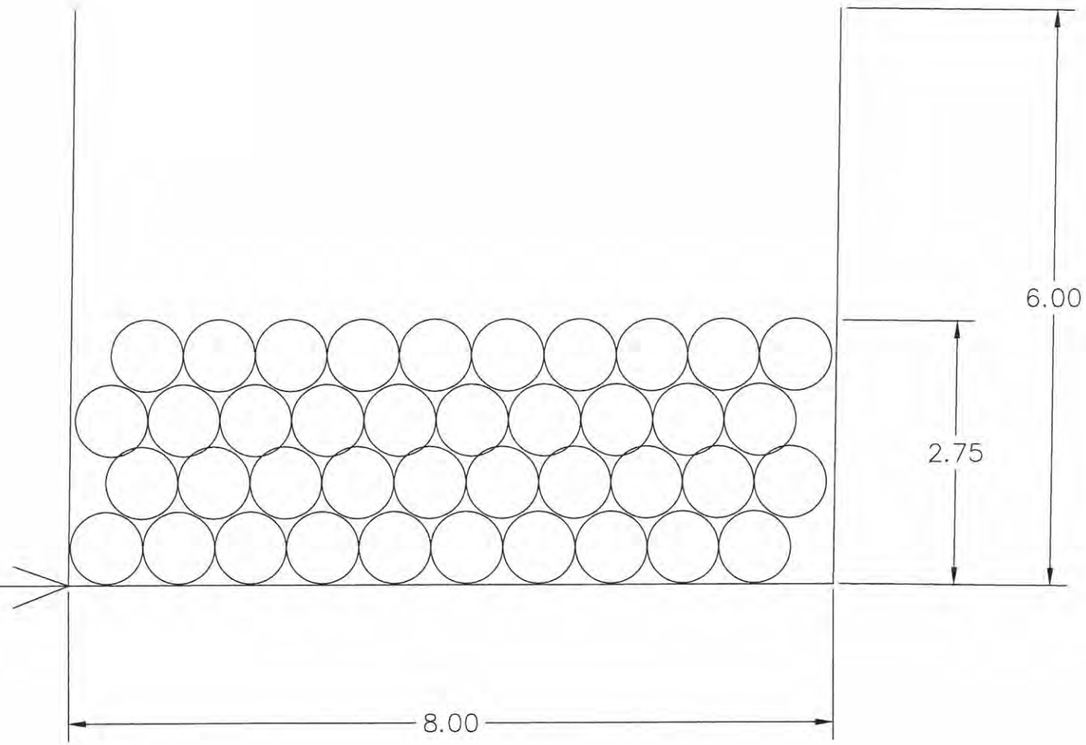
BERTHS 1 AND 2 ABANDONED FUEL PIPE

—

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 Work Plan

Appendix A
Laboratory Results

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

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

CHAIN OF CUSTODY

ALS Environmental

1317 South 13th Ave., Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

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: [signature]	Signature: [signature]	Signature	Signature
Date/Time: 2/18/16 1400	Date/Time: 2/18/16 1400	Date/Time	Date/Time
Printed Name: Sean Kelly	Printed Name: [signature]	Printed Name	Printed Name
Firm: Port of LV	Firm: ALS 1350	Firm	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: A.J Unloaded: 2/18/16 By: A.J

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	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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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.
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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

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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)

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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

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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:

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
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

Units: mg/Kg
Basis: Wet

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

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

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:

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

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	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
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
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:

Analytical Results

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**

Specialty Analytical

15-Apr-16

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**

Specialty Analytical

15-Apr-16

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**

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
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**

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
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

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
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				

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: **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**

15-Apr-16

Specialty Analytical

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**

Specialty Analytical

15-Apr-16

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: Sean Kelly
Company: Port of LV
Date: 3/29/16 Time: 11:00 AM
Received By:
Company: AI SA 3/29/16 1125
Relinquished By:
Company: AI SA
Date: 3/29/16 Time: 1346
Received For Lab By: Nikki Rapper
Date: 3/29/16 Time: 1346

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

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. 1003278 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 Work Plan

Appendix B
Field Notes

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.

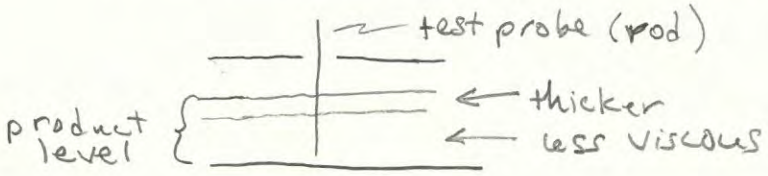
Pipe E

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.

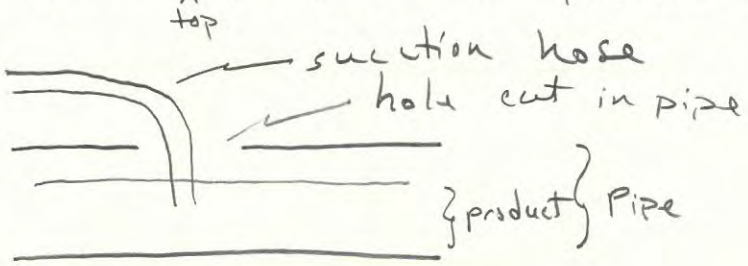
Scooped with gloved hand and spoon.

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 Work Plan

Appendix C
Port of Longview Industrial Wastewater Discharge Permit Compliance Manual

Kennedy/Jenks Consultants

32001 32nd Avenue South, Suite 100
Federal Way, Washington 98001
253-835-6400
FAX: 253-952-3435

Port of Longview
Industrial Wastewater
Discharge Permit
Compliance Manual

28 May 2015

Revised, Port of Longview
May: 2016, 2017, 2018

Prepared for

Port of Longview
10 Port Way
Longview, Washington 98632

K/J Project No. 1296002.08

Section 11: Outfall 001 Discharge Procedures

11.1 Outfall 001 Facility Description

The Berth 1 treatment system was designed to collect wash water, dust control water spray, and incidental stormwater runoff from the Berth 1 general import/export facility activities. Currently, all process water is collected and brought to either the Berth 2 or Berth 7 IWTP. Outfall 001 is included in the Port's Permit, but no discharge has occurred for several years.

The past system included a chemical feed system and settling tank. However, the present system at Berth 1 consists of a paved containment area with catch basins and a lift station for water collection. Water is conveyed from the lift station to holding tanks for storage. Rail tanker cars are often used as holding tanks. Water is then transferred to the Berth 2 or Berth 7 wastewater collection sumps for eventual treatment in either the Berth 2 or Berth 7 IWTP.

11.2 Outfall 001 Major Facility Unit Descriptions

11.2.1 Containment Area

The paved containment area at Berth 1 is approximately 57,000 ft^2 in area.

11.2.2 Lift Station Number (#) 111

Lift station #111 collects water from the Berth 1 catch basins. Wastewater is pumped from lift station #111 to holding tanks using the transfer pump in catch basin #111. The transfer pump is a sump pump, actuated by a level float in the lift station. This pump has a capacity of approximately 50 gallons per minute (gpm). Lift station #111 is equipped with a stormwater bypass pipeline with a hand valve that allows stormwater to drain to the river.

11.2.3 Wastewater Holding

Lift Station #111 pumps wastewater collected in the Berth 1 containment area to holding tanks.

11.3 Outfall 001 Operation

11.3.1 Wastewater Collection

Prior to commencing ship unloading, the operator will stage holding tanks for wastewater collection adjacent to Lift Station #111. The operator should take potential rainfall into consideration when considering the number of holding tanks to initially stage.

The operator must install valves with hose fittings on the discharge points of the holding tanks and install the pump and level float in Lift Station #111. The operator must also install the holding tank fill line from the sump pump to the first tank section to be filled; the operator should take operation traffic into account when determining the path of the fill line.

Finally, the operator must close the stormwater bypass valves in catch basins #101 and #111. The pump in #111 will now automatically pump runoff from the Berth 1 containment area to the selected holding tank. When a tank is filled, the operator must move the fill line to another tank.

After completing ship unloading, the berths are washed down in the containment area while wastewater is collected. Upon completing washdown, the operator will inspect and clean the catch basins and lift station.

After cleaning, the operator will shut down and remove the sump pump and open the bypass valves in catch basins #101 and #111, allowing stormwater to bypass to the river.

11.3.2 Wastewater Transfer, Treatment, and Discharge

11.3.2.1 Conveyance to Berth 7 IWTP for Treatment

Holding tanks are taken to the Truck Loadout at Berth 7, where they are emptied by gravity. The flow rate is controlled by the valves installed on the holding tank discharge points. An underground piping system conveys water from a trench drain collection system in the Truck Loadout to a sump at the Berth 7 IWTP. A lift station in the sump pumps the wastewater to selected tanks in the Berth 7 inlet tank farm to be held for treatment and then discharged through Outfall 004 per that system's operating procedures.

11.3.2.2 Conveyance to Berth 2 IWTP for Treatment

Holding tanks are taken to the proximity of the Berth 2 bulk facility rail dump. Holding tanks are emptied by gravity through a hose hooked to the rail car's discharge point and running to the sump in the basement of the rail dump. A lift station in the sump pumps the wastewater to selected tanks in the Berth 2 IWTP tank farm to be held for treatment and then discharged through Outfall 002 per that system's operating procedures.

11.4 Outfall 001 Facility Maintenance

The operator should inspect the catch basins and lift station after each ship unloading and conduct cleanout, as necessary, to prevent settled solids from discharging to river.

Regular cleaning can be conducted with the Port's drum vacuum system, and the operator may bring in vactor truck services as necessary for effective system operation.

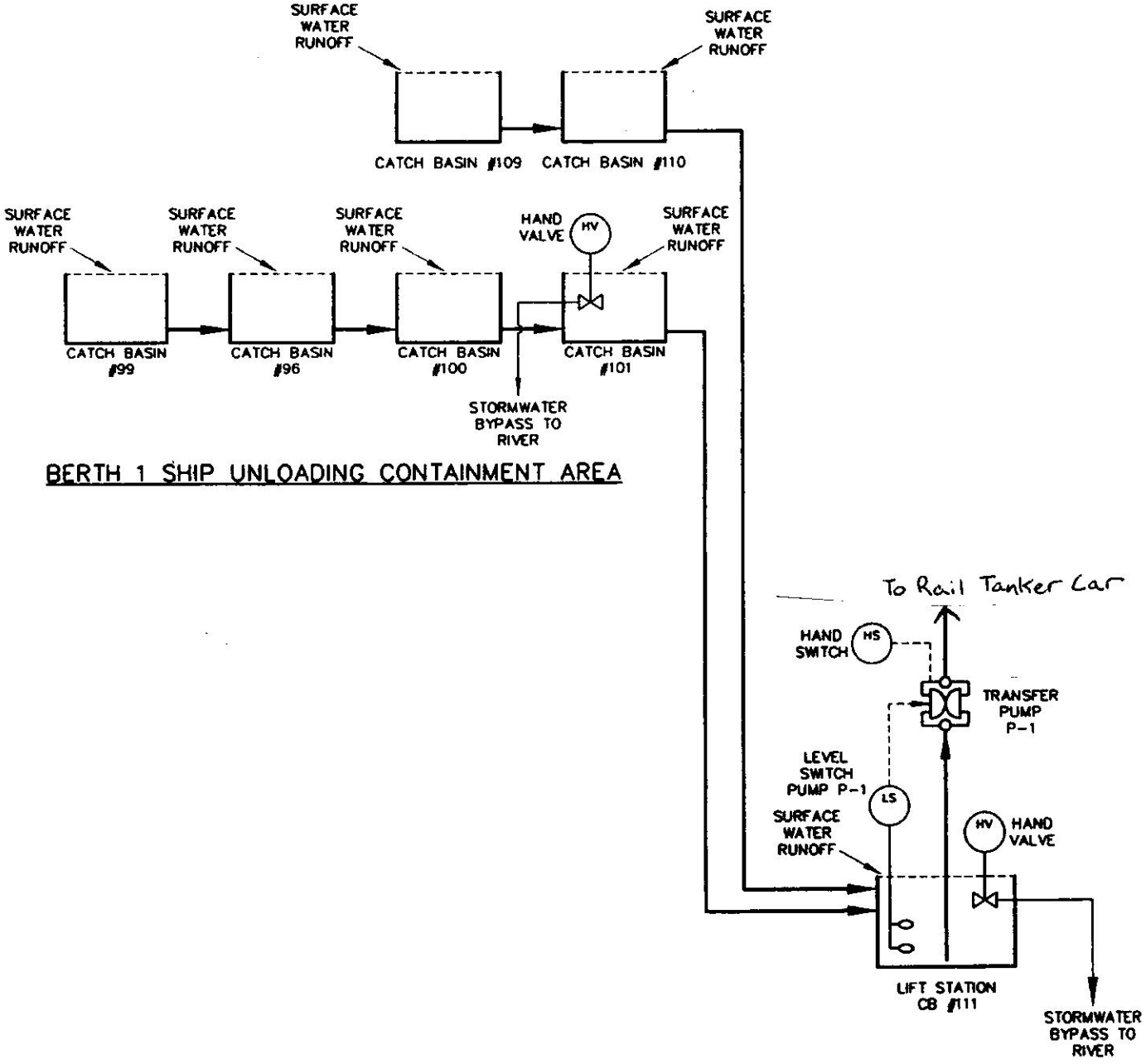
Collected sludge and/or solids from the Berth 1 facility are typically classified as nonhazardous waste. If dewatering of sludge is necessary, sludge can be pumped to a dewater box that drains to Berth 7 IWTP collection system. Solids can be landfilled.

If there is any reason to believe that collected sludge and/or solids are hazardous waste, the waste must be classified and disposed of per state regulations (173-303 WAC). Handling cargos other than salt that may produce hazardous waste or spilling hazardous materials to the Berth 1 containment system would be reasons to believe that collected sludge and/or solids are hazardous waste.

The operator should conduct routine inspections of all treatment facilities and conduct maintenance and corrective actions as identified during inspections. Any leaks should be repaired immediately upon detection.

The sump pump and float switch should be routinely inspected and maintained, as required, according to manufacturers' requirements.

All inspection and maintenance records should be recorded in the log.



BERTH 1 SHIP UNLOADING CONTAINMENT AREA

Port of Longview
TPH Site

Interim Action Work Plan

Appendix D
Health and Safety Plan

Site Health & Safety Plan
Project Name: Port of Longview
Abandoned Fuel Pipeline Decommissioning

ICS KEY PERSONNEL - NRCES		
Project Manager	**Randy Legler**	503.849.2981
Project Supervisor	**Joe Alexander**	503.509.0138
Site Safety Officer / CPR-FA	**Joe Alexander**	503.509.0138
Hospital	**Peace Health St. Johns**	360.414.2000
Safety Manager	**Torey Grandt**	206.300.2822

Port of Longview Personnel		
Program Manager	**Josh Johnson**	360.261.9533
Project Superintendent	**Sam Hammergren**	360.431.9061

Date: **Start Time:** **Job Number:**

☐ **Land Emergency Response** ☐**Marine Emergency Response** ☒**: Land Service** ☒ **Marine Service**

SITE DESCRIPTION	This site-specific Health and Safety Plan has been developed to provide a safe work environment for the contracted work to be performed at the Port of Longview. Longview, WA. General scope of work is to clean and remove piping systems and valves above-ground/over water and below dock/pier structure.

SCOPE OF WORK	**SITE ORIENTATION** ▪ Prior to work assignment (layout, ingress; egress; emergency evacuation, Identify & inspect ladders, phones) establish decon area for personnel, tools & equipment. Identify disposal system for different materials, (metals, plastics, PVC,) **LOCKOUT** • Facilities manager will lock out / tagout /block /bleed any residual energized systems (electrical components secured or identified) NRC Project Supvr. will confirm LOTO prior to any pipe system breaking. **PRE LINE Breaking/DEMO** • Marine Chemist contracted to do atmospheric testing of interior pipe systems • Ensure positive ventilation of pipe lines, in preparation for breaking/demo • Install fuel oil recovery materials or equipment prior to line breaking **HYDROCARBON RESIDUE** • Remove hydrocarbon residue from interior of fuel transmission lines to make ready for removal and disposal **REMOVE FUEL TRANSMISSION LINES** • Cut and remove all piping in easily managed sections • Remove above ground piping and attached valves • Remove strainers and attached valves • Load debris into bins for disposal

EQUIPMENT/ MATERIALS	• Vacuum truck 70 bbl • Line Jetter system, 3k -5k psi steam pressure washer • Decontamination Supplies • Fuel recovery materials (sorbents) • Air blowers / air compressors (185 cfm) • Air monitoring gear (PID/CO/LEL / 02 /H2S meter) • Metal cutting tools • Portable generator with GFCI wet environment approved protection

PERSONNEL	• Only properly trained and HAZWOPER certified personnel will be dispatched to work on this project • Site supervisor will verify workers against dispatch schedule • Site Safety Meetings will be held at each shift start and documented per the enclosed form • Equipment operators and drivers will inspect their equipment prior to use to ensure it is in proper working order; additionally, equipment is inspected in the company yard/shop prior to dispatch to ensure working order. • Site supervisor will continuously monitor the job to ensure all personnel are working safely and in compliance with regulatory and corporate standards • Safety Audits will be periodically performed by either the regional Safety Manager or the Area Safety Engineer and formally documented.

PERSONAL PROTECTIVE EQUIPMENT

TASK	Level	MASK /CARTRIDGE /AIR	ADDITIONAL PPE
Establish support area / prepare	**D**	N/A	Hardhats, safety glasses, coveralls, leather gloves, steel toe neoprene boots, high visible floatation vest (PFD)within 3ft of water or working on deck of vessel
Drain pipe lines with vacuum truck	**D**	N/A	Hardhat, FR work attire, leather gloves, steel toe neoprene boots,
Operator – Vac truck	**D**	N/A	Hardhats, safety glasses, hearing protection, FR work attire, canvas/leather outer gloves, leather steel toe boots with anti-static soles, high visible traffic vests, PFD within 3ft of water
Remove pipe sections, valves and pipe hangers	**D**	N/A	Hardhat, FR work attire, leather gloves over nitrile inner gloves, steel toe neoprene boots, safety glasses and full coverage face shield, hearing protection, PFD within 3ft of water or on deck of vessel
Decontaminate equipment	**D**	N/A	Hardhats, full-face shields, safety goggles, splash protection neoprene outer gloves nitrile, steel toe boots, high visible traffic vests, PFD within 3ft of water

AIR MONITORING ACTION LEVELS -

Instrument	Reading	Action
COMBUSTIBLE GAS INDICATOR – Oxygen		
Continuously Monitor at multiple areas to detect % oxygen. - monitor interior	19.5 – 23.5 %	• continue push / pull ventilation • Continue normal operations • continue use of Level D or C if entry required (Concentration of contaminants determine level of respiratory protection)
	< 19.5 %	• continue push / pull ventilation • IDLH situation; Level B if entry required
	> 23.5%	• continue push / pull ventilation • IDLH situation; No Entry
COMBUSTIBLE GAS INDICATOR – PID		
Four gas with P.I.D. – MX6	5ppm - 10ppm	• Stop work activity, initiate ventilation procedures, don A.P.R. if ventilation of space(s) is not effective

ACTIVITY HAZARD ANALYSIS

ACTIVITY HAZARD ANALYSIS

Hazards Throughout the Job		
ITEM	**HAZARD**	**PREVENTION**
General Work Area	Slip / trip / fall / pinch points / poke-snag-puncture	. designated pathways cleared of debris □ use of temporary work floats under dock area □ move float slowly, ensure pilings and dock timbers are free of spikes & nails □ cautious hand holds
General Work Area –lifting	Strain	□ plan and stage to minimize long distance carrying □ split heavy loads into smaller loads □ use assistant for heavy (>50 lbs) or awkward load □ Lift with legs and not back
General Work Area -Traffic	Struck by	□ Set up visible barricades on access roads; □ Wear high visibility safety vests □ Ground guides for backing up
Refueling Equipment	Fire Spill	□ Flammable liquids in explosion proof containers □ No flammable liquids or gas stored in unmarked containers □ Fire extinguisher near refueling and storage areas □ Area in front of extinguishers kept clear □ Spill containment plan discussed and in place □ Grounding and bonding □ Clean up spills A.S.A.P.
Ambient weather / PPE load	Rain/cold	□ Follow the ACGIH Recommendations for rest/work □ Drink 4 cups of water per hour/ Electrolyte Replacement □ Change wet clothes when needed □ Provide heated rest area for personnel
Operate Vacuum Truck	Fire /explosion Slip /trip/fall Struck by Contact Haz Noise Spill Static	□ Monitor per action levels □ See attached JHA for specific guidelines □ PPE as described on page 2 (hearing protection / high visibility ve □ Ground and bond truck prior to transferring liquid □ Secure area of non NRCES personnel □ Vacuum hoses and truck bonded and grounded □ Qualified vacuum truck operator at machine at all times □ Fire Extinguisher 20 lb ABC located near truck □ Ground Guide / Chock Wheels □ Keep Truck a safe distance from dock edge/water
Vacuum hoses	Struck by Contact Spill Noise strain	□ PPE on page 2 □ Inspect hoses / pipes at the start of operation and periodically during operation to ensure integrity of hoses □ Use legs / not the back to lift hoses

Hazards Throughout the Job		
ITEM	**HAZARD**	**PREVENTION**
Ladder Safety	Slip Fall	☐ All ladders secured ☐ Personnel work between rails of ladder ☐ Three point contact at all times ☐ Inspect ladders prior to using
Pressure Washer	Noise Contact with contaminants	☐ See JHA for specific guidelines ☐ Inspect equipment prior to use ☐ Both hands on wand handle at all times during activation ☐ PPE specified on page 2 (Hearing protection devices) ☐ No pointing end of wand at others or self ☐ Do not decon personnel with Pressure washer

SAFETY EQUIPMENT REQUIRED:

	Eyewash / Shower		Decon Pool / Supplies		Hazard Warning signs
	First Aid Kit		Fire Extinguisher		4 Way air monitoring instrument
	Portable lights		Barricades / rope		55 gallon drum water / hand pump for hygiene and decon

TRAINING REQUIREMENTS:

	HAZWOPER 40 / 24		Confined Space Supervisor		Current 8 Hour Refresher
	First Aid /CPR		Hazard Communication (read /understand MSDS)		Qualified Vac Truck operator
	LPS Certification		Air monitor instrument		

DECONTAMINATION AND DISPOSAL

DECONTAMINATION PLAN	☐ Establish decon area (visqueen pad) at entry /exit ☐ Ensure work area exits through decon line / not around it ☐ Provide safe walkway / visqueen represents slip hazard ☐ Place empty lined drums or plastic bags for contaminated PPE ☐ Place wash tubs into containment tub ☐ Step into containment /wash tubs and wash boots ☐ Step out of tub and rinse boots ☐ Unzip suit / pull off hood ☐ Sit down and remove boots ☐ Roll down suit and place into container ☐ Remove inner gloves
DISPOSAL PLAN	☐ Place contaminated suits in NRCES 55 gallon drums for disposal ☐ Dispose of rust, scale and scrapings in bin for disposal ☐ Liquid waste collected for disposal.

EMERGENCY MEDICAL TREATMENT AND FIRST AID

TYPE CONTACT	FIRST AID
Eyes	• Flush each eyes continuously for 15 minutes; • Tilt head to side to ensure liquid runs onto floor not other eye • refer to EMT for evaluation
Skin	• Remove contaminated clothing immediately • Wash skin continuously for 15 minutes; • refer to physician if redness, swelling, or pain persists after washing
Breathing	• Call 911; • Remove to fresh air immediately; • begin CPR until EMT arrives
Ingestion	• aspiration hazard • do not induce vomiting • do not give anything by mouth

EMERGENCY RESPONSE PLAN

Attach Map to Nearest Hospital (page 9)

ELEMENT	LOCATION, SPECIFICATION OR REASON FOR USE
NEAREST HOSPITAL	Peace Health St John Medical Center 1615 Delaware St, Longview, WA 98632
NEAREST PHONE	Supervisor cell phone
FIRST AID KIT	Supervisor Truck
FIRE EXTINGUISHER	Supervisor truck and charged extinguishers on site
EYEWASH STATION AND EMERGENCY SHOWER	Supervisor will determine location on site or provide 55 gallon drum of water and hand pump
EVACUATION ROUTE / MEETING POINT	To be discussed and diagramed on site before start of job

EMERGENCY PHONE NUMBERS

ELEMENT	PHONE NUMBER
HOSPITAL	360. 414.2000
FIRE DEPARTMENT	911
POLICE DEPARTMENT	911
PORT OF LONGVIEW: LISA HENDRIKSEN	360.430.1855 (c) 360.425.3305 (o) 360.703.0207 (d)

SAFETY PLAN APPROVAL

Site Safety Officer_____
Date_____

ACKNOWLEDGMENTS (must be signed by all NRCES site personnel)		
Date	**Print Name**	**Signature**

Port of Longview – St. Johns Hospital