CONSTRUCTION COMPLETION REPORT

Portland General Electric Company – Beaver Generating Plant

80997 Kallunki Road

Clatskanie, Oregon

Prepared for:

Portland General Electric Company

121 SW Salmon St
Portland, Oregon 97204

Prepared by:

Amec Foster Wheeler Environment & Infrastructure, Inc.

7376 SW Durham Road
Portland, Oregon 97224
(503) 639-3400

December 5, 2016

Project No. 6-61M-132960.01

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Portland General Electric Company
121 SW Salmon St
Portland, Oregon 97204

Attention: Mr. Jacob Neal

Subject: Construction Completion Report
Portland General Electric – Beaver Generating Plant
80997 Kallunki Road
Clatskanie, Oregon

Dear Jacob:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) is pleased to submit this Construction Completion Report for the Beaver Generating Plant site located in Clatskanie, Oregon.

We appreciate the opportunity to serve you on this project. If you have any questions or require further information, please feel free to contact us at (503) 639-3400.

Sincerely,

Amec Foster Wheeler
Environment & Infrastructure, Inc.

Christy Duitman, RG
Project Manager

Paul D. Stull III, PE
Project Engineer

Attachments: Construction Completion Report

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TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

CONSTRUCTION COMPLETION REPORT
Portland General Electric – Beaver Generating Plant
80997 Kallunki Road
Clatskanie, Oregon

1.0 INTRODUCTION

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) has prepared this Construction Completion Report (CCR) for removal of petroleum impacted soils within Portland General Electric Company's (PGE) Beaver Tank Farm located at 80997 Kallunki Road, Clatskanie, Oregon (Site; Figure 1). Previous investigation activities have identified petroleum contaminated soils (PCS) within select areas of the Site (Figure 2). This CCR documents the voluntary removal of PCS within select areas of the Beaver Tank Farm. All work was conducted in general accordance with the Soil Remediation Work Plan (Work Plan) dated August 25, 2016. The project background, objectives, construction preparation, soil removal, and site restoration activities are discussed in the following sections.

2.0 SITE DESCRIPTION AND BACKGROUND

2.1 SITE DESCRIPTION

The 120.5 acre Site, located at 80997 Kallunki Road in Clatskanie, Oregon, is situated within the Port Westward Industrial Park (Figure 1). Adjacent properties include the Columbia Pacific Bio-Refinery ethanol plant, and PGE's Port Westward natural gas-powered Generation facility. The Site houses a combined cycle electrical power generating station operating on natural gas or fuel oil. Fuel oil is stored in the on-Site Beaver Tank Farm.

2.2 SITE BACKGROUND

PGE's Beaver Tank Farm was originally constructed in 1974, to provide fuel for the adjacent Beaver Generating Plant (Figure 2). Operational changes have reduced the demand for fuel oil storage, and currently the tank farm operates only to maintain a strategic fuel oil reserve, while the remaining tank farm assets are not utilized. There are eight tanks within the Beaver Tank Farm; three of the storage tanks (Tanks 1, 4, and 8) are currently in service (Figure 2). The remaining five tanks are empty and are out of service.

Historical leaks of fuel oil from piping and valves have impacted subsurface soils within the Beaver Tank Farm. A series of investigation activities have been conducted to estimate the magnitude and

extent of these impacts; the most recent investigation occurred in 2014. Results of the investigation were reported in the *Subsurface Investigation and Remediation Estimate Report,* dated January 2015 (CH2MHill 2015). Contaminants of concern identified in the report include petroleum hydrocarbons in the diesel and heavy oil ranges and associated polycyclic aromatic hydrocarbons (PAHs). In the spring of 2016, a pipe leak was discovered directly south of Tank 5 under the catwalk and central piping trunk lines, which resulted in an additional area of petroleum contamination.

2.3 PRIOR WORK

Several phases of environmental assessment and remedial planning have been conducted at the Site from 2010 through 2015. This work is documented in the following reports:

- Subsurface Soil and Groundwater Investigation, Tank Farm Pipe Release Area, Beaver Generating Station, Clatskanie, Oregon; February 8, 2010; URS.
- Phase II Environmental Site Assessment: Beaver Generating Plant Tank Farm; January 2010; Hahn and Associates.
- Portland General Electric Beaver Tank Farm Subsurface Investigation and Remediation Estimate; January 2015; CH2MHill.

3.0 PROJECT OBJECTIVES

The overall goal of the project was to remove highly impacted PCS within defined areas of the Beaver Tank Farm and replace it with clean fill. Specifically, the project targeted removal of vadose zone soil containing diesel-range petroleum hydrocarbon above the Oregon Department of Environmental Quality's (DEQ) Risk-Based Concentration (RBC) generic diesel/heating oil screening value of 4,600 milligrams per kilogram (mg/kg), which is associated with the construction worker exposure pathway (DEQ 2003).

4.0 PRE-MOBILIZATION ACTIVITIES

4.1 PROJECT PLANS

As part of the requirements for conducting the construction phase of this project, several submittals were prepared as part of the Work Plan. These were reviewed and approved by PGE prior to initiating field construction activities, and included the following:

1. Project Schedule – A project schedule was prepared to estimate the duration of the project tasks and was included as Appendix A of the Work Plan and was updated throughout the project to reflect actual field work conditions and current progress.
2. Health and Safety Plan – A Site-specific Health and Safety Plan (HASP) was prepared and included as Appendix B of the Work Plan.
3. Site Traffic Management Plan – The Site Traffic Management Plan was prepared to provide traffic routes and signage to direct PGE personnel vehicles, project vehicles, and dump trucks on and to the Site. The Site Traffic Management Plan was included as Appendix D to the Work Plan.
4. Dust Control Plan – A Dust Control Plan was prepared to provide instructions for the mitigation of excessive dust generation during construction activities and for routine monitoring of dust levels. The Dust Control Plan was attached as Appendix E to the Work Plan.
5. Transportation and Disposal Plan – The Transportation and Disposal Plan provided specifications and directions for the handling, loading, transportation, and disposal of the excavated soils from the Site. The plan was included as Appendix F of the Work Plan.

4.2 PRE-CONSTRUCTION SOIL INVESTIGATION

Historical leaks of fuel oil from piping and valves have impacted subsurface soils within the Beaver Tank Farm. A series of investigation activities have been conducted to estimate the magnitude and extent of these impacts; the most recent investigation occurred in 2014. Contaminants of concern identified in the report include petroleum hydrocarbons in the diesel and heavy oil ranges and PAHs. In the spring of 2016, a pipe leak was discovered directly south of Tank 5 under the catwalk and central piping trunk lines, which resulted in an additional area of petroleum contamination.

Nine areas (designated as A through I) were identified by PGE as potentially requiring removal of petroleum impacted soil within the Beaver Tank Farm (Figures 3 through 10). During execution of this project, the “B” Area was segregated into two areas (B-1 and B-2), giving the site ten areas investigated for potential soil removal. Soil samples collected during previous site investigations identified concentrations of diesel-range petroleum hydrocarbons exceeding the DEQ RBC for construction worker exposure to generic diesel/heating oil. In August 2016, as part of the first stage of the remediation work, 62 borings were completed and 19 soil samples were collected for laboratory analysis to characterize and define the extent of petroleum contamination in each of the ten areas. Field screening and soil sampling was conducted in accordance with the Impacted Soil Delineation Work Plan (Amec Foster Wheeler 2016a). Analytical results and regulatory screening of soil collected during the delineation field investigation were presented in the Work Plan (Amec

Foster Wheeler 2016b). The results of the soil investigation determined that soil removal was not necessary at three of the locations – Areas A, F, and I. This resulted in seven areas requiring soil removal (Areas B-1, B-2, C, D, E, G, and H).

4.3 GROUNDWATER MONITORING

At the request of PGE, groundwater samples were collected from two existing site monitoring wells to support ongoing site assessment activities. Monitoring well locations are shown on Figure 2.

4.3.1 Sampling Activities

Groundwater was sampled from monitoring wells MW-1 and MW-2 on August 2, 2016. The samples were collected with a peristaltic pump with dedicated tubing using United States Environmental Protection Agency (EPA) low-flow sampling techniques (Amec Foster Wheeler 2016a). At each well, field groundwater quality parameters (turbidity, dissolved oxygen, pH, specific conductivity, oxidation reduction potential [ORP], and temperature) were measured and recorded. Groundwater sampling field forms are presented in Appendix A.

The groundwater samples were collected using laboratory-supplied bottles, placed on ice, and transported under Chain of Custody to the contract laboratory, ALS Environmental Laboratory (ALS) in Kelso, Washington, for analysis. The groundwater samples were analyzed for:

- Total petroleum hydrocarbon (TPH) diesel range organics (DRO) and residual range/heavy oil organics (RRO) by method NWTPH-Dx
- TPH gasoline range organics (GRO) by method NWTPH-Gx
- Volatile organic compounds (VOCs) by EPA Method 8260C

The analytical report is provided in Appendix B, and results are presented on Table 1.

4.3.2 Regulatory Screening Criteria

The DEQ developed guidance entitled Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites in 2003. The guidance contains *Table of Risk-Based Concentrations*, which is periodically updated (most recently in November 2015; DEQ 2003). Generic RBCs are included in the table for a variety of exposure scenarios for both petroleum and non-petroleum constituents. Constituent concentrations detected in various media (soil, soil vapor, groundwater, and air) can be compared to generic RBCs as a preliminary risk evaluation step.

Previous environmental investigation reports for this Site have presented a comparison of soil and groundwater analytical results to various RBCs for discussion purposes. Potentially applicable RBCs have been included in Table 1 for discussion.

4.3.3 Groundwater Analytical Results

DRO, RRO, and GRO were detected at monitoring wells MW-1 and MW-2 at concentrations below potentially applicable RBCs.

Tetrachloroethene (PCE) was detected at concentrations of 0.10 J (estimated) micrograms per liter (µg/L; MW-2) and 1.0 µg/L (MW-1). Both detected concentrations were below the most conservative potentially applicable RBC of 48 µg/L. Other VOCs detected include cis-1,2-dichloroethene (MW-2) and toluene (MW-1) at concentrations below their respective RBCs.

5.0 SITE PREPARATION

In preparation of soil removal activities at the seven excavation locations, the following site preparation activities were conducted between August 24 and September 27, 2016. Multiple site preparation activities occurred simultaneously to expedite soil removal activities.

5.1 SIGNAGE INSTALLATION

During mobilization and Site preparation activities, appropriate signage was placed at locations detailed in the Site Traffic Management Plan (Work Plan Appendix D). The signage was used to direct traffic flow for PGE personnel vehicles, project vehicles, and dump trucks on the Site. An example of the signage is provided in the photographic log in Appendix C.

5.2 UTILITY LOCATE

Prior to commencing excavation activities, Applied Professional Services, Inc. of Hillsboro, Oregon was contracted to locate underground utilities in each of the excavation areas. PGE and Amec Foster Wheeler personnel reviewed available as-built drawings for any potential utilities within the excavation areas.

5.3 ELECTRICAL DECOMMISSIONING

Select electrical lines located within and near the footprint of the excavation areas required decommissioning prior to soil removal. The majority of electrical lines, which were temporarily taken out of service consisted of lines to light poles adjacent to the excavations. A PGE-designated electrician ensured all electrical lines to be taken out of service were de-energized and locked

out/tagged out prior to removal per PGE Site-Specific lock-out/tag-out procedures. The PGE-designated electrician will complete their work after the conclusion of the construction work by reconnecting the appropriate electrical lines/conduit to the designated services.

5.4 OSS PIPING DECOMMISSIONING

In order to provide equipment access to portions of the Beaver Tank Farm and excavation areas, sections of out of service (OOS) piping were removed and capped. OOS removal was conducted by Anderson Environmental Contracting, LLC (AEC) of Kelso, Washington using pneumatic and mechanical non-sparking cutting tools (such as electric band saws) per the Work Plan. Removed piping was transported off-site to PNW Metal Recycling in Longview, Washington for recycling. Photographs of pipe removal and capping are provided in Appendix C.

During removal of OOS piping, diesel fuel and Therminol, a heat transfer fluid, was encountered in portions of the Beaver Tank Farm piping. All liquids were recovered by vacuum truck and recycled by Oil Re-Refining Company of Portland, Oregon. A total of 4,578 gallons of fluid was recycled. Disposal receipts are included in Appendix D.

Pipe gaskets and support saddles, which were removed as part of the OOS piping removal work, were tested for potential presence of asbestos. PGE contracted with Jones Stohosky Environmental Laboratory, Inc. of Milwaukie, Oregon to test the gaskets and support saddle materials for bulk asbestos by EPA Method 600 M4-82-020 and EPA Method 600 R-93 116. The analytical results indicated that no asbestos was detected in any of the samples analyzed. The laboratory report is presented in Appendix B.

5.5 FOOTING REMOVAL

Unused concrete footings in the excavation areas that were not supported with micro-piles were removed by AEC to gain access to the underlying contaminated soil. Concrete and associated rebar was segregated from excavated soils and was transported off-site for recycling at Waste Control Recycling of Longview, Washington. Recycling receipts are included in Appendix D. Photographs of footing removal and recycling is included in Appendix C.

5.6 MICRO-PILE INSTALLATION

Prior to excavation work, a visual survey of the support footings was made to determine which foundation bases would have micro-piles installed to support them. Micro-piles were installed on support footings located in excavation areas B-2, C, and D. All of the micro-piles were installed by McDowell Pile King of Kent, Washington. Helical micro-piles were augured into the ground to

depths ranging from 13 to 27 feet below grade. The top of the micro-pile was connected to custom brackets which were bolted into the ends and sides of the adjacent footing to be supported. Concrete anchor bolts and connectors were used to provide a permanent connection to the micro-pile. During installation of each micro-pile, McDowell Pile King recorded final overall length of each pile and installation torque. The McDowell Pile King's installation record is included in Appendix E. Representative photographs showing installation of the micro-piles are included in Appendix C. A typical as-built schematic is provided on Figure 11.

During the excavation and backfilling work, AEC conducted daily level surveys on all footings to monitor elevations of the footings for which micro-piles were installed. These elevations were referenced to permanent elevation control markers in the Beaver Tank Farm area, and were maintained throughout the project. An initial survey (pre-micro pile installation) was used as a benchmark during active excavation to determine if significant settling had occurred. Summary of the initial and final survey (after site restoration) is included in Appendix E. The daily surveys confirmed that no settling or lifting of footings beyond the set tolerances was recorded during Site activities.

5.7 STAGING AREA

The Staging Area for equipment and material storage and handling of PCS was constructed by AEC according to the Work Plan and summarized below. Photographs of the staging area are provided in Appendix C.

Stockpile Area – Soils that were not directly loaded into a dump truck (i.e., soils recovered by the vacuum trucks) were placed in a temporary stockpile area located in the lined eco-block bays in accordance with the specifications and plans detailed in the Transport and Disposal Plan (Appendix F of the Work Plan). All materials and liner were removed from the Stockpile Area at the end of the work.

Loading Area – The Loading Area was constructed so that soils temporarily stockpiled in the Stockpile Area could be loaded into the dump trucks within the Loading Area. The details for the Loading Area were included in the Transport and Disposal Plan in Appendix F of the Work Plan.

6.0 CONSTRUCTION ACTIVITIES

Construction activities began on September 6 and were completed on November 8, 2016. The construction activities are described in the following sections. A photographic log of construction activities is provided in Appendix C.

6.1 EXCAVATION OF CONTAMINATED SOILS

PCS was excavated from seven areas in the Beaver Tank Farm as shown on Figures 5 through 9. Excavation and soil handling was completed by AEC using the following three methods:

a) Excavator – Mechanical excavators of different sizes were used to access the selected excavation areas and remove soils from the ground and directly load them into dump trucks. This method removed the majority of the PCS.

b) Vacuum Truck – A vacuum truck with associated hoses and stinger extensions was used to recover soils located in limited access locations such as around and near concrete footings. The soils were collected in the truck's internal tank and then transferred to the Stockpile Area for temporary storage. The majority of the limited access PCS were removed using this method.

c) Hand Digging – Limited locations near concrete footings required manual digging with shovels. The soils removed via manual excavation was collected by the vacuum truck and transferred to the Stockpile Area.

Soils were excavated to an average depth of 5 to 6 feet below ground surface, or when perched groundwater was observed in the cavity, whichever occurred first. Some excavations extended only to approximately 3 feet while others to almost 7 feet, depending upon the extent of soil contamination and groundwater. Amec Foster Wheeler visually observed soil conditions during excavation activities to assist in identification of impacted versus non-impacted soils, and to help determine when impacted soils had been sufficiently removed so that confirmation samples could be collected, as detailed in Section 6.2. If detections of DRO in the confirmation samples were above the generic diesel/heating oil screening value of 4,600 mg/kg, additional soils were removed to the extent practical.

The estimated extent of the seven excavation areas have been mapped on Figures 5 to 9. A total of 2,205.4 cubic yards of PCS was removed (8.9 cubic yards Area B-1, 348.4 cubic yards Area B-2, 184.7 cubic yards Area C, 1594 cubic yards Area D, 16.7 cubic yards Area E, 11.1 cubic yards Area G, and 41.6 cubic yards Area H). Figure 11 shows a generic cross section of a typical excavation showing the relative depths, backfill materials, and micro-pile configuration.

Due to geotechnical concerns, PCS removal was not allowed within 10 feet of the base of any of the above ground storage tanks (ASTs). The scope of work restricted the vertical extent of the excavations to approximately 5 to 7 feet (i.e., water table). PCS remain in limited portions of excavations B-2, C, D, E, G, and H above the generic diesel/heating oil screening value of 4,600 mg/kg.

6.2 CONFIRMATION SAMPLING

Confirmation soil samples were collected from the base and sidewalls of each of the excavations to characterize the soils remaining below and around the perimeter of the excavations. A total of 32 confirmation samples were collected from the seven excavation areas.

The confirmation samples were collected using laboratory-supplied bottles, placed on ice, and transported under Chain of Custody to the contract laboratory, Apex Laboratories, LLC of Tigard, Oregon, for analysis. The confirmation samples were analyzed for TPH DRO and RRO by method NWTPH-Dx. Select confirmation samples were also analyzed for PAHs by EPA Method 8270CSIM. The analytical report is provided in Appendix B and results are presented on Table 2 and Figures 5 through 9.

Confirmation samples collected from excavation areas B-1 and C were non-detect for DRO (Table 2; Figures 5 and 6).

Concentrations of DRO, from confirmation samples collected from the base of excavations at B-2, D, E, G and H, were above the screening value of 4,600 mg/kg (Table 2; Figures 7 and 9). Due to screening level exceedances at depths greater than 5 feet (i.e., the water table) and excavation constraints at excavations B-2, D, E, G, and H, no additional PCS removal was conducted.

6.3 BIOREMEDIATION AMENDMENT

Due to the presence of PCS at depths greater than 5 feet (i.e., the water table) and excavation constraints at excavations B-2, C, D, E, G, and H, PGE opted to apply bioremediation amendment prior to backfilling them. Environmental Technologies, LLC (Etec) of Washougal, Washington was contracted to apply a biological enhancement solution to the base of the excavations. Etec applied their solution of TPH Bacterial Consortium (EZT-A2™) and Enzyme Accelerator (EZT-EA™) to the six excavation cavities on a per square foot basis relative to the average remaining concentration of TPH. Application of the bioremediation amendment occurred between September 21 and October 26, 2016. A double application was applied to excavations E, G, and H due to their small size and limited access after restoration work. Safety Data Sheets (SDS) for the applied solution is provided in Appendix F.

6.4 WASTE MANAGEMENT

Petroleum impacted soils were transported by truck to Riverbend Landfill located in McMinnville, Oregon operated by Waste Management Services. A total of 3,689.25 tons of soil were disposed of at the Riverbend Landfill. A summary of each load of soil transported to the landfill is included in

Appendix D. The landfill measures the soils on a per ton basis. Based upon our estimates of volume removed, the average density of material was approximately 1.6 tons per cubic yard.

6.5 STORMWATER MANAGEMENT

Rain events occurred during excavation activities; resulting in the need for management of stormwater within and near the excavations. BakerCorp of Portland, Oregon was contracted to provide a 20,000-gallon storage tank, filters, and treatment of stormwater to meet PGE's National Pollutant Discharge Elimination System (NPDES) permit. Photographs of the stormwater management system are provided in Appendix C. Prior to demobilizing the stormwater treatment equipment, AEC drained the tank and cleaned the remaining sludge. This material was placed into a dump truck with additional sand and transported to the Riverbend Landfill facility for disposal under the same profile as the excavated soils. The disposal receipt is included in Appendix D.

6.6 RESTORATION ACTIVITIES

Excavations were backfilled following receipt of confirmation sample results meeting project objectives or after Etec's placement of the bioremediation amendment. Restoration activities were completed between October 3 and November 2, 2016. The backfill material was placed in the following layers at all of the excavation areas:

- Base Layer – The layer from the base of the excavation to approximately 10 inches below grade consisted of a well graded coarse sand material placed and compacted in 1-foot lifts. In locations where compaction was not possible due to access, controlled density fill (CDF) was used to fill the area.
- Liner Layer – The original clay layer was replaced with a CETCO Bento-mat geosynthetic clay liner (GCL) consisting of a layer of bentonite sealing clay layered between synthetic fiber layers. The GCL complied or exceeded the original clay layer specifications (see attached specifications in Appendix G). The GCL was keyed into the surrounding clay layers in order to maintain the continuous impermeable layer in the Beaver Tank Farm. The GCL was folded upwards around the footings as shown in Figure 11.
- Top layer – The top layer consisted of a clean crushed rock of ¾-inch to 1.5-inch diameter rocks. This layer was placed on top of the Liner Layer and constitute the final 4 to 8-inch layer on the top of the excavation.

All materials were placed in a manner that, when compacted, each layer formed a homogeneous mass free from lenses, pockets, streaks, and layers of material differing substantially in texture and graduation from other fill material. In areas beneath the concrete footings a flowable, self-leveling, and self-compacting controlled density fill (CDF) backfill material was used. The CDF was placed

so that it completely filled the area beneath the footings. Figure 11 depicts the typical restoration for the Beaver Tank Farm excavations. Final volume of each of the materials used to restore the excavations is provided in Appendix G. Photographs of restoration activities are included in Appendix C.

6.7 DEMOBILIZATION

The site was restored to pre-construction conditions by removing all construction equipment, laydown materials, and other materials brought to the Site to conduct the work. Excess clean sand and crushed rock remaining after restoration work was placed into the empty eco-block bays as approved by PGE.

Additional demobilization work included grading areas damaged by construction equipment, surface rock application where work had thinned out the material, collecting all garbage and debris, restoration of two of the access ramps, and uncovering and improving two drainage lines in the SE corner of the Tank Farm. All construction equipment and materials were demobilized by November 8, 2016.

6.8 CHANGES TO WORK PLAN

During implementation of the soil removal action, multiple changes and additions to the Work Plan occurred, as summarized below.

- Petroleum Fluids in OSS – The Work Plan assumed that OOS pipe scheduled for removal were free of liquids. During implementation of the Work Plan, diesel and Therminol were recovered and recycled off-site as discussed in Section 5.4.
- GCL Substitution – The Work Plan proposed the installation of a uniform clay material of a uniform 12-inch thick layer over the base layer. This layer was replaced with the CETCO Bento-mat GCL liner which was specified in the original request for proposal. The clay liner specification required it to have a minimum peel strength of 1 pound per inch (lb/in; determined in accordance with ASTM Standard (ASTM) D 6496), and a maximum flux (determined in accordance with ASTM D 5993) of 1 x 10-8 m^3/m^2.
- Stormwater Total Suspended Solids (TSS) – Due to heavy fall rains and surface exposure of impacted soils, it was necessary to mobilize the Baker Tank treatment system to reduce the total suspended solids loading into PGE's stormwater discharge system. Using a holding tank and filters, the water turbidity was reduced from approximately 350 nephelometric turbidity units (NTUs) to levels consistently below 30 NTUs. This allowed for discharge to comply with turbidity standards. The system was run until the end of the

construction period to capture the bulk of the fines washed out of the construction zone and into the Site stormwater management system.

- Bioremediation Amendment Applications – In order to further reduce residual TPH concentrations in selected excavations, PGE elected to apply a bioremediation amendment. The estimated dosages were based on excavation footprint and the type and average concentration of the remaining TPH. The small excavations were given a double dose due to size and limited access.

7.0 CONCLUSIONS

The original objective of this project was to remove heavily impacted PCS from ten excavations. Based upon the soil investigation and the excavation work conducted, the following results for each location is summarized below:

- Three excavation locations, A, F, and I, were determined to have concentrations of DRO below screening criteria (4,600 mg/kg) and did not require soil removal (Amec Foster Wheeler 2016b).
- Excavation of soil at areas B-1 and C successfully removed DRO to non-detect concentrations (Table 2; Figures 5 and 6).
- Excavations of PCS at E, G, and H were limited to the base of the footings (which is approximately 3-feet below grade) at the request of PGE. Etec applied a double dose of bioremediation amendment to each of these locations to enhance biodegradation of remaining DRO (Table 2; Figures 7 and 9).
- Remaining PCS at B-2 is limited to a small area on the southeast corner of the excavation (Table 2 and Figure 5). Etec applied a standard dose of their amendment to B-2 to enhance biodegradation of remaining DRO.
- Multiple areas of PCS remain within excavation D due to structural considerations of the adjacent Tank 3 (borings D-9 and D-10; Figure 8) and detections of DRO exceeding RBCs at the base of the excavation. Confirmation samples collected at the base of the excavation were collected at or near the water table (Table 2 and Figure 8). Etec applied a standard dose of their amendment to excavation D to enhance biodegradation of remaining DRO.
- The micro-pile approach was successful in maintaining all of the catwalk and piping/electrical support structures throughout the project. Daily survey data of the footings before, during, and after the construction work confirms that settlement/uplift of the footings was within acceptable tolerances.
- Site restoration activities successfully refurbished site conditions to their pre-construction state.

REFERENCES

Amec Foster Wheeler 2016a. Impacted Soil Delineation Work Plan, PGE Beaver Generating Plant, 80997 Kallunki Road, Clatskanie, Oregon, July 29, 2016.

Amec Foster Wheeler 2016b. Soil Remediation Work Plan, PGE Beaver Generating Plant, 80997 Kallunki Road, Clatskanie, Oregon, August 25, 2016.

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CH2MHill 2015. Portland General Electric Beaver Tank Farm Subsurface Investigation and Remediation Estimate; January 2015.

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URS 2010. Subsurface Soil and Groundwater Investigation, Tank Farm Pipe Release Area, Beaver Generating Station, Clatskanie, Oregon, February 8, 2010.

LIMITATIONS

This Construction Completion Report was prepared exclusively for the Portland General Electric (PGE) by Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in Amec Foster Wheeler services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Construction Completion Report is intended to be used by Portland General Electric for the Beaver Generating Plant only, subject to the terms and conditions of its contract with Amec Foster Wheeler. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

TABLES

TABLE 1
Groundwater Analytical Results
PGE Beaver Generating Plant
Clatskanie, Oregon

		NWTPH-Dx		NWTPH-Gx	Volatile Organic Compounds EPA 8260C																																	
Screening Criteria: DEQ RBCs for Groundwater		Diesel-Range Organics	Residual-Range/Heavy Oil Organics	Gasoline Range Organics	Acetone	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	2-Butanone (MEK)	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	2-Chlorotoluene	4-Chlorotoluene	Dibromochloromethane	Dibromomethane	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane (EDB)	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane	1,1-Dichloroethane	1,2-Dichloroethane (EDC)	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,2-Dichloropropane
Ingestion & Inhalation from Tapwater - Occupational		430	1,300	450	NA	2.1	NA	NA	0.6	16	36	NA	NA	NA	NA	NA	2.1	350	88,000	0.98	790	NA	NA	0.77	NA	NA	0.034	1,400	NA	2.1	NA	13	0.78	1,400	260	2,600	NA
Volatilization to Outdoor Air - Occupational		>S	>S	>S	NA	14,000	NA	NA	6000	550,000	130,000	NA	NA	NA	NA	NA	7,700	>S	>S	6,300	1,800,000	NA	NA	17,000	NA	NA	790	>S	NA	21,000	NA	68,000	9,000	2,400,000	>S	>S	NA
Vapor intrusion into Buildings - Occupational		>S	>S	>S	NA	2,800	NA	NA	2300	470,000	27,000	NA	NA	NA	NA	NA	1,200	>S	>S	1,600	330,000	NA	NA	13,000	NA	NA	590	>S	NA	7,100	NA	14,000	3,900	360,000	>S	>S	NA
Excavation - Construction & Excavation Workers		>S	>S	14,000	NA	1,800	NA	NA	450	14,000	1200	NA	NA	NA	NA	NA	1,800	10,000	2,400,000	720	22,000	NA	NA	610	NA	NA	27	37,000	NA	1,500	NA	10,000	630	44,000	18,000	180,000	NA
Sample Location	**Sample Date**	µg/L																																				
MW-1	8/2/2016	**30 J**	**120 J**	**12 J**	20 U	0.50 U	2.0 U	0.50 U	0.50 U	0.50 U	0.50 U	20 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	0.50 U	0.50 U	2.0 U	*2.0 U*	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
MW-2	8/2/2016	**25 J**	**54 J**	**11 J**	20 U	0.50 U	2.0 U	0.50 U	0.50 U	0.50 U	0.50 U	20 U	2.0 U	2.0 U	2.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	0.50 U	0.50 U	2.0 U	*2.0 U*	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.11 J**	0.50 U	0.50 U

TABLE 1
Groundwater Analytical Results
PGE Beaver Generating Plant
Clatskanie, Oregon

		Volatile Organic Compounds EPA 8260C																													
Screening Criteria: DEQ RBCs for Groundwater		1,3-Dichloropropane	2,2-Dichloropropane	1,1-Dichloropropene	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	Hexachlorobutadiene	2-Hexanone	Isopropylbenzene	4-Isopropyltoluene	Methylene Chloride	4-Methyl-2-pentanone (MIBK)	Naphthalene	n-Propylbenzene	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,1-Trichloroethane (TCA)	1,1,2-Trichloroethane	Trichloroethene (TCE)	Trichlorofluoromethane	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl Chloride	m,p-Xylenes*	o-Xylene*
Ingestion & Inhalation from Tapwater - Occupational		NA	NA	NA	NA	NA	6.4	NA	NA	2,000	NA	NA	NA	0.72	NA	5,700	NA	NA	48	6,300	NA	NA	37,000	1.3	3.3	5,200	NA	61	600	0.49	830	830
Volatilization to Outdoor Air - Occupational		NA	NA	NA	NA	NA	43,000	NA	NA	>S	NA	NA	NA	16,000	NA	>S	NA	NA	>S	>S	NA	NA	>S	21,000	20,000	>S	NA	>S	>S	5,900	>S	>S
Vapor intrusion into Buildings - Occupational		NA	NA	NA	NA	NA	8,200	NA	NA	>S	NA	NA	NA	11,000	NA	>S	NA	NA	48,000	>S	NA	NA	>S	11,000	3,700	460,000	NA	>S	>S	880	>S	>S
Excavation - Construction & Excavation Workers		NA	NA	NA	NA	NA	4,500	NA	NA	51,000	NA	NA	NA	500	NA	170,000	NA	NA	5,600	220,000	NA	NA	1,100,000	49	3,000	160,000	NA	1,700	15,000	960	14,000	14,000
Sample Location	**Sample Date**	µg/L																													
MW-1	8/2/2016	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	20 U	2.0 U	2.0 U	2.0 U	20 U	*2.0 U*	2.0 U	0.50 U	0.50 U	0.50 U	**1.0**	**0.11 J**	2.0 U	2.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	*0.50 U*	0.50 U	0.50 U
MW-2	8/2/2016	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	20 U	2.0 U	2.0 U	2.0 U	20 U	*2.0 U*	2.0 U	0.50 U	0.50 U	0.50 U	**0.10 J**	0.50 U	2.0 U	2.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	*0.50 U*	0.50 U	0.50 U

Acronyms/Abbreviations:
Bold text = analyte detected
NA = RBC has not been published for this constituent.
>S = This groundwater RBC exceeds the solubility limit.
DEQ = Oregon Department of Environmental Quality
RBC = Oregon Risk-Based Concentration, published by DEQ, last updated November 2015.
*RBC only listed for total xylenes
Highlight = analyte exceeds one or more RBCs
Italics = analyte not detected, but the reporting limit exceeds one or more RBCs
µg/L = micrograms per liter

Qualifier Definitions:
U = The analyte was analyzed for, but was not detected above the sample reporting limit
J = The result is an estimated value

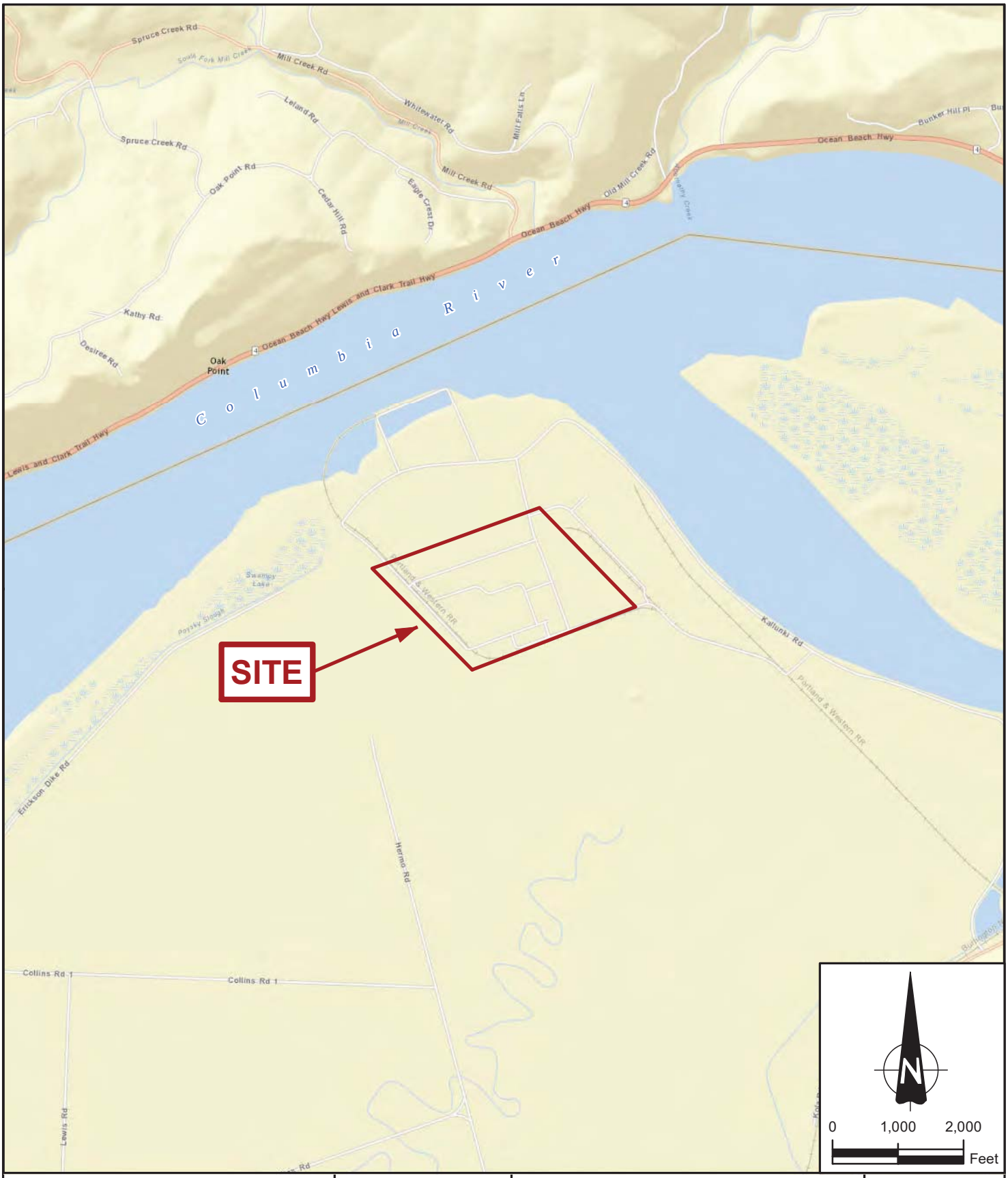
TABLE 2
Confirmation Soil Analytical Results
PGE Beaver Generating Plant
Clatskanie, Oregon

				NWTPH-Dx		PAHs[1]											
Screening Criteria: DEQ RBCs for Soil				Diesel-Range Organics	Residual-Range/Heavy Oil Organics	Acenaphthene	Benz[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Chrysene	Dibenz[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Pyrene
Soil Ingestion, Dermal Contact, and Inhalation - Construction Worker				4,600	NA	21,000	24	2.4	24	240	2,400	2.4	10,000	14,000	24	580	7,500
Area	Sample ID	Sample Date	Sample Location/Depth (feet bgs)	mg/Kg													
B1	B1-B1-090916	9/9/2016	Base of Excavation - 3	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B2	B-2-B1-3ft-092016	9/20/2016	Base of Excavation - 3	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B2	B-2-B2-3ft-092016	9/20/2016	Base of Excavation - 3	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B2	B-2-B3-3ft-092016	9/20/2016	Base of Excavation - 3	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B2	B2-B4-5ft-092116	9/21/2016	Base of Excavation - 5	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B2	B2-B4-7ft-092116	9/21/2016	Base of Excavation - 7	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B2	B2-S1-3ft-092116	9/21/2016	Side Wall - 3	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B2	B2-S-2-5ft-East-101216	10/12/2016	Side Wall - 5	**76.6**	50.0 U	0.0999 U	0.0999 U	0.0999 U	0.0999 U	0.0999 U	0.0999 U	0.0999 U	0.0999 U	0.0999 U	0.0999 U	0.0999 U	0.0999 U
B2	B2-S-3-5ft-South-101216	10/12/2016	Side Wall - 5	**5,300**	474 U	0.970 U	0.0539 U	0.0539 U	0.0539 U	0.0539 U	0.0539 U	0.0539 U	**0.0656**	**2.15**	0.0539 U	0.124 U	**0.069**
B2	B2-S-4-5ft-West-101216	10/12/2016	Side Wall - 5	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C	C-B1-3.5ft-092616	9/26/2016	Base of Excavation - 3.5	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C	C-S1-3ft-092616	9/26/2016	Side Wall - 3	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C	C-S2-3ft-092616	9/26/2016	Side Wall - 3	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C	C-B2-6ft-09302016	9/30/2016	Base of Excavation- 6	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C	C-B3-4ft-09302016	9/30/2016	Base of Excavation- 4	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C	C-S3-4.5ft-09302016	9/30/2016	Side Wall - 4.5	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C	C-S4-4ft-09302016	9/30/2016	Side Wall - 4	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
D	D-B1-7ft-092216	9/22/2016	Base of Excavation - 7	**8,750**	1,120 U	4.020 U	0.211 U	0.211 U	0.211 U	0.211 U	0.211 U	0.211 U	**0.266**	**8.150**	0.211 U	0.529 U	**0.720**
D	D-S1-5ft-092316	9/23/2016	Side Wall - 5	**547**	50.0 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U
D	D-B2-6.5ft-092316	9/23/2016	Base of Excavation - 6.5	25.0 U	**59.5**	0.0113 U	0.0113 U	0.0113 U	**0.0223**	0.0113 U	**0.0233**	0.0113 U	**0.035**	0.0113 U	0.0113 U	**0.463**	**0.0243**
D	D-S2-5ft-092316	9/23/2016	Side Wall - 5	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
D	D-S-5-7ft-West-102416	10/24/2016	Side Wall - 7	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
D	D-S-6-7ft-NW-102416	10/24/2016	Side Wall - 7	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
D	D-S-7-6.5ft-NE-102416	10/24/2016	Side Wall - 6.5	25.0 U	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
D	D-S-8-6.5ft-East-102416	10/24/2016	Side Wall - 6.5	**39.8**	50.0 U	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
D	D-B-3-7ft-101916	10/19/2016	Base of Excavation - 7ft	**21,700**	479 U	3.480 U	0.217 U	0.217 U	0.217 U	0.217 U	0.239 U	0.217 U	**0.340**	**7.600**	0.217 U	**35.200**	**0.867**
D	D-S-3-5.5ft-West-101916	10/19/2016	Side Wall - 5.5	**2,700**	50.0 U	0.537 U	0.011 U	0.011 U	0.011 U	0.011 U	0.0175 U	0.011 U	**0.0481**	**1.220**	0.011 U	0.121 U	**0.127**
D	D-S-4-6ft-East-101916	10/19/2016	Side Wall - 6	**384**	50.0 U	0.0576 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U	**0.133**	0.0113 U	0.0237 U	**0.016**
D	D-B-4-7ft-101916	10/19/2016	Base of Excavation - 7ft	**33,500**	2,150 U	4.560 U	0.495 U	0.495 U	0.495 U	0.495 U	0.495 U	0.495 U	0.495 U	**10.400**	0.495 U	1.590 U	**1.040**
E	Area-E-090616	9/6/2016	Base of Excavation - 3	**10,600**	844 U	1.730 U	0.211 U	0.211 U	0.211 U	0.211 U	0.211 U	0.211 U	0.211 U	**4.300**	0.211 U	**11.200**	0.211 U
G	Area-G-090616	9/6/2016	Base of Excavation - 3	**21,000**	811 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	**1.210**
H	H-B1-4.5ft-092016	9/20/2016	Base of Excavation - 4.5	**8,030**	839 U	0.820 U	0.186 U	0.186 U	0.186 U	0.186 U	0.186 U	0.186 U	0.186 U	0.689 U	0.186 U	0.335 U	**0.699**

Acronyms/Abbreviations:
Bold text = analyte detected
PAHs = Polycyclic aromatic hydrocarbons
NWTPH-Dx = Northwest total petroleum hydrocarbons - diesel range
bgs = below ground surface
NA = RBC has not been published for this constituent.
NT = Not tested
RBC = Oregon Risk-Based Concentration, published by Oregon Department of Environmental Quality, last updated November 2015.
mg/Kg = milligrams per kilogram
[1] = Not all detected PAHs are included in this summary table.

Qualifier Definitions:
U = The analyte was analyzed for, but was not detected above the sample reporting limit
J = The result is an estimated value

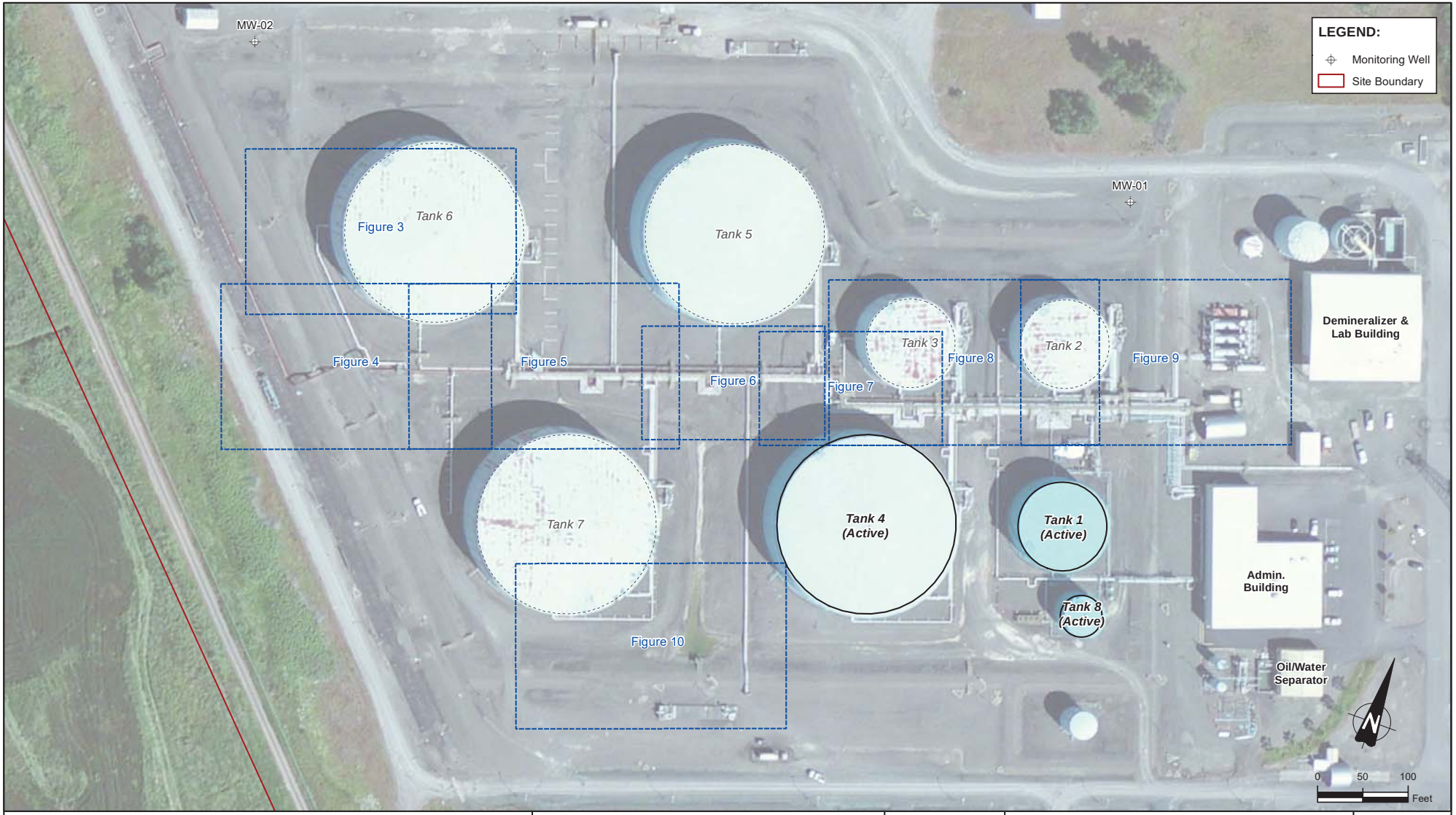
FIGURES



PORTLAND GENERAL ELECTRIC	amec foster wheeler	BEAVER TANK FARM CONSTRUCTION COMPLETION REPORT	DATE DECEMBER 2016
			SCALE 1 " = 2,000 feet
Amec Foster Wheeler Environment & Infrastructure, Inc. 7376 S.W. Durham Road Portland, OR 97224		SITE LOCATION MAP	PROJECT NO. 6-61M-13296-0.01
			FIGURE 1

DRAWN BY: SD CHECKED BY: CB

K:\13000\13200\13296\132960\DWG_Completion_Report\Figure 1 - Site Location Map.mxd - stephane.descombes - 12/5/2016 - 10:21:32 AM



PORTLAND GENERAL ELECTRIC

Amec Foster Wheeler
Environment & Infrastructure, Inc.
7376 S.W. Durham Road
Portland, OR 97224

amec foster wheeler

BEAVER TANK FARM
CONSTRUCTION COMPLETION REPORT

SITE PLAN

DATE	DECEMBER 2016
SCALE	1 " = 100 '
PROJECT NO.	6-61M-13296-0.01
FIGURE	2

DRAWN BY: SD CHECKED BY: CB

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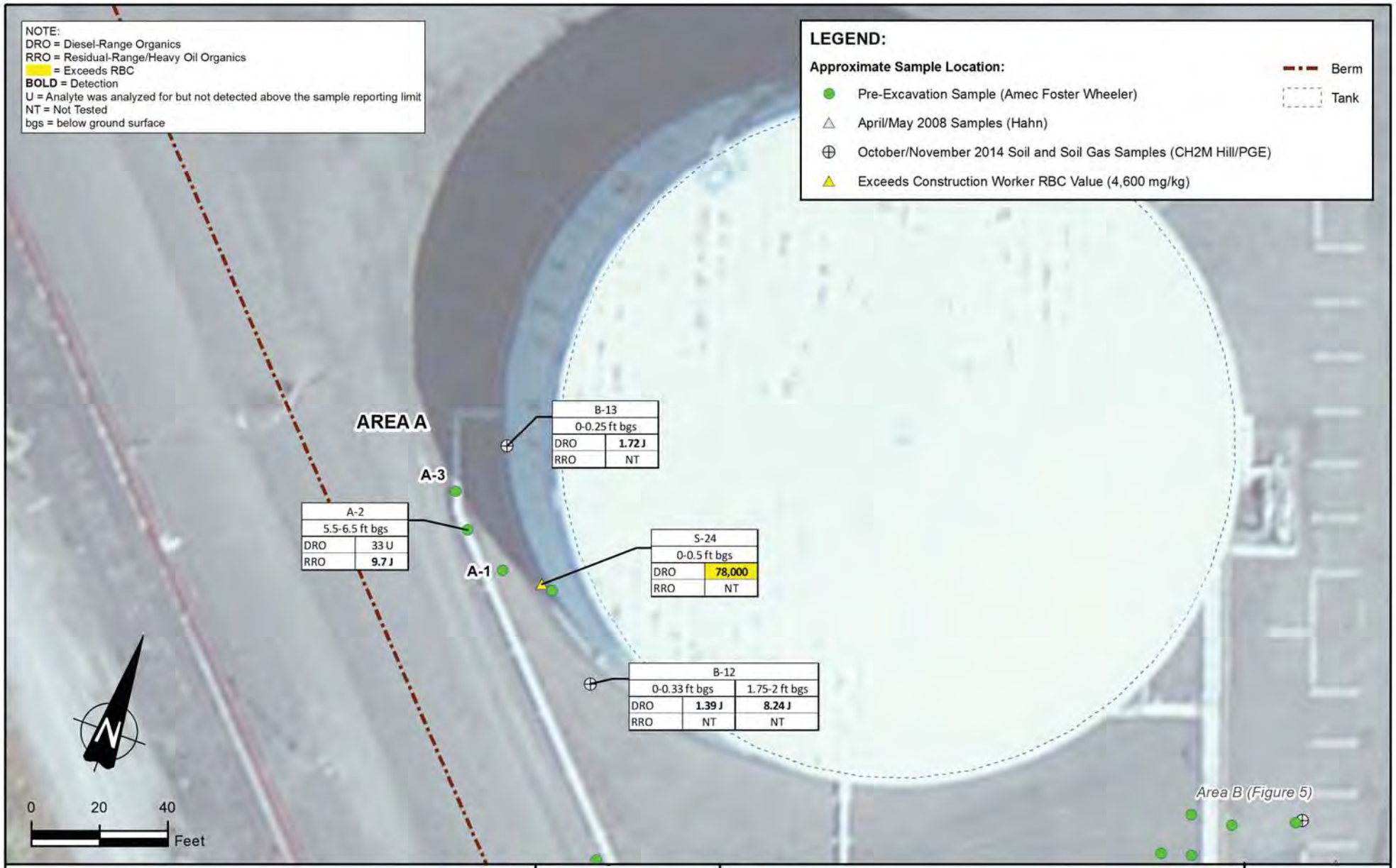
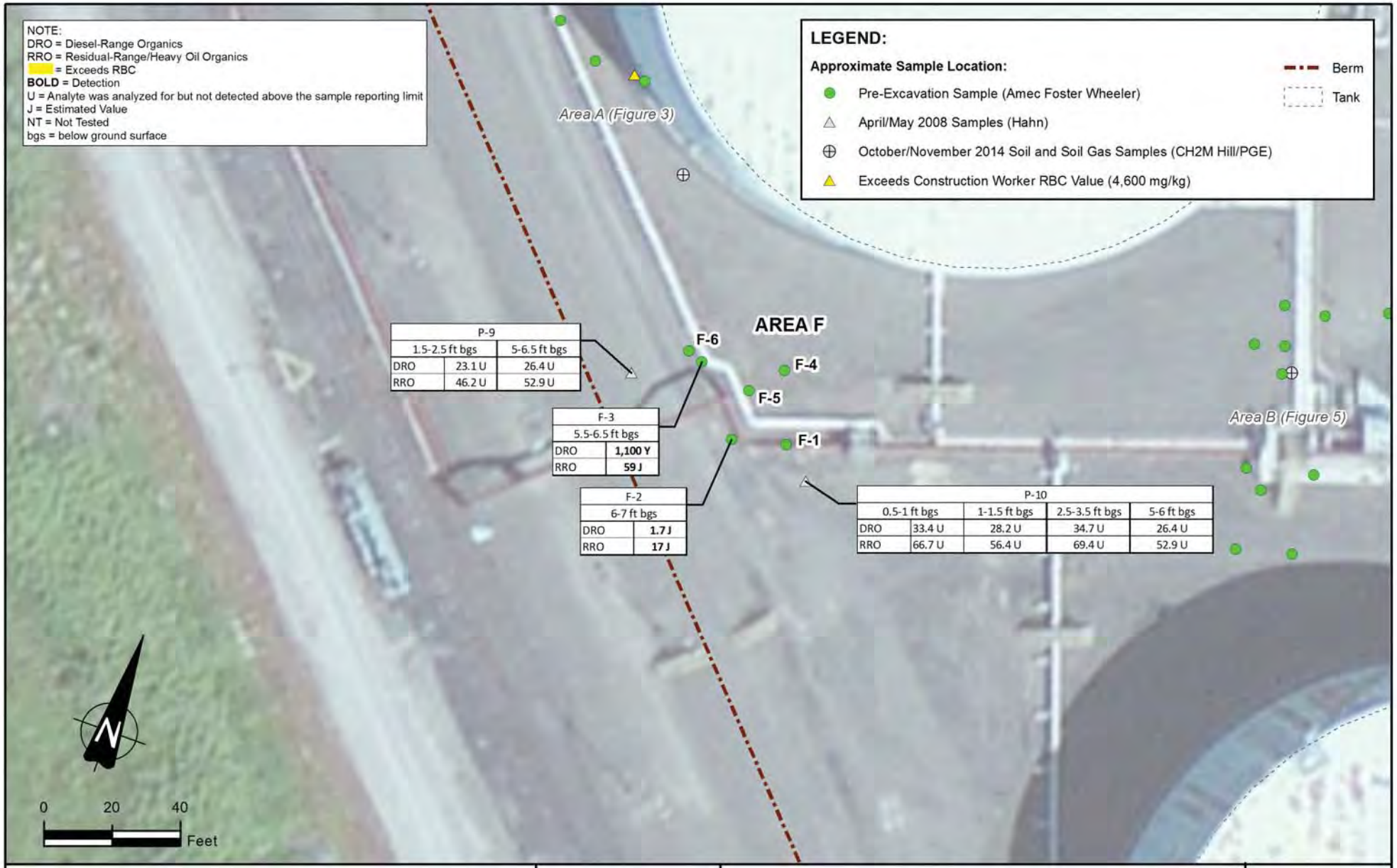


PORTLAND GENERAL ELECTRIC	amec foster wheeler	BEAVER TANK FARM CONSTRUCTION COMPLETION REPORT	DATE DECEMBER 2016
			SCALE 1 " = 40 '
Amec Foster Wheeler Environment & Infrastructure, Inc. 7376 S.W. Durham Road Portland, OR 97224		EXCAVATION AREA A	PROJECT NO. 6-61M-13296-0.01
			FIGURE 3

DRAWN BY: SD CHECKED BY: CB

K:\13000\13200\13296\132960\DWG_Completion_Report\Figure 3 - Work Plan Excavations - Area A.mxd - stephane.descombes - 12/5/2016 - 9:43:24 AM



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Portland, OR 97224

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BEAVER TANK FARM
CONSTRUCTION COMPLETION REPORT

EXCAVATION AREA F

DATE
DECEMBER 2016

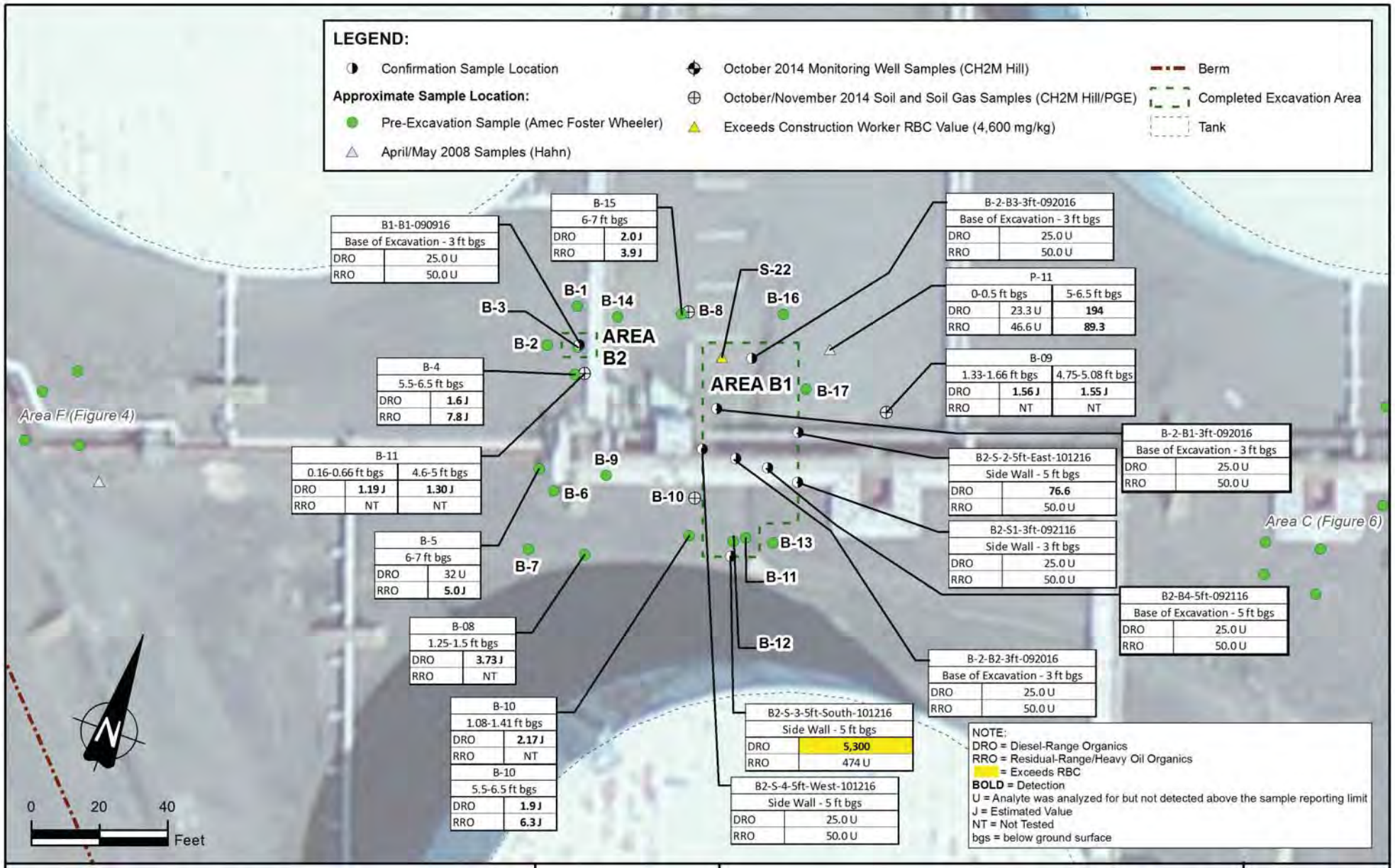
SCALE
1 " = 40 '

PROJECT NO.
6-61M-13296-0.01

FIGURE
4

DRAWN BY: SD CHECKED BY: CB

K:\13000\13200\13296\132960\DWG_Completion_Report\Figure 4 - Work Plan Excavations - Area F.mxd - stephane.descombes - 12/5/2016 - 9:46:18 AM



PORTLAND GENERAL ELECTRIC	BEAVER TANK FARM CONSTRUCTION COMPLETION REPORT	DATE DECEMBER 2016
		SCALE 1 " = 40 '
Amec Foster Wheeler Environment & Infrastructure, Inc. 7376 S.W. Durham Road Portland, OR 97224	EXCAVATION AREA B1 & B2	PROJECT NO. 6-61M-13296-0.01
		FIGURE 5

DRAWN BY: SD CHECKED BY: CB

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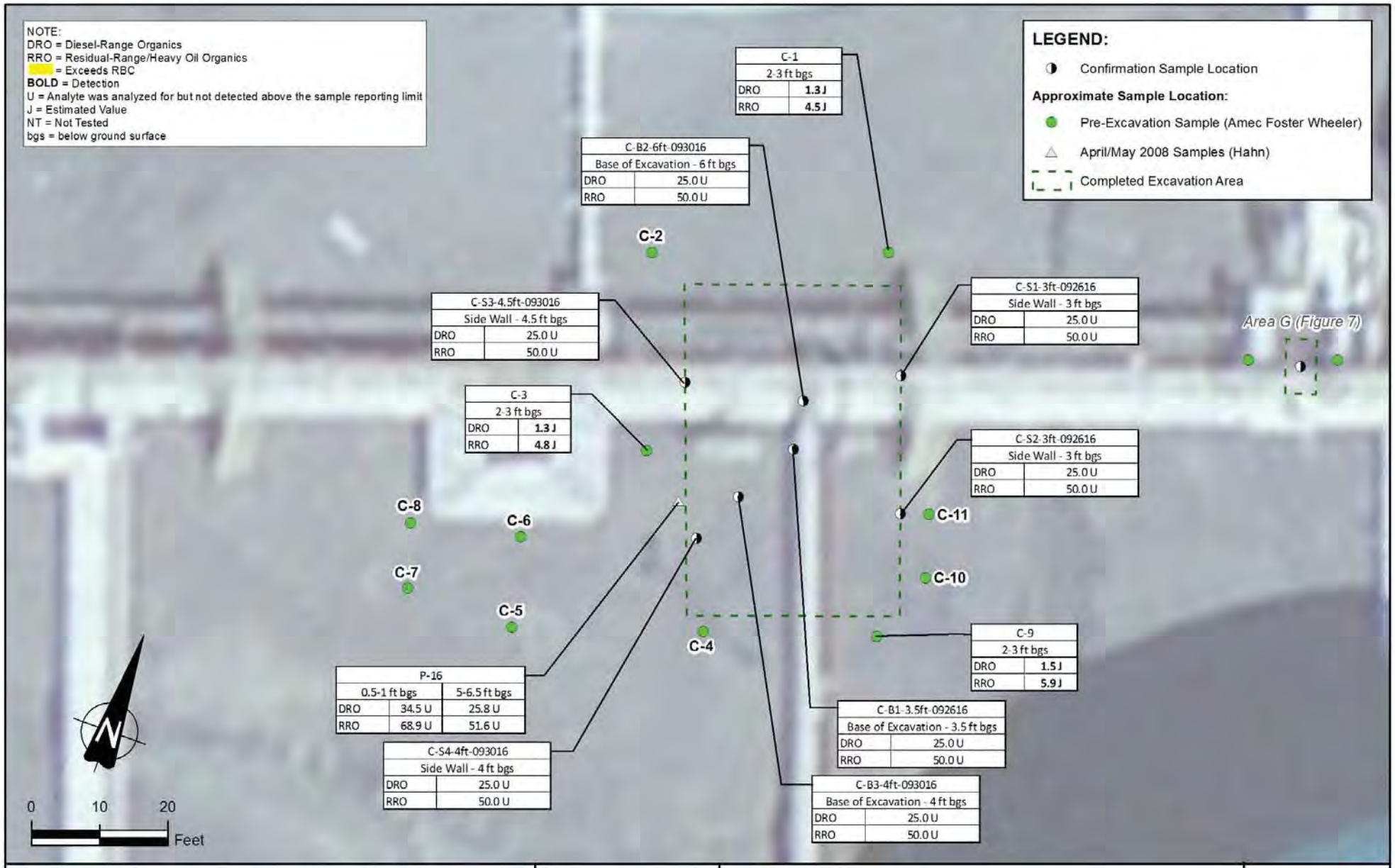
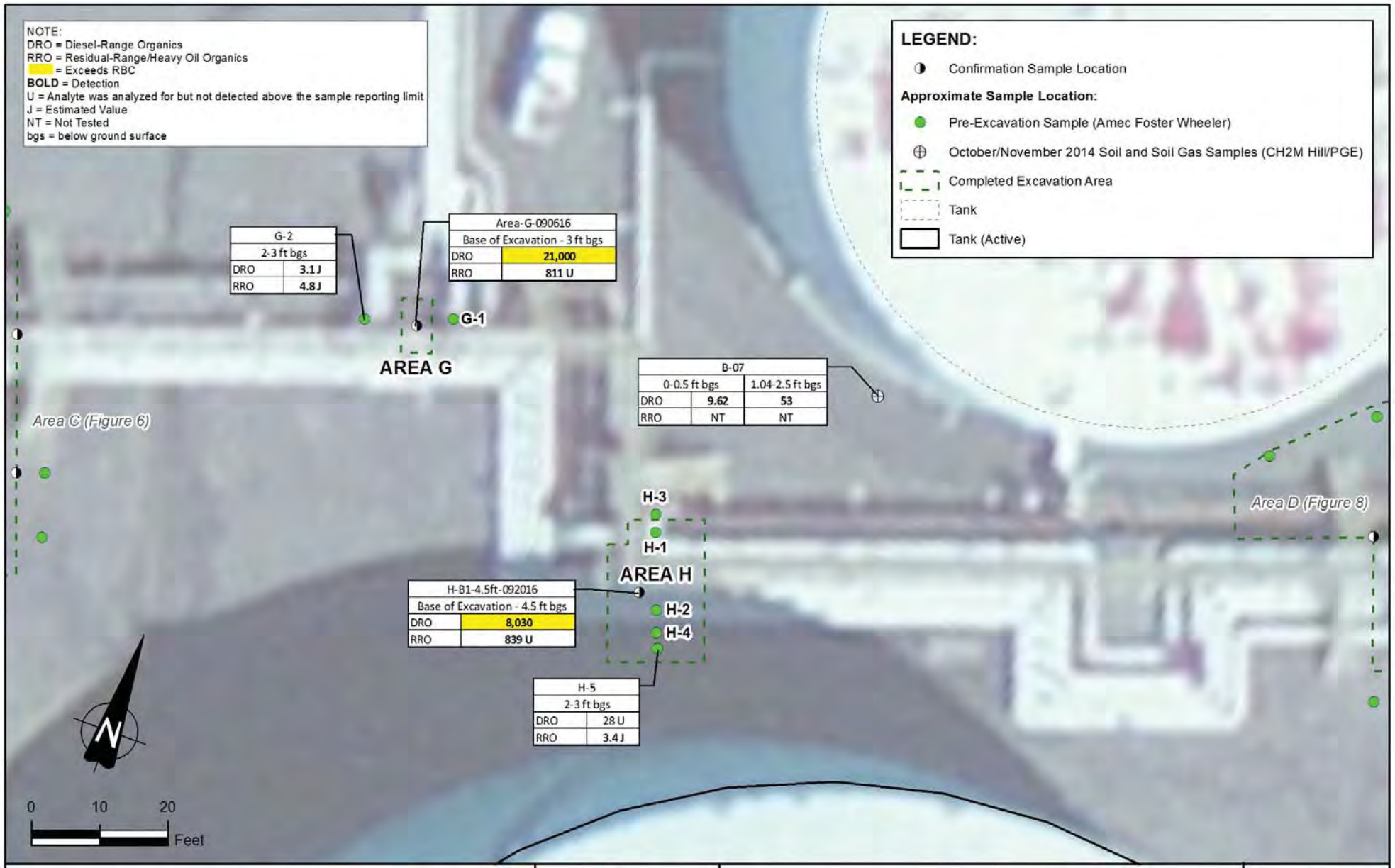


PORTLAND GENERAL ELECTRIC		BEAVER TANK FARM CONSTRUCTION COMPLETION REPORT
Amec Foster Wheeler Environment & Infrastructure, Inc. 7376 S.W. Durham Road Portland, OR 97224	amec foster wheeler	EXCAVATION AREA C

DATE: DECEMBER 2016
SCALE: 1" = 20'
PROJECT NO.: 6-61M-13296-0.01
FIGURE: 6

DRAWN BY: SO CHECKED BY: CB

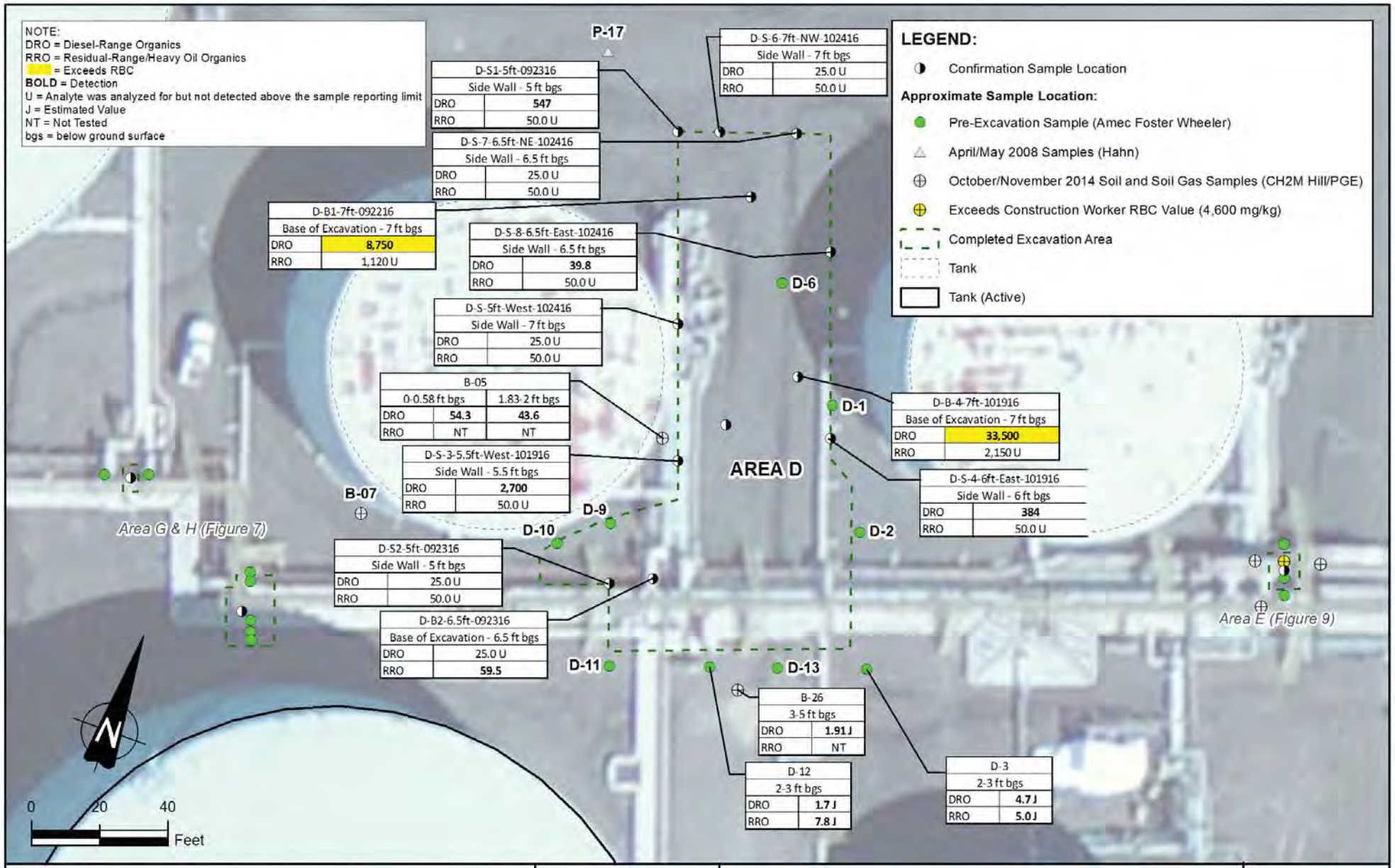
K:\13000\13200\13296\132960\DWG_Completion_Report\Figure 6 - Work Plan Excavations - Area C.mxd - stephane.descombes - 12/5/2016 - 9:56:50 AM



PORTLAND GENERAL ELECTRIC	amec foster wheeler	BEAVER TANK FARM CONSTRUCTION COMPLETION REPORT	DATE DECEMBER 2016
			SCALE 1 " = 20 '
Amec Foster Wheeler Environment & Infrastructure, Inc. 7376 S.W. Durham Road Portland, OR 97224		EXCAVATION AREAS G & H	PROJECT NO. 6-61M-13296-0.01
			FIGURE 7

DRAWN BY: SO CHECKED BY: CB

K:\13000\13200\13296\132960\DWG_Completion_Report\Figure 7 - Work Plan Excavations - Areas G-H.mxd - stephane.descombes - 12/5/2016 - 10:27:16 AM



PORTLAND GENERAL ELECTRIC

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7376 S.W. Durham Road
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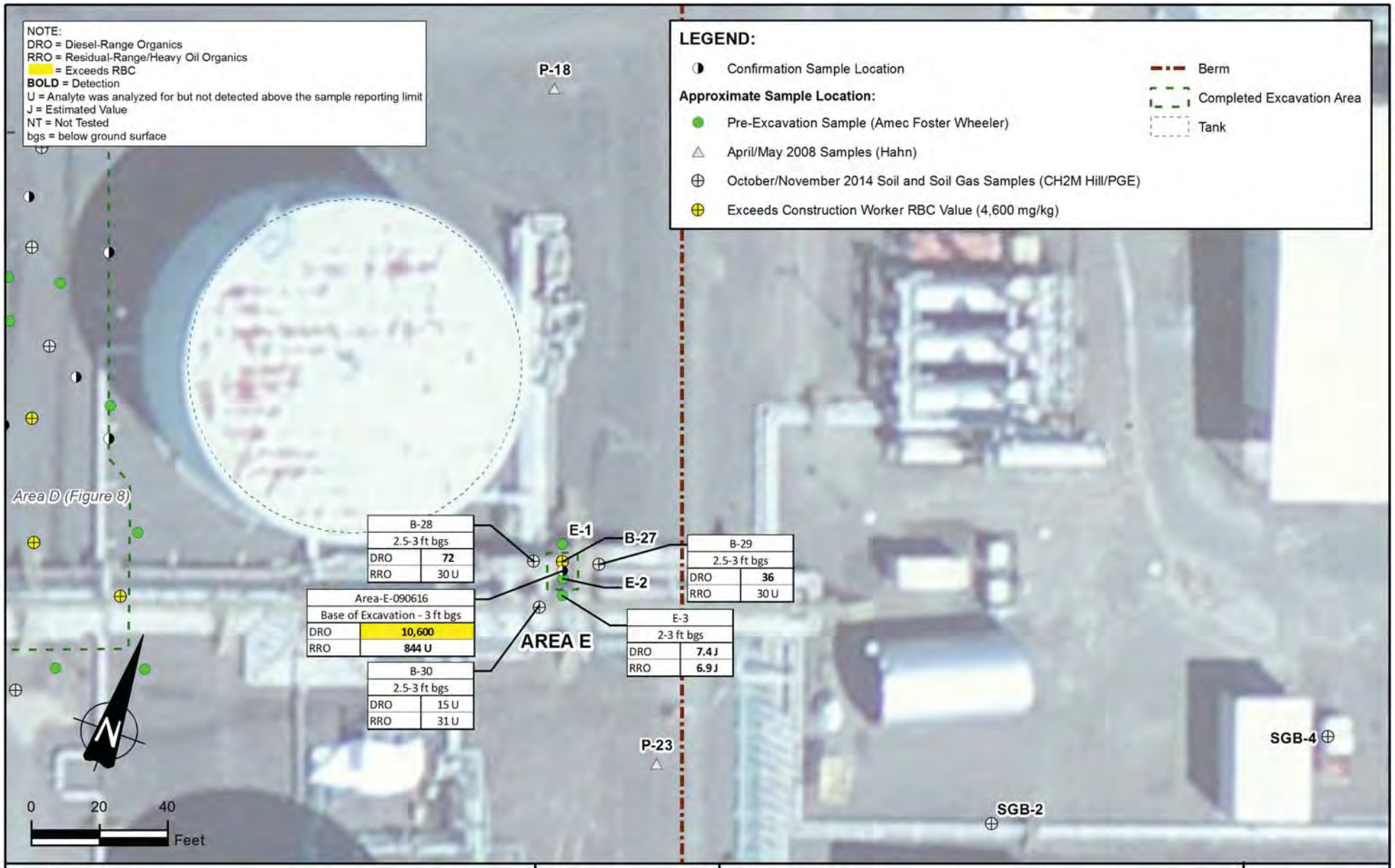
BEAVER TANK FARM
CONSTRUCTION COMPLETION REPORT

EXCAVATION AREA D

DATE: DECEMBER 2016
SCALE: 1" = 40'
PROJECT NO. 6-61M-13296-0.01
FIGURE 8

DRAWN BY: SO CHECKED BY: CB

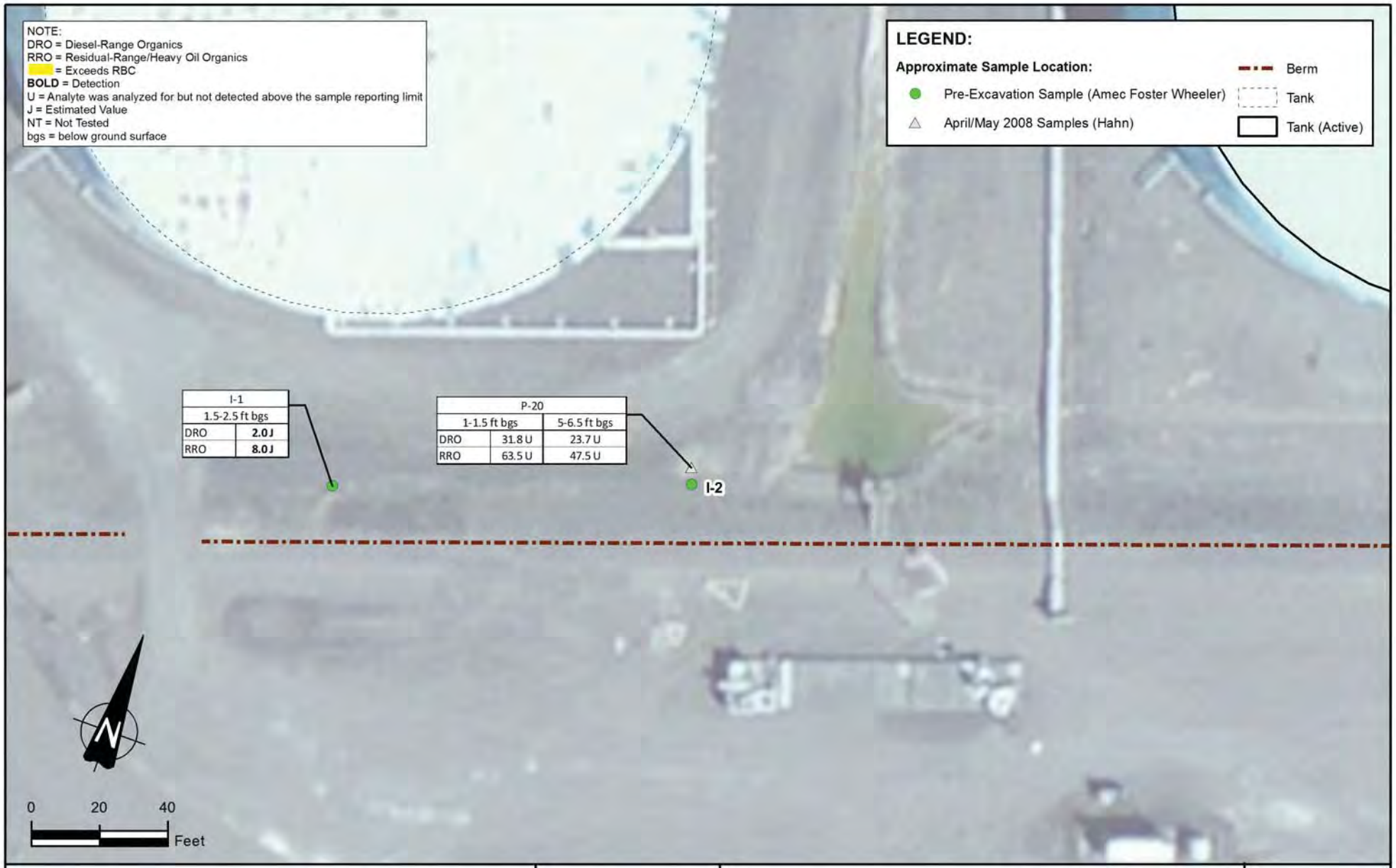
K:\13000\13200\13296\132960\DWG_Completion_Report\Figure 8 - Work Plan Excavations - Area D.mxd - stephane.descombes - 12/5/2016 - 10:33:49 AM



PORTLAND GENERAL ELECTRIC	amec foster wheeler	BEAVER TANK FARM CONSTRUCTION COMPLETION REPORT	DATE DECEMBER 2016
			SCALE 1 " = 40 '
Amec Foster Wheeler Environment & Infrastructure, Inc. 7376 S.W. Durham Road Portland, OR 97224		EXCAVATION AREA E	PROJECT NO. 6-61M-13296-0.01
			FIGURE 9

DRAWN BY: SD CHECKED BY: CB

K:\13000\13200\13296\132960\DWG_Completion_Report\Figure 9 - Work Plan Excavations - Area E.mxd - stephane.descombes - 12/5/2016 - 10:08:28 AM



PORTLAND GENERAL ELECTRIC	amec foster wheeler	BEAVER TANK FARM CONSTRUCTION COMPLETION REPORT	DATE DECEMBER 2016
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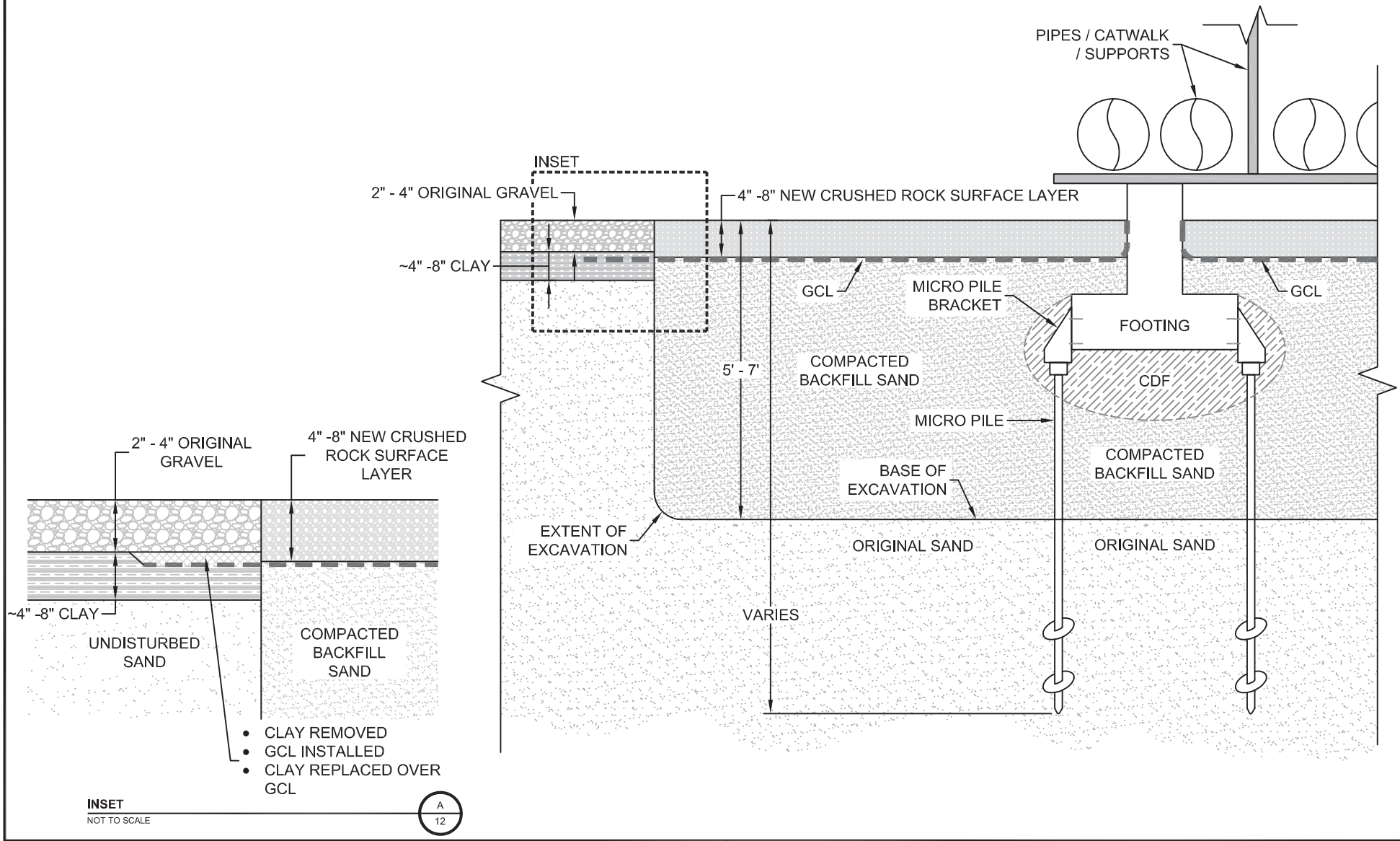
Amec Foster Wheeler Environment & Infrastructure, Inc. 7376 S.W. Durham Road Portland, OR 97224		EXCAVATION AREA I	PROJECT NO. 6-61M-13296-0.01
			FIGURE 10

DRAWN BY: SD CHECKED BY: CB

K:\13000\13200\13296\132960\DWG_Completion_Report\Figure 10 - Work Plan Excavations - Area I.mxd - stephane.descombes - 12/5/2016 - 10:12:28 AM



PORTLAND GENERAL ELECTRIC	amec foster wheeler	BEAVER TANK FARM CONSTRUCTION COMPLETION REPORT	DATE NOVEMBER 2016
			SCALE NOT TO SCALE
Amec Foster Wheeler Environment & Infrastructure, Inc. 7376 S.W. Durham Road Portland, OR 97224		EXCAVATION SCHEMATIC	PROJECT NO. 6-61M-13296-0.01
			FIGURE 11

DRAWN BY: SD CHECKED BY: PS

K:\13000\13200\13296\132960\DWG_Completion_Report\Figure 11 - Excavation Schematic.dwg - 12 - Dec. 05, 2016 10:13am - stephane.descombes

PORTLAND GENERAL ELECTRIC

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Environment & Infrastructure, Inc.
7376 S.W. Durham Road
Portland, OR 97224

amec foster wheeler

BEAVER TANK FARM
CONSTRUCTION COMPLETION REPORT

MONITORING WELL LOCATIONS

DATE NOVEMBER 2016
SCALE 1 " = 250 '
PROJECT NO. 6-61M-13296-0.01
FIGURE 11

DRAWN BY: SD CHECKED BY: CB

K:\13000\13200\13296\132960\DWG_Completion_Report\Figure 11 - Monitoring Well Locations.mxd - stephane.descombes - 11/15/2016 - 9:55:54 AM

APPENDIX A

Groundwater Sampling Field Forms

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GROUNDWATER SAMPLING FIELD FORM

PGE - Beaver Tank Farm

Monitoring Well ID: MW1

Field Personnel: WJM **Date:** 8/2/16

Weather Conditions: Overcast / Light Rain **Approx. Air Temp (F):**

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other: Casing Diameter (in.): 2"

Casing Condition: (OK) / NA / Needs Repairs/Repaired Lock Condition: (OK) / NA / Needs Repairs / Replaced

Cap Condition: (OK) / NA / Needs Repairs/Repaired Inner Casing Condition: (OK) / NA / Needs Repairs / Repaired

Paint Condition: OK / (NA) / Needs Repairs/Repaired Monument Condition: (OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 8/2/16 1125 Depth to Water (TOC - ft.): 6.80

Depth Well Bottom (TOC - ft.): 13.28 Hard Bottom

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
16.04	7.67	171	27.2	4.77	+12.3	6.80	11:30	Cell
16.56	6.20	126	10.3	3.78	+105.8	7.00	11:50	4
16.62	6.27	126	7.81	3.69	+101.9	7.20	11:55	5
16.59	6.25	126	6.67	3.71	+102.2	7.00	12:00	6 l

Total Purged: 6 l Final DTW: 7.00 Total Drawdown: .2

Purge Pumping Rate (approx. mL/m): .2 l/m Approx. Pump/Intake Depth: 14.5

Well Yield: High / Moderate / Low Sampling Technique: (low-flow) / low-yield

Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time:

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 8/2/16 Time Sampled: 1200

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	(size)	(type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW1-080216	6	VOA	40ml	HCl			
	1	500ml	Glass	HCl			
	1	1l	Glass	None			

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec FW sampler states that the information provided on this page is accurate.

Sampler (Print): W.J. McFarland Sampler Signature: [signature] Date Signed: 8/2/16

amec foster wheeler

GROUNDWATER SAMPLING FIELD FORM

PGE- Beaver Tank Farm

Monitoring Well ID: MW2

Field Personnel: WJM **Date:** 8/2/16

Weather Conditions: overcast / light Rain **Approx. Air Temp (F):**

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) CPVC Other: Casing Diameter (in.): 2"

Casing Condition: (OK) NA / Needs Repairs/Repaired Lock Condition: OK / NA / Needs Repairs / Replaced

Cap Condition: (OK) NA / Needs Repairs/Repaired Inner Casing Condition: OK / NA / Needs Repairs / Repaired

Paint Condition: OK (NA) Needs Repairs/Repaired Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs/Additional Notes:

INITIAL WELL DATA

Date/Time of Measurement: 8/2/16 1215 Depth to Water (TOC - ft.): 6.54

Depth Well Bottom (TOC - ft.): 15.30 Hard Bottom

WELL PURGING INFORMATION

Water Temperature (degree C)	pH (S.U.)	Specific Conductivity (µS/cm)	Turbidity (NTUs)	Dissolved Oxygen ug/L mg/L	ORP (mV)	DTW (ft TOC)	Time (00:00 - 23:59)	Volume Purged (liters)
16.65	6.88	155	27.7	2.03	-7.9	6.54	1225	cell
17.70	6.63	158	13.3	0.24	-6.6	6.69	1245	4 l
17.72	6.63	158	10.2	0.25	-6.6	6.72	1250	5 l
17.73	6.64	158	8.7	0.24	-6.9	6.72	1255	6 l

Total Purged: Final DTW: Total Drawdown:

Purge Pumping Rate (approx. mL/m): 2.2 l/m Approx. Pump/Intake Depth: 14.5

Well Yield: High / Moderate / Low Sampling Technique: (low-flow) / low-yield

Purge/Sampling Method: Disposable Bailer / (Peristaltic Pump) / Bladder Pump / Dedicated / Other =

Decontamination Method: Alconox /DI Water /DI Water Water Disposal: Storage Tank

Instrument Type & Number: YSI 556 Instrument Calibration Date & Time:

Field Observations/Notes of Sampling Event:

SAMPLING INFORMATION / DATA

Date Sampled: 8/2/16 Time Sampled: 1255

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank (None)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
MW2-080216	6	40 ml	Glass	HCl	ALS		
↓ ↓	1	500	Glass	HCl	↓		
	1	1 l	Glass	NO3/H2			

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): courier (Amec FW Delivery) UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed Amec FW sampler states that the information provided on this page is accurate.

Sampler (Print): W. J. McFarland Sampler Signature: [signature] Date Signed: 8/2/16

APPENDIX B

Laboratory Reports

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

August 25, 2016

Analytical Report for Service Request No: K1608758

Christy Bell
AMEC Foster Wheeler Environment & Infrastructure Inc.
7376 SW Durham Road
Portland, OR 97224

RE: PGE Tank Farm / 661M13

Dear Christy,

Enclosed are the results of the sample(s) submitted to our laboratory August 02, 2016
For your reference, these analyses have been assigned our service request number **K1608758.**

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 3376. You may also contact me via email at gregory.salata@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Gregory Salata, Ph.D.
Senior Project
Manager

ALS Environmental
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Table of Contents

Acronyms

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

Inorganic Data Qualifiers

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

Metals Data Qualifiers

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

Organic Data Qualifiers

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

Additional Petroleum Hydrocarbon Specific Qualifiers

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

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

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
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:	AMEC Foster Wheeler Environment & Infrastructure	**Service Request No.:**	K1608758
Project:	PGE Tank Farm/ 661M13	**Date Received:**	08/02/16
Sample Matrix:	Water		

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 II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

Three water samples were received for analysis at ALS Environmental on 08/02/16. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Diesel Range Organics by Method NWTPH-Dx

Sample Notes and Discussion:
Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

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

Gasoline Range Organics by Method NWTPH-Gx

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

Volatile Organic Compounds by EPA Method 8260

Calibration Verification Exceptions:
The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS13\0811F030.D: Bromomethane. 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.

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

Approved by_____

Chain of Custody

ALS Environmental—Kelso Laboratory
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CHAIN OF CUSTODY

ALS Environmental

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SR# K1608758

PAGE ____ OF ____ COC# ____

PROJECT NAME: PGE Tank Farm
PROJECT NUMBER: 661M13
PROJECT MANAGER: Christy Bell
COMPANY NAME: AMEC Foster Wheeler
ADDRESS: 7376 SW Durham Rd
CITY/STATE/ZIP: Portland, OR 97223
E-MAIL ADDRESS: Christy.Bell@amecfw.com
PHONE #: 503-639-3400 FAX #:
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☐ Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐	Congeners☐ Chlorophenolics Tri☐ Tetra☐ PCP☐	Metals, Total or Dissolved (See List below) 8151M	Cyanide☐ Hex-Chrom☐	(circle) pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS, Turb.	(circle) NH3-N, COD, TKN, TOC, DOC, NO2+NO3, T-Phos	TOX 9020☐ AOX 1650☐ 506☐	Alkalinity ☐ CO3☐ HCO3☐	Dioxins/Furans 1613☐ 8290☐	Dissolved Gases RSK 175☐ Methane☐ Ethane☐ Ethene☐ CO2☐	REMARKS
MW-1-080216	8/2/16	12:00		GW	8	H	X	X												
MW-2-080216	↓	12:55		↓	8	H	X	X												

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: ____

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 Tl 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 Tl Sn V Zn Hg

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

SPECIAL INSTRUCTIONS/COMMENTS:

Hold CPAH analysis for TPH results.
Please extract but do not analyze

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

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 8/2/16 1550	Signature: [signature] Date/Time: 8/2/16 1552	Signature: Date/Time:	Signature: Date/Time:
Printed Name: W.S. Mefarland Firm: AMEC FW	Printed Name: R Smith Firm: ALS	Printed Name: Firm:	Printed Name: Firm:

PC Grey

Cooler Receipt and Preservation Form

Client AMEC FOSTER WHEELER Service Request K16 8758

Received: 8/2/16 Opened: 8/2/16 By: CG Unloaded: 8/2/16 By: CG

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

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

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID (NA)	Tracking Number (NA)	Filed
0.0	0.0	5.4	5.4	0.0	351			

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. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N

   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
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 Cl2/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: _____

7/25/16 *Page* ____ *of* ____

Diesel and Residual Range Organics

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

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Collected:**	08/02/2016
Sample Matrix:	Water	**Date Received:**	08/02/2016

Diesel and Residual Range Organics

Sample Name:	MW-1-080216	**Units:**	ug/L
Lab Code:	K1608758-001	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**30**	J	260	12	1	08/10/16	08/18/16	KWG1606807	
Residual Range Organics (RRO)	**120**	J	520	20	1	08/10/16	08/18/16	KWG1606807	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	71	50-150	08/18/16	Acceptable
n-Triacontane	79	50-150	08/18/16	Acceptable

Comments:

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Collected:**	08/02/2016
Sample Matrix:	Water	**Date Received:**	08/02/2016

Diesel and Residual Range Organics

Sample Name:	MW-2-080216	**Units:**	ug/L
Lab Code:	K1608758-002	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**25**	J	270	12	1	08/10/16	08/18/16	KWG1606807	
Residual Range Organics (RRO)	**54**	J	530	20	1	08/10/16	08/18/16	KWG1606807	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	88	50-150	08/18/16	Acceptable
n-Triacontane	93	50-150	08/18/16	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Diesel and Residual Range Organics

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1606807-3	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**17**	J	260	12	1	08/10/16	08/18/16	KWG1606807	
Residual Range Organics (RRO)	**45**	J	520	20	1	08/10/16	08/18/16	KWG1606807	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	102	50-150	08/18/16	Acceptable
n-Triacontane	107	50-150	08/18/16	Acceptable

Comments:

QA/QC Report

Client: AMEC Foster Wheeler Environment & Infras
Service Request: K1608758
Project: PGE Tank Farm/661M13
Sample Matrix: Water

Surrogate Recovery Summary
Diesel and Residual Range Organics

Extraction Method: EPA 3510C
Units: Percent
Analysis Method: NWTPH-Dx
Level: Low

Sample Name	Lab Code	Sur1	Sur2
MW-1-080216	K1608758-001	71	79
MW-2-080216	K1608758-002	88	93
Method Blank	KWG1606807-3	102	107
Lab Control Sample	KWG1606807-1	91	93
Duplicate Lab Control Sample	KWG1606807-2	91	91

Surrogate Recovery Control Limits (%)

Sur1	=	o-Terphenyl	50-150
Sur2	=	n-Triacontane	50-150

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Extracted:**	08/10/2016
Sample Matrix:	Water	**Date Analyzed:**	08/18/2016

Lab Control Spike/Duplicate Lab Control Spike Summary
Diesel and Residual Range Organics

Extraction Method:	EPA 3510C	**Units:**	ug/L
Analysis Method:	NWTPH-Dx	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1606807

	Lab Control Sample KWG1606807-1 Lab Control Spike			Duplicate Lab Control Sample KWG1606807-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Diesel Range Organics (DRO)	2270	3200	71	2240	3200	70	46-140	1	30
Residual Range Organics (RRO)	1170	1600	73	1090	1600	68	45-159	7	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Gasoline Range Organics

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

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Collected:**	08/02/2016
Sample Matrix:	Water	**Date Received:**	08/02/2016

Gasoline Range Organics

Sample Name:	MW-1-080216	**Units:**	ug/L
Lab Code:	K1608758-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	**12**	J	250	9.6	1	08/10/16	08/10/16	KWG1607026	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	96	50-150	08/10/16	Acceptable

Comments:

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Collected:**	08/02/2016
Sample Matrix:	Water	**Date Received:**	08/02/2016

Gasoline Range Organics

Sample Name:	MW-2-080216	**Units:**	ug/L
Lab Code:	K1608758-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	**11**	J	250	9.6	1	08/10/16	08/10/16	KWG1607026	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	99	50-150	08/10/16	Acceptable

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	w- E Ban3 Farm2661M1L	**Date Collected:**	GA
Sample Matrix:	Water	**Date Received:**	GA

Gasoline Range Organics

Sample Name:	MethoT k lan3	**Units:**	uN2P
Lab Code:	KW- 16070g6/L	**Basis:**	GA
Extraction Method:	EwA 50L0k	**Level:**	PoH
Analysis Method:	GWBwx /- 9		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
- asoline RanNe p rNanics/GWBwx	**12**	O	g50	. J6	1	08210216	08210216	KW- 16070g6	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
14D'z ifluoro, en: ene	85	50/150	08210216	Accebta, le

Comments:

QA/QC Report

Client: AMEC Foster Wheeler Environment & Infras
Service Request: K1608758
Project: PGE Tank Farm/661M13
Sample Matrix: Water

Surrogate Recovery Summary
Gasoline Range Organics

Extraction Method: EPA 5030B
Units: Percent
Analysis Method: NWTPH-Gx
Level: Low

Sample Name	Lab Code	Sur1
MW-1-080216	K1608758-001	96
MW-2-080216	K1608758-002	99
MW-2-080216DUP	KWG1607026-1	102
Method Blank	KWG1607026-3	85
Lab Control Sample	KWG1607026-2	89

Surrogate Recovery Control Limits (%)

Sur1 = 1,4-Difluorobenzene 50-150

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Extracted:**	08/10/2016
Sample Matrix:	Water	**Date Analyzed:**	08/10/2016

Duplicate Sample Summary
Gasoline Range Organics

Sample Name:	MW-2-080216	**Units:**	ug/L
Lab Code:	K1608758-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx	**Extraction Lot:**	KWG1607026

Analyte Name	MRL	MDL	Sample Result	MW-2-080216DUP KWG1607026-1 Duplicate Sample Result	Average	Relative Percent Difference	RPD Limit
Gasoline Range Organics-NWTPH	250	9.6	11	12	12	11 #	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Extracted:**	08/10/2016
Sample Matrix:	Water	**Date Analyzed:**	08/10/2016

Lab Control Spike Summary
Gasoline Range Organics

Extraction Method:	EPA 5030B	**Units:**	ug/L
Analysis Method:	NWTPH-Gx	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1607026

	Lab Control Sample KWG1607026-2 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Gasoline Range Organics-NWTPH	458	500	92	80-119

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Volatile Organic Compounds

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: AMEC Foster Wheeler Environment & Infras
Project: PGE Tank Farm/661M13
Sample Matrix: Water

Service Request: K1608758
Date Collected: 08/02/2016
Date Received: 08/02/2016

Volatile Organic Compounds

Sample Name: MW-1-080216
Lab Code: K1608758-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260C

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.13	1	08/12/16	08/12/16	KWG1606963	
Chloromethane	ND	U	0.50	0.068	1	08/12/16	08/12/16	KWG1606963	
Vinyl Chloride	ND	U	0.50	0.075	1	08/12/16	08/12/16	KWG1606963	
Bromomethane	ND	U	0.50	0.16	1	08/12/16	08/12/16	KWG1606963	*
Chloroethane	ND	U	0.50	0.16	1	08/12/16	08/12/16	KWG1606963	
Trichlorofluoromethane	ND	U	0.50	0.12	1	08/12/16	08/12/16	KWG1606963	
1,1-Dichloroethene	ND	U	0.50	0.080	1	08/12/16	08/12/16	KWG1606963	
Acetone	ND	U	20	3.3	1	08/12/16	08/12/16	KWG1606963	
Carbon Disulfide	ND	U	0.50	0.069	1	08/12/16	08/12/16	KWG1606963	
Methylene Chloride	ND	U	2.0	0.10	1	08/12/16	08/12/16	KWG1606963	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	08/12/16	08/12/16	KWG1606963	
1,1-Dichloroethane	ND	U	0.50	0.077	1	08/12/16	08/12/16	KWG1606963	
2,2-Dichloropropane	ND	U	0.50	0.065	1	08/12/16	08/12/16	KWG1606963	
cis-1,2-Dichloroethene	ND	U	0.50	0.067	1	08/12/16	08/12/16	KWG1606963	
2-Butanone (MEK)	ND	U	20	1.9	1	08/12/16	08/12/16	KWG1606963	
Bromochloromethane	ND	U	0.50	0.16	1	08/12/16	08/12/16	KWG1606963	
Chloroform	ND	U	0.50	0.072	1	08/12/16	08/12/16	KWG1606963	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	08/12/16	08/12/16	KWG1606963	
Carbon Tetrachloride	ND	U	0.50	0.096	1	08/12/16	08/12/16	KWG1606963	
1,1-Dichloropropene	ND	U	0.50	0.089	1	08/12/16	08/12/16	KWG1606963	
Benzene	ND	U	0.50	0.062	1	08/12/16	08/12/16	KWG1606963	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	08/12/16	08/12/16	KWG1606963	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	08/12/16	08/12/16	KWG1606963	
1,2-Dichloropropane	ND	U	0.50	0.095	1	08/12/16	08/12/16	KWG1606963	
Dibromomethane	ND	U	0.50	0.15	1	08/12/16	08/12/16	KWG1606963	
Bromodichloromethane	ND	U	0.50	0.091	1	08/12/16	08/12/16	KWG1606963	
cis-1,3-Dichloropropene	ND	U	0.50	0.18	1	08/12/16	08/12/16	KWG1606963	
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	08/12/16	08/12/16	KWG1606963	
Toluene	**0.11**	J	0.50	0.054	1	08/12/16	08/12/16	KWG1606963	
trans-1,3-Dichloropropene	ND	U	0.50	0.068	1	08/12/16	08/12/16	KWG1606963	
1,1,2-Trichloroethane	ND	U	0.50	0.14	1	08/12/16	08/12/16	KWG1606963	
Tetrachloroethene (PCE)	**1.0**		0.50	0.099	1	08/12/16	08/12/16	KWG1606963	
2-Hexanone	ND	U	20	2.7	1	08/12/16	08/12/16	KWG1606963	
1,3-Dichloropropane	ND	U	0.50	0.14	1	08/12/16	08/12/16	KWG1606963	

Comments:

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Collected:**	08/02/2016
Sample Matrix:	Water	**Date Received:**	08/02/2016

Volatile Organic Compounds

Sample Name:	MW-1-080216	**Units:**	ug/L
Lab Code:	K1608758-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dibromochloromethane	ND	U	0.50	0.14	1	08/12/16	08/12/16	KWG1606963	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.10	1	08/12/16	08/12/16	KWG1606963	
Chlorobenzene	ND	U	0.50	0.11	1	08/12/16	08/12/16	KWG1606963	
Ethylbenzene	ND	U	0.50	0.050	1	08/12/16	08/12/16	KWG1606963	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.11	1	08/12/16	08/12/16	KWG1606963	
m,p-Xylenes	ND	U	0.50	0.11	1	08/12/16	08/12/16	KWG1606963	
o-Xylene	ND	U	0.50	0.074	1	08/12/16	08/12/16	KWG1606963	
Styrene	ND	U	0.50	0.089	1	08/12/16	08/12/16	KWG1606963	
Bromoform	ND	U	0.50	0.16	1	08/12/16	08/12/16	KWG1606963	
Isopropylbenzene	ND	U	2.0	0.051	1	08/12/16	08/12/16	KWG1606963	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	08/12/16	08/12/16	KWG1606963	
Bromobenzene	ND	U	2.0	0.12	1	08/12/16	08/12/16	KWG1606963	
n-Propylbenzene	ND	U	2.0	0.054	1	08/12/16	08/12/16	KWG1606963	
1,2,3-Trichloropropane	ND	U	0.50	0.20	1	08/12/16	08/12/16	KWG1606963	
2-Chlorotoluene	ND	U	2.0	0.10	1	08/12/16	08/12/16	KWG1606963	
1,3,5-Trimethylbenzene	ND	U	2.0	0.089	1	08/12/16	08/12/16	KWG1606963	
4-Chlorotoluene	ND	U	2.0	0.13	1	08/12/16	08/12/16	KWG1606963	
tert-Butylbenzene	ND	U	2.0	0.059	1	08/12/16	08/12/16	KWG1606963	
1,2,4-Trimethylbenzene	ND	U	2.0	0.069	1	08/12/16	08/12/16	KWG1606963	
sec-Butylbenzene	ND	U	2.0	0.062	1	08/12/16	08/12/16	KWG1606963	
4-Isopropyltoluene	ND	U	2.0	0.060	1	08/12/16	08/12/16	KWG1606963	
1,3-Dichlorobenzene	ND	U	0.50	0.10	1	08/12/16	08/12/16	KWG1606963	
1,4-Dichlorobenzene	ND	U	0.50	0.12	1	08/12/16	08/12/16	KWG1606963	
n-Butylbenzene	ND	U	2.0	0.054	1	08/12/16	08/12/16	KWG1606963	
1,2-Dichlorobenzene	ND	U	0.50	0.12	1	08/12/16	08/12/16	KWG1606963	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	08/12/16	08/12/16	KWG1606963	
1,2,4-Trichlorobenzene	ND	U	2.0	0.096	1	08/12/16	08/12/16	KWG1606963	
Hexachlorobutadiene	ND	U	2.0	0.11	1	08/12/16	08/12/16	KWG1606963	
Naphthalene	ND	U	2.0	0.088	1	08/12/16	08/12/16	KWG1606963	
1,2,3-Trichlorobenzene	ND	U	2.0	0.11	1	08/12/16	08/12/16	KWG1606963	

* See Case Narrative

Comments:

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Collected:**	08/02/2016
Sample Matrix:	Water	**Date Received:**	08/02/2016

Volatile Organic Compounds

Sample Name:	MW-1-080216	**Units:**	ug/L
Lab Code:	K1608758-001	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	94	73-122	08/12/16	Acceptable
Toluene-d8	97	65-144	08/12/16	Acceptable
4-Bromofluorobenzene	88	68-117	08/12/16	Acceptable

Comments:

Analytical Results

Client: AMEC Foster Wheeler Environment & Infras
Project: PGE Tank Farm/661M13
Sample Matrix: Water

Service Request: K1608758
Date Collected: 08/02/2016
Date Received: 08/02/2016

Volatile Organic Compounds

Sample Name: MW-2-080216
Lab Code: K1608758-002

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260C

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.13	1	08/12/16	08/12/16	KWG1606963	
Chloromethane	ND	U	0.50	0.068	1	08/12/16	08/12/16	KWG1606963	
Vinyl Chloride	ND	U	0.50	0.075	1	08/12/16	08/12/16	KWG1606963	
Bromomethane	ND	U	0.50	0.16	1	08/12/16	08/12/16	KWG1606963	*
Chloroethane	ND	U	0.50	0.16	1	08/12/16	08/12/16	KWG1606963	
Trichlorofluoromethane	ND	U	0.50	0.12	1	08/12/16	08/12/16	KWG1606963	
1,1-Dichloroethene	ND	U	0.50	0.080	1	08/12/16	08/12/16	KWG1606963	
Acetone	ND	U	20	3.3	1	08/12/16	08/12/16	KWG1606963	
Carbon Disulfide	ND	U	0.50	0.069	1	08/12/16	08/12/16	KWG1606963	
Methylene Chloride	ND	U	2.0	0.10	1	08/12/16	08/12/16	KWG1606963	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	08/12/16	08/12/16	KWG1606963	
1,1-Dichloroethane	ND	U	0.50	0.077	1	08/12/16	08/12/16	KWG1606963	
2,2-Dichloropropane	ND	U	0.50	0.065	1	08/12/16	08/12/16	KWG1606963	
cis-1,2-Dichloroethene	**0.11**	J	0.50	0.067	1	08/12/16	08/12/16	KWG1606963	
2-Butanone (MEK)	ND	U	20	1.9	1	08/12/16	08/12/16	KWG1606963	
Bromochloromethane	ND	U	0.50	0.16	1	08/12/16	08/12/16	KWG1606963	
Chloroform	ND	U	0.50	0.072	1	08/12/16	08/12/16	KWG1606963	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	08/12/16	08/12/16	KWG1606963	
Carbon Tetrachloride	ND	U	0.50	0.096	1	08/12/16	08/12/16	KWG1606963	
1,1-Dichloropropene	ND	U	0.50	0.089	1	08/12/16	08/12/16	KWG1606963	
Benzene	ND	U	0.50	0.062	1	08/12/16	08/12/16	KWG1606963	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	08/12/16	08/12/16	KWG1606963	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	08/12/16	08/12/16	KWG1606963	
1,2-Dichloropropane	ND	U	0.50	0.095	1	08/12/16	08/12/16	KWG1606963	
Dibromomethane	ND	U	0.50	0.15	1	08/12/16	08/12/16	KWG1606963	
Bromodichloromethane	ND	U	0.50	0.091	1	08/12/16	08/12/16	KWG1606963	
cis-1,3-Dichloropropene	ND	U	0.50	0.18	1	08/12/16	08/12/16	KWG1606963	
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	08/12/16	08/12/16	KWG1606963	
Toluene	ND	U	0.50	0.054	1	08/12/16	08/12/16	KWG1606963	
trans-1,3-Dichloropropene	ND	U	0.50	0.068	1	08/12/16	08/12/16	KWG1606963	
1,1,2-Trichloroethane	ND	U	0.50	0.14	1	08/12/16	08/12/16	KWG1606963	
Tetrachloroethene (PCE)	**0.10**	J	0.50	0.099	1	08/12/16	08/12/16	KWG1606963	
2-Hexanone	ND	U	20	2.7	1	08/12/16	08/12/16	KWG1606963	
1,3-Dichloropropane	ND	U	0.50	0.14	1	08/12/16	08/12/16	KWG1606963	

Comments:

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Collected:**	08/02/2016
Sample Matrix:	Water	**Date Received:**	08/02/2016

Volatile Organic Compounds

Sample Name:	MW-2-080216	**Units:**	ug/L
Lab Code:	K1608758-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dibromochloromethane	ND	U	0.50	0.14	1	08/12/16	08/12/16	KWG1606963	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.10	1	08/12/16	08/12/16	KWG1606963	
Chlorobenzene	ND	U	0.50	0.11	1	08/12/16	08/12/16	KWG1606963	
Ethylbenzene	ND	U	0.50	0.050	1	08/12/16	08/12/16	KWG1606963	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.11	1	08/12/16	08/12/16	KWG1606963	
m,p-Xylenes	ND	U	0.50	0.11	1	08/12/16	08/12/16	KWG1606963	
o-Xylene	ND	U	0.50	0.074	1	08/12/16	08/12/16	KWG1606963	
Styrene	ND	U	0.50	0.089	1	08/12/16	08/12/16	KWG1606963	
Bromoform	ND	U	0.50	0.16	1	08/12/16	08/12/16	KWG1606963	
Isopropylbenzene	ND	U	2.0	0.051	1	08/12/16	08/12/16	KWG1606963	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	08/12/16	08/12/16	KWG1606963	
Bromobenzene	ND	U	2.0	0.12	1	08/12/16	08/12/16	KWG1606963	
n-Propylbenzene	ND	U	2.0	0.054	1	08/12/16	08/12/16	KWG1606963	
1,2,3-Trichloropropane	ND	U	0.50	0.20	1	08/12/16	08/12/16	KWG1606963	
2-Chlorotoluene	ND	U	2.0	0.10	1	08/12/16	08/12/16	KWG1606963	
1,3,5-Trimethylbenzene	ND	U	2.0	0.089	1	08/12/16	08/12/16	KWG1606963	
4-Chlorotoluene	ND	U	2.0	0.13	1	08/12/16	08/12/16	KWG1606963	
tert-Butylbenzene	ND	U	2.0	0.059	1	08/12/16	08/12/16	KWG1606963	
1,2,4-Trimethylbenzene	ND	U	2.0	0.069	1	08/12/16	08/12/16	KWG1606963	
sec-Butylbenzene	ND	U	2.0	0.062	1	08/12/16	08/12/16	KWG1606963	
4-Isopropyltoluene	ND	U	2.0	0.060	1	08/12/16	08/12/16	KWG1606963	
1,3-Dichlorobenzene	ND	U	0.50	0.10	1	08/12/16	08/12/16	KWG1606963	
1,4-Dichlorobenzene	ND	U	0.50	0.12	1	08/12/16	08/12/16	KWG1606963	
n-Butylbenzene	ND	U	2.0	0.054	1	08/12/16	08/12/16	KWG1606963	
1,2-Dichlorobenzene	ND	U	0.50	0.12	1	08/12/16	08/12/16	KWG1606963	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.22	1	08/12/16	08/12/16	KWG1606963	
1,2,4-Trichlorobenzene	ND	U	2.0	0.096	1	08/12/16	08/12/16	KWG1606963	
Hexachlorobutadiene	ND	U	2.0	0.11	1	08/12/16	08/12/16	KWG1606963	
Naphthalene	ND	U	2.0	0.088	1	08/12/16	08/12/16	KWG1606963	
1,2,3-Trichlorobenzene	ND	U	2.0	0.11	1	08/12/16	08/12/16	KWG1606963	

* See Case Narrative

Comments:

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Collected:**	08/02/2016
Sample Matrix:	Water	**Date Received:**	08/02/2016

Volatile Organic Compounds

Sample Name:	MW-2-080216	**Units:**	ug/L
Lab Code:	K1608758-002	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	93	73-122	08/12/16	Acceptable
Toluene-d8	96	65-144	08/12/16	Acceptable
4-Bromofluorobenzene	89	68-117	08/12/16	Acceptable

Comments:

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	w- E Ban3 Farm2661M1/	**Date Collected:**	GA
Sample Matrix:	Water	**Date Received:**	GA

Volatile Organic Compounds

Sample Name:	MethoT k lan3	**Units:**	uN2P
Lab Code:	KW- 1606g6/ I5	**Basis:**	GA
Extraction Method:	EwA 50/ 0k	**Level:**	Po.
Analysis Method:	8960C		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
d ichloroTifluoromethane	Gd	D	0U50	0U/	1	08211216	08211216	KW- 1606g6/	
Chloromethane	Gd	D	0U50	0U068	1	08211216	08211216	KW- 1606g6/	
Vinyl ChloriTe	Gd	D	0U50	0U075	1	08211216	08211216	KW- 1606g6/	
k romomethane	Gd	D	0U50	0U6	1	08211216	08211216	KW- 1606g6/	*
Chloroethane	Gd	D	0U50	0U6	1	08211216	08211216	KW- 1606g6/	
Brichlorofluoromethane	Gd	D	0U50	0U9	1	08211216	08211216	KW- 1606g6/	
1,1Id ichloroethene	Gd	D	0U50	0U080	1	08211216	08211216	KW- 1606g6/	
Acetone	Gd	D	90	/ U	1	08211216	08211216	KW- 1606g6/	
Carpon d isulfiTe	**0.16**	b	0U50	0U06g	1	08211216	08211216	KW- 1606g6/	
Methylene ChloriTe	Gd	D	9U0	0U0	1	08211216	08211216	KW- 1606g6/	
transI1,9Id ichloroethene	Gd	D	0U50	0U079	1	08211216	08211216	KW- 1606g6/	
1,1Id ichloroethane	Gd	D	0U50	0U077	1	08211216	08211216	KW- 1606g6/	
9,9Id ichloro(ro(ane	Gd	D	0U50	0U065	1	08211216	08211216	KW- 1606g6/	
cisI1,9Id ichloroethene	Gd	D	0U50	0U067	1	08211216	08211216	KW- 1606g6/	
9Ik utanone)MEKz	Gd	D	90	1Ug	1	08211216	08211216	KW- 1606g6/	
k romochloromethane	Gd	D	0U50	0U6	1	08211216	08211216	KW- 1606g6/	
Chloroform	Gd	D	0U50	0U079	1	08211216	08211216	KW- 1606g6/	
1,1,1IBrichloroethane)BCAz	Gd	D	0U50	0U075	1	08211216	08211216	KW- 1606g6/	
Carpon BetrachloriTe	Gd	D	0U50	0U0g6	1	08211216	08211216	KW- 1606g6/	
1,1Id ichloro(ro(ene	Gd	D	0U50	0U08g	1	08211216	08211216	KW- 1606g6/	
k en4ene	Gd	D	0U50	0U069	1	08211216	08211216	KW- 1606g6/	
1,9Id ichloroethane)Ed Cz	Gd	D	0U50	0U080	1	08211216	08211216	KW- 1606g6/	
Brichloroethene)BCEz	Gd	D	0U50	0U0	1	08211216	08211216	KW- 1606g6/	
1,9Id ichloro(ro(ane	Gd	D	0U50	0U0g5	1	08211216	08211216	KW- 1606g6/	
d ipromomethane	Gd	D	0U50	0U5	1	08211216	08211216	KW- 1606g6/	
k romoTichloromethane	Gd	D	0U50	0U0g1	1	08211216	08211216	KW- 1606g6/	
cisI1,/ Id ichloro(ro(ene	Gd	D	0U50	0U8	1	08211216	08211216	KW- 1606g6/	
J IMethylI9I(entanone)MIk Kz	Gd	D	90	9U6	1	08211216	08211216	KW- 1606g6/	
Boluene	Gd	D	0U50	0U05J	1	08211216	08211216	KW- 1606g6/	
transI1,/ Id ichloro(ro(ene	Gd	D	0U50	0U068	1	08211216	08211216	KW- 1606g6/	
1,1,9IBrichloroethane	Gd	D	0U50	0UJ	1	08211216	08211216	KW- 1606g6/	
Betrachloroethene)wCEz	Gd	D	0U50	0U0gg	1	08211216	08211216	KW- 1606g6/	
9IHexanone	Gd	D	90	9U7	1	08211216	08211216	KW- 1606g6/	
1,/ Id ichloro(ro(ane	Gd	D	0U50	0UJ	1	08211216	08211216	KW- 1606g6/	

Comments:

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	w- E Ban3 Farm2661M1/	**Date Collected:**	GA
Sample Matrix:	Water	**Date Received:**	GA

Volatile Organic Compounds

Sample Name:	MethoT k lan3	**Units:**	uN2P
Lab Code:	KW- 1606g6/ I5	**Basis:**	GA
Extraction Method:	EwA 50/ 0k	**Level:**	Po.
Analysis Method:	8960C		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
d ipromochloromethane	Gd	D	0U50	0UJJ	1	08211216	08211216	KW- 1606g6/	
1,9Id ipromoethane)Ed k z	Gd	D	9U0	0U0	1	08211216	08211216	KW- 1606g6/	
Chloropen4ene	Gd	D	0U50	0U1	1	08211216	08211216	KW- 1606g6/	
Ethylpen4ene	Gd	D	0U50	0U050	1	08211216	08211216	KW- 1606g6/	
1,1,1,9IBetrachloroethane	Gd	D	0U50	0U1	1	08211216	08211216	KW- 1606g6/	
m,(IXylenes	Gd	D	0U50	0U1	1	08211216	08211216	KW- 1606g6/	
oIXylene	Gd	D	0U50	0U07J	1	08211216	08211216	KW- 1606g6/	
Styrene	Gd	D	0U50	0U08g	1	08211216	08211216	KW- 1606g6/	
k romoform	Gd	D	0U50	0U6	1	08211216	08211216	KW- 1606g6/	
Iso(ro(ylpen4ene	Gd	D	9U0	0U051	1	08211216	08211216	KW- 1606g6/	
1,1,9,9IBetrachloroethane	Gd	D	0U50	0U6	1	08211216	08211216	KW- 1606g6/	
k romopen4ene	Gd	D	9U0	0U9	1	08211216	08211216	KW- 1606g6/	
nIwro(ylpen4ene	Gd	D	9U0	0U05J	1	08211216	08211216	KW- 1606g6/	
1,9,/ IBrichloro(ro(ane	Gd	D	0U50	0U90	1	08211216	08211216	KW- 1606g6/	
9IChlorotoluene	Gd	D	9U0	0U0	1	08211216	08211216	KW- 1606g6/	
1,/ ,5IBrimethylpen4ene	Gd	D	9U0	0U08g	1	08211216	08211216	KW- 1606g6/	
J IChlorotoluene	Gd	D	9U0	0U/	1	08211216	08211216	KW- 1606g6/	
tertIk utylpen4ene	Gd	D	9U0	0U05g	1	08211216	08211216	KW- 1606g6/	
1,9,J IBrimethylpen4ene	Gd	D	9U0	0U06g	1	08211216	08211216	KW- 1606g6/	
secIk utylpen4ene	Gd	D	9U0	0U069	1	08211216	08211216	KW- 1606g6/	
J IIso(ro(yltoluene	Gd	D	9U0	0U060	1	08211216	08211216	KW- 1606g6/	
1,/ Id ichloropen4ene	Gd	D	0U50	0U0	1	08211216	08211216	KW- 1606g6/	
1,J Id ichloropen4ene	Gd	D	0U50	0U9	1	08211216	08211216	KW- 1606g6/	
nIk utylpen4ene	Gd	D	9U0	0U05J	1	08211216	08211216	KW- 1606g6/	
1,9Id ichloropen4ene	Gd	D	0U50	0U9	1	08211216	08211216	KW- 1606g6/	
1,9Id ipromoI/ Ichloro(ro(ane	Gd	D	9U0	0U99	1	08211216	08211216	KW- 1606g6/	
1,9,J IBrichloropen4ene	Gd	D	9U0	0U0g6	1	08211216	08211216	KW- 1606g6/	
HexachloroputaTiene	Gd	D	9U0	0U1	1	08211216	08211216	KW- 1606g6/	
Ga(hthalene	Gd	D	9U0	0U088	1	08211216	08211216	KW- 1606g6/	
1,9,/ IBrichloropen4ene	Gd	D	9U0	0U1	1	08211216	08211216	KW- 1606g6/	

* See Case Garrative

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	w- E Ban3 Farm2661M1/	**Date Collected:**	GA
Sample Matrix:	Water	**Date Received:**	GA

Volatile Organic Compounds

Sample Name:	MethoT k lan3	**Units:**	uN2P
Lab Code:	KW- 1606g6/ I5	**Basis:**	GA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
d ipromofluoromethane	gJ	7/ L199	082112216	Acce(taple
BolueneLT8	g7	65L1JJ	082112216	Acce(taple
J Ik romofluoropen4ene	88	68L117	082112216	Acce(taple

Comments:

QA/QC Report

Client: AMEC Foster Wheeler Environment & Infras
Service Request: K1608758
Project: PGE Tank Farm/661M13
Sample Matrix: Water

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Units: Percent
Analysis Method: 8260C
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
MW-1-080216	K1608758-001	94	97	88
MW-2-080216	K1608758-002	93	96	89
Batch QC	K1608840-003	97	98	89
Method Blank	KWG1606963-5	94	97	88
Batch QCMS	KWG1606963-1	96	100	97
Batch QCDMS	KWG1606963-2	97	99	95
Lab Control Sample	KWG1606963-3	97	99	92
Duplicate Lab Control Sample	KWG1606963-4	94	99	94

Surrogate Recovery Control Limits (%)

Sur1	=	Dibromofluoromethane	73-122
Sur2	=	Toluene-d8	65-144
Sur3	=	4-Bromofluorobenzene	68-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	AMEC Foster Wheeler Environment & Infras	**Service Request:**	K1608758
Project:	PGE Tank Farm/661M13	**Date Extracted:**	08/11/2016
Sample Matrix:	Water	**Date Analyzed:**	08/11/2016

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1608840-003	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C	**Extraction Lot:**	KWG1606963

		Batch QCMS KWG1606963-1 Matrix Spike			Batch QCDMS KWG1606963-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Vinyl Chloride	ND	10.5	10.0	105	8.73	10.0	87	49-136	18	30
1,1-Dichloroethene	ND	11.7	10.0	117	9.81	10.0	98	59-171	18	30
Chloroform	ND	12.3	10.0	123	10.9	10.0	109	64-133	12	30
Carbon Tetrachloride	ND	12.7	10.0	127	10.6	10.0	106	53-161	18	30
Benzene	ND	11.5	10.0	115	9.96	10.0	100	63-144	14	30
Trichloroethene (TCE)	ND	11.8	10.0	118	10.5	10.0	105	53-139	11	30
Bromodichloromethane	ND	12.6	10.0	126	11.1	10.0	111	61-134	12	30
Toluene	0.090	11.9	10.0	118	10.3	10.0	102	71-136	15	30
1,1,2-Trichloroethane	ND	11.6	10.0	116	10.1	10.0	101	74-124	14	30
2-Hexanone	ND	64.5	50.0	129	56.6	50.0	113	53-132	13	30
Chlorobenzene	ND	11.3	10.0	113	9.46	10.0	95	69-126	18	30
Ethylbenzene	ND	11.5	10.0	115	9.71	10.0	97	66-136	17	30
1,2,3-Trichloropropane	ND	11.6	10.0	116	10.9	10.0	109	71-127	7	30
2-Chlorotoluene	ND	11.8	10.0	118	9.96	10.0	100	55-139	17	30
1,2-Dichlorobenzene	ND	11.4	10.0	114	10.1	10.0	101	72-119	12	30
Naphthalene	ND	13.1	10.0	131	10.7	10.0	107	52-147	20	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: AMEC Foster Wheeler Environment & Infras
Project: PGE Tank Farm/661M13
Sample Matrix: Water

Service Request: K1608758
Date Extracted: 08/11/2016
Date Analyzed: 08/11/2016

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1606963

	Lab Control Sample KWG1606963-3 Lab Control Spike			Duplicate Lab Control Sample KWG1606963-4 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane	9.24	10.0	92	7.91	10.0	79	32-124	16	30
Chloromethane	8.77	10.0	88	7.52	10.0	75	34-130	15	30
Vinyl Chloride	9.58	10.0	96	7.95	10.0	80	55-123	19	30
Bromomethane	7.67	10.0	77	6.86	10.0	69	35-113	11	30
Chloroethane	9.86	10.0	99	8.48	10.0	85	58-134	15	30
Trichlorofluoromethane	9.83	10.0	98	8.60	10.0	86	52-141	13	30
1,1-Dichloroethene	10.7	10.0	107	9.05	10.0	91	66-129	17	30
Acetone	56.1	50.0	112	50.8	50.0	102	68-135	10	30
Carbon Disulfide	23.0	20.0	115	19.2	20.0	96	46-144	18	30
Methylene Chloride	11.0	10.0	110	9.81	10.0	98	71-122	12	30
trans-1,2-Dichloroethene	11.1	10.0	111	9.07	10.0	91	67-125	20	30
1,1-Dichloroethane	11.5	10.0	115	10.3	10.0	103	68-132	11	30
2,2-Dichloropropane	11.3	10.0	113	9.54	10.0	95	37-145	17	30
cis-1,2-Dichloroethene	11.0	10.0	110	9.63	10.0	96	71-118	13	30
2-Butanone (MEK)	56.0	50.0	112	52.3	50.0	105	71-149	7	30
Bromochloromethane	10.9	10.0	109	9.60	10.0	96	75-131	13	30
Chloroform	11.8	10.0	118	10.4	10.0	104	70-129	13	30
1,1,1-Trichloroethane (TCA)	11.1	10.0	111	9.84	10.0	98	59-136	12	30
Carbon Tetrachloride	11.8	10.0	118	10.1	10.0	101	55-140	15	30
1,1-Dichloropropene	11.0	10.0	110	9.37	10.0	94	59-134	16	30
Benzene	10.9	10.0	109	9.62	10.0	96	69-124	12	30
1,2-Dichloroethane (EDC)	11.6	10.0	116	10.2	10.0	102	56-142	14	30
Trichloroethene (TCE)	11.3	10.0	113	9.79	10.0	98	67-128	15	30
1,2-Dichloropropane	11.2	10.0	112	9.72	10.0	97	67-126	14	30
Dibromomethane	11.6	10.0	116	10.1	10.0	101	69-128	14	30
Bromodichloromethane	11.9	10.0	119	10.4	10.0	104	63-129	14	30
cis-1,3-Dichloropropene	11.5	10.0	115	10.4	10.0	104	62-132	11	30
4-Methyl-2-pentanone (MIBK)	58.6	50.0	117	52.4	50.0	105	64-134	11	30
Toluene	11.0	10.0	110	9.60	10.0	96	69-124	14	30
trans-1,3-Dichloropropene	10.6	10.0	106	9.61	10.0	96	59-125	9	30
1,1,2-Trichloroethane	10.5	10.0	105	9.49	10.0	95	74-118	10	30
Tetrachloroethene (PCE)	10.7	10.0	107	9.80	10.0	98	62-126	9	30
2-Hexanone	52.5	50.0	105	48.8	50.0	98	59-131	7	30
1,3-Dichloropropane	10.4	10.0	104	9.68	10.0	97	75-116	7	30
Dibromochloromethane	11.5	10.0	115	10.4	10.0	104	67-126	10	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: AMEC Foster Wheeler Environment & Infras
Project: PGE Tank Farm/661M13
Sample Matrix: Water

Service Request: K1608758
Date Extracted: 08/11/2016
Date Analyzed: 08/11/2016

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1606963

	Lab Control Sample KWG1606963-3 Lab Control Spike			Duplicate Lab Control Sample KWG1606963-4 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,2-Dibromoethane (EDB)	10.9	10.0	109	9.99	10.0	100	74-118	8	30
Chlorobenzene	10.3	10.0	103	9.52	10.0	95	72-116	8	30
Ethylbenzene	10.5	10.0	105	9.58	10.0	96	67-121	9	30
1,1,1,2-Tetrachloroethane	10.8	10.0	108	10.1	10.0	101	66-124	7	30
m,p-Xylenes	21.4	20.0	107	19.9	20.0	100	69-121	7	30
o-Xylene	10.7	10.0	107	9.85	10.0	99	71-119	8	30
Styrene	10.0	10.0	100	9.32	10.0	93	74-121	7	30
Bromoform	10.8	10.0	108	10.1	10.0	101	52-144	7	30
Isopropylbenzene	10.9	10.0	109	10.1	10.0	101	67-129	8	30
1,1,2,2-Tetrachloroethane	10.7	10.0	107	9.69	10.0	97	70-127	10	30
Bromobenzene	10.6	10.0	106	9.83	10.0	98	72-116	8	30
n-Propylbenzene	10.5	10.0	105	9.99	10.0	100	61-124	5	30
1,2,3-Trichloropropane	10.9	10.0	109	10.2	10.0	102	69-123	6	30
2-Chlorotoluene	10.7	10.0	107	10.1	10.0	101	55-131	6	30
1,3,5-Trimethylbenzene	11.0	10.0	110	10.5	10.0	105	62-126	4	30
4-Chlorotoluene	10.9	10.0	109	10.3	10.0	103	66-121	5	30
tert-Butylbenzene	10.7	10.0	107	10.4	10.0	104	61-127	3	30
1,2,4-Trimethylbenzene	11.2	10.0	112	10.7	10.0	107	63-122	4	30
sec-Butylbenzene	10.7	10.0	107	10.5	10.0	105	59-128	1	30
4-Isopropyltoluene	10.7	10.0	107	10.6	10.0	106	61-128	1	30
1,3-Dichlorobenzene	10.5	10.0	105	9.96	10.0	100	70-116	5	30
1,4-Dichlorobenzene	9.92	10.0	99	9.51	10.0	95	73-115	4	30
n-Butylbenzene	10.2	10.0	102	10.0	10.0	100	55-130	2	30
1,2-Dichlorobenzene	10.6	10.0	106	10.1	10.0	101	72-115	5	30
1,2-Dibromo-3-chloropropane	9.74	10.0	97	10.4	10.0	104	55-132	7	30
1,2,4-Trichlorobenzene	11.3	10.0	113	11.3	10.0	113	58-126	1	30
Hexachlorobutadiene	11.0	10.0	110	10.3	10.0	103	57-119	6	30
Naphthalene	10.2	10.0	102	10.4	10.0	104	64-126	3	30
1,2,3-Trichlorobenzene	9.53	10.0	95	10.1	10.0	101	68-120	6	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Jones Stohosky Environmental Laboratory, Inc.
3315 SE Harrison Street, Ste. C, Milwaukie OR 97222
Ph 503-659-8338 Fax 503-659-7577
www.jselabs.com

jacob.neal@pgn.com

Fax # or Email Address
robert.roloson@pgn.com
robert.wamre@pgn.com
doug.jenkin@pgn.com

JSE Use Only
Client # 02067
Due Date 9/8
AH Drop Walk In Fedex
USPS Courier UPS

CHAIN OF CUSTODY

Complete as much of the requested information as possible below. For Terms and Conditions - See reverse, visit www.jselabs.com, or call us for a copy. Bulk Asbestos samples are archived for 30 days from lab acceptance prior to disposal. Clients are encouraged to retrieve samples.

Name / Company Name: Rob Roloson / Portland General Electric.
Contact Phone / Fax: (503)-464-7567 or (503)-333-7319 (cell)
Report Mailing Address: 121 SW Salmon Street Portland OR 97204
Project Name: Beaver Plant
Project Location: Fuel Oil Tank Farm **Project #:** —
PO #: —

Inspection, Sampling, and Consulting Services Available! Call for Details or Appointment.

Standard Analysis
- **Asbestos Bulk, PLM** — EPA Method 600 M4-82-020 & EPA 600 R-93 116
- **Asbestos Air, PCM** — NIOSH 7400 Method
- **Asbestos Bulk, PLM-PC** — Point Count, Quantification

Special Analysis (Rush not available)
- **Lead, Pb*** *Unless specified by Client, paint will not be separated from Matrix.
- **TCLP** — Lead only, 3 Metals or 8 Metals
- **RCRA** — 3 Metals or 8 Metals
- **Respirable Dust** — NIOSH 0600
- **Nuisance Dust** — NIOSH 0500
- **Total Diesel / Heavy Oil** — NW-TPH-Dx
- **Hexavalent Chromium**

Metals: Ag, As, Ba, Cd, Cr, Hg, Pb, Se

- **Mold Bulk** — Wipe, Tape Lift, swab
- **Mold Air** — Air-o-Cell, Allergenco
- **PCB's** — General, Oil, or Wipe

More Services Available!

Call us to Discuss Your Specific Needs.

See reverse for terms and conditions.

Priority / Turn-Around Time
- **W-** Weekend Rush (Double Rush Rate)
- **R-** Rush Same Day
- **1-** Next Day
- **2-** 2 Days
- **3-** 3 Days

If priority is not selected, your sample will be read, and charged, as a 1-day turnaround.

	Client Sample Description/Location/Identification	Analysis	Priority	Accept Reject	JSE Labs ID #
01	090616-01 South Fuel Oil Tank Farm Insulation	PLM	1	A	AB-1614830
02	090616-02 Middle Fuel Oil Tank Farm-Insulation	PLM	1		AB-1614831
03	090616-03 North Fuel Oil Tank Farm-Insulation	PLM	1	V	AB-1614832
04					
05					
06					
07					
08					
09					
10					

Special Instructions: Please include PO on the invoice. Thank You!

Client SIGN Here: [signature] Date: 09/08/16 8:00 AM PM

JSE, Accepted By: [signature] Date: 9/8/16 8:25 AM / PM

MC VI Disc (last 4): Appr # CASH Check # Amount $

Call / Fax / Email: Lock/Snap: 9/9 ag 9/9/16 SL Mail: R I

Jones Stohosky Environmental Laboratory, Inc.
3315 SE Harrison Street, Suite C, Milwaukie, Oregon 97222
Ph: 503-659-8338 Fax 503-659-7577
www.jselabs.com

NVLAP LAB CODE 200872-0

Asbestos Analysis of Bulk Materials by Polarized Light Microscopy

Portland General Electric
Project: Beaver Plant, Fuel Oil Tank Farm

JSE Project: 02067
Analysis Date: 09/09/2016
Report Date: 09/09/2016

Sample	Layer	Description	Binder/Matrix	Other Non-Asbestos	Asbestos (% Type)
090616-01 South Fuel Oil Tank Farm Insulation AB-1614830	LAYER 1	Yellow fibrous batting	misc.	90% Fibrous Glass	**None Detected**
	LAYER 2	Brown flakes	binders rust		**None Detected**
Subsamples ashed for quality assurance.					
090616-02 Middle Fuel Oil Tank Farm Insulation AB-1614831	LAYER 1	White fibrous batting	misc.	90% Fibrous Glass 0.1% Cellulose	**None Detected**
	LAYER 2	Brown flakes	binders rust		**None Detected**
Subsamples ashed for quality assurance.					
090616-03 North Fuel Oil Tank Farm Insulation AB-1614832	LAYER 1	Tan fibrous batting	particulate binders	70% Fibrous Glass	**None Detected**
	LAYER 2	Brown flakes	binders rust		**None Detected**
Subsamples ashed for quality assurance.					

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NVLAP LAB CODE 200872-0

Asbestos Analysis of Bulk Materials by Polarized Light Microscopy

Portland General Electric
Project: Beaver Plant, Fuel Oil Tank Farm

JSE Project: 02067
Analysis Date: 09/09/2016
Report Date: 09/09/2016

Sample	Layer	Description	Binder/Matrix	Other Non-Asbestos	Asbestos (% Type)

Analyst: Suzanne LeMay

Approved Signatory Suzanne LeMay Date 9/9/2016

JSE is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos analysis by EPA-600/M4-82-020 and EPA/600/R-93/116 methods for polarized light microscopy (PLM).

Analysis results are solely for the sample(s) analyzed. Asbestos content for an inhomogeneous sample is reported by layer when it is possible to subsample the discrete strata for individual analysis. Small diameter fibers may not be detected by this method.

Quantification is performed using visual area estimation unless otherwise stated in the report. Qualitative and quantitative transmission electron microscopy (TEM) analysis may be recommended for difficult samples. Quantitative analysis by PLM point count or TEM is recommended for sample(s) testing at < or = to 10% asbestos.

Asbestos includes the following minerals: chrysotile, amosite, crocidolite, tremolite, actinolite, anthophyllite. "Matrix" is defined as non-asbestos, non-binder fibrous and non-fibrous components. "Binder" is defined as a component added for cohesiveness.Non-asbestos sample constituents may not be definite.

This report may not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. If the NVLAP log does not appear beneath the JSE logo of this report then "This report contains data not covered by the NVLAP accreditation." (NIST Handbook 150, 2006.)

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Wednesday, September 14, 2016

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: PGE-Beaver Tank Farm / 661M-132960-04

Enclosed are the results of analyses for work order A6I0298, which was received by the laboratory on 9/10/2016 at 11:10:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	09/14/16 20:24

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B1-B-1-090916	A6I0298-01	Soil	09/09/16 12:50	09/10/16 11:10

Apex Laboratories

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	09/14/16 20:24

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B1-B-1-090916 (A6I0298-01)			**Matrix: Soil**		**Batch: 6090421**			
Diesel	ND	---	25.0	mg/kg dry	1	09/13/16 22:28	NWTPH-Dx	
Oil	ND	---	50.0	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	

Apex Laboratories

Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	09/14/16 20:24

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B1-B-1-090916 (A6I0298-01)			**Matrix: Soil**		**Batch: 6090401**			
% Solids	**94.2**	---	1.00	% by Weight	1	09/13/16 09:03	EPA 8000C	

Apex Laboratories

Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	09/14/16 20:24

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090421 - EPA 3546 (Fuels)							**Soil**					
Blank (6090421-BLK1)					Prepared: 09/13/16 07:25		Analyzed: 09/13/16 19:24					
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 99 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6090421-BS1)					Prepared: 09/13/16 07:25		Analyzed: 09/13/16 19:45					
NWTPH-Dx												
Diesel	118	---	25.0	mg/kg wet	1	125	---	94	76-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 100 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (6090421-DUP2)					Prepared: 09/13/16 07:25		Analyzed: 09/13/16 22:48					
QC Source Sample: B1-B-1-090916 (A6I0298-01)												
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	50.0	"	"	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 98 %*	*Limits: 50-150 %*			*Dilution: 1x*					

Apex Laboratories

Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	09/14/16 20:24

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch 6090401 - Total Solids (Dry Weight) **Soil**

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

Apex Laboratories

Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	09/14/16 20:24

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6090421							
A6I0298-01	Soil	NWTPH-Dx	09/09/16 12:50	09/13/16 07:25	10.48g/5mL	10g/5mL	0.95

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6090401							
A6I0298-01	Soil	EPA 8000C	09/09/16 12:50	09/12/16 13:45	1N/A/1N/A	1N/A/1N/A	NA

Apex Laboratories

Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	09/14/16 20:24

Notes and Definitions

Qualifiers:

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

Philip Nerenberg, Lab Director

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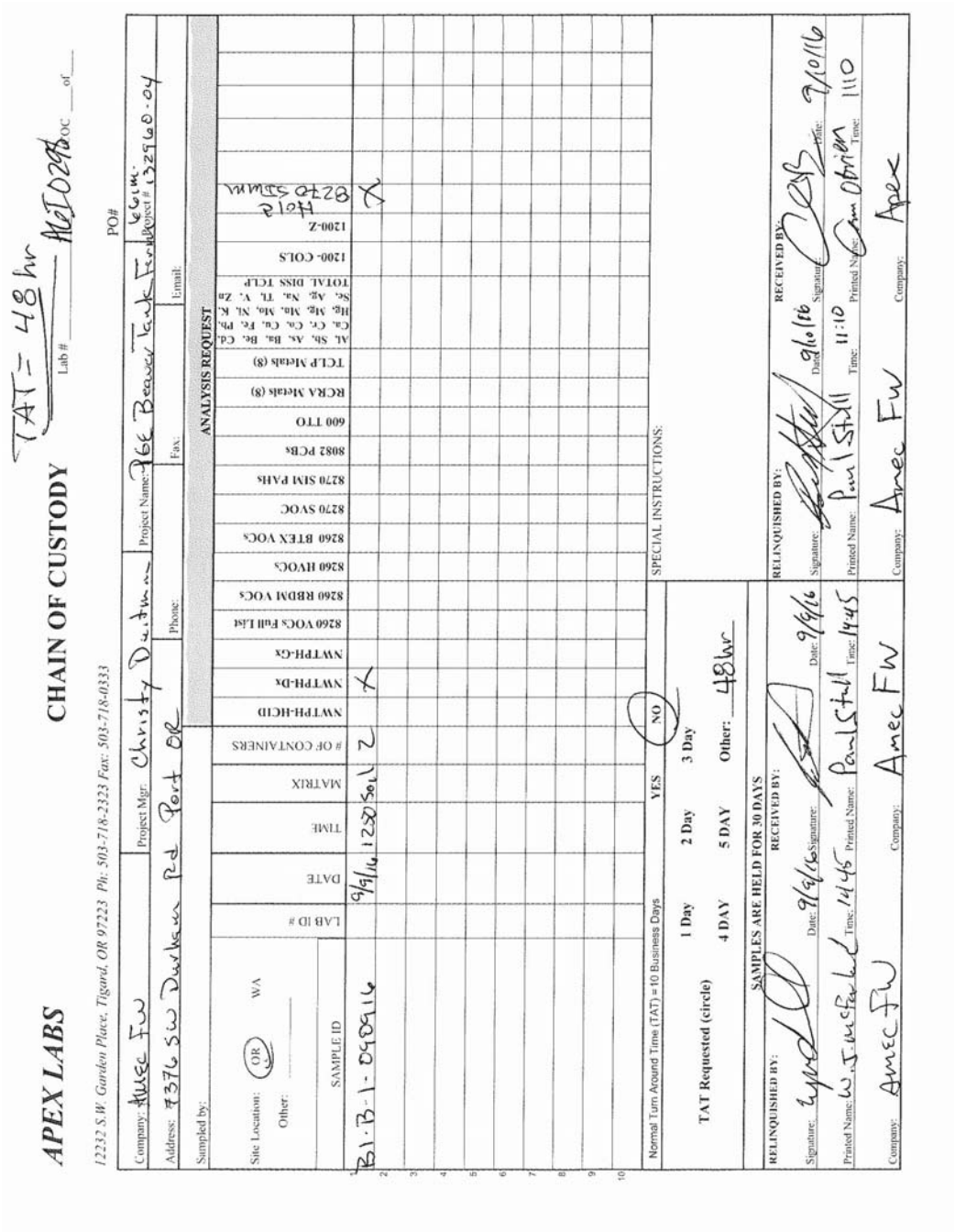
AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	09/14/16 20:24



APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

TAT = 48 hr

Lab # MET0298 COC ___ of ___

Company: AMEC FW | Project Mgr: Christy Duitman | Project Name: PGE Beaver Tank Farm | Project # 132960-04

Address: 7376 SW Durham Rd Port OR | Phone: | Fax: | Email:

PO#

Sampled by:

Site Location: OR WA Other: ____

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z	Hold 8270 SIM
1 B1-B-1-090916		9/9/16	1230	soil	2		X															X
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Normal Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 4 DAY | 5 DAY | Other: 48hr

SPECIAL INSTRUCTIONS: YES / NO

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: [signature] Date: 9/9/16 Time: 1445 Printed Name: Paul Stahl Company: Amec FW

RECEIVED BY: Signature: [signature] Date: 9/9/16 Time: 1445 Printed Name: W. J. McFarlane Company: Amec FW

RELINQUISHED BY: Signature: [signature] Date: 9/10/16 Time: 11:10 Printed Name: Jim Ostrem Company: Apex

RECEIVED BY: Signature: [signature] Date: 9/10/16 Time: 1110 Printed Name: [illegible] Company: Apex

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

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503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	09/14/16 20:24

APEX LABS COOLER RECEIPT FORM

Client: AMEC FW Element WO#: A6I0298

Project/Project #: PGE Beaver Tank Farm

Delivery info:

Date/Time Received: 9/10/16 @ 1110 By: COB

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: KAL : 9/10/16 @ 1115

Chain of Custody Included? Yes X No ___ Custody Seals? Yes_____ No_____

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	4.2						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:_____

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: KAL : 9/10/16 @ 1117

All Samples Intact? Yes X No ___ Comments:_____

Bottle Labels/COCs agree? Yes X No ___ Comments: _____

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments_____

Water Samples: pH Checked and Appropriate (except VOAs): Yes___No___NA X

Comments: _____

Additional Information:_____

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

KAL

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Tuesday, September 27, 2016

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: PGE-Beaver Gen. Plant / 661M-32960-04

Enclosed are the results of analyses for work order A6I0688, which was received by the laboratory on 9/22/2016 at 2:20:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Philip Nerenberg, Lab Director

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Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
9S96 Wj Dmrha3 Road	Project Nn3 ber: 661- IS7064I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	40/79/16 16:1C

Ak AmNTICAm REPORT FOR SAMPmES

SAMPLE INFORMATION

SaYple II	maDoratorb II	Matrix	I ate SaYpled	I ate Received
B2-B-y-56t-09211U	A6846CCI41	Woil	40/71/16 16:45	40/77/16 12:74
B2-S-1-36t-09211U	A6846CCI4S	Woil	40/71/16 16:44	40/77/16 12:74

Apex Laboratories

Philip Nerenberg, Lab Director

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Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
9S96 Wj Dmrha3 Road	Project Nn3 ber: 661- IS7064I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	40/79/16 16:1C

Ak AmNTICAmSAMPmE RES%miTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	- ethod	Notes
B2-B-4-5ft-092116 (A6I0688-01)			**Matrix: Soil**		**Batch: 6090893**			
Diesel	ND	III	75.4	3 g/kg dru	1	40/7S/16 71:74	Nj TPHIDx	
Oil	ND	III	54.4	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 100 %*	*Limits: 50-150 %*	"	"	"	
B2-S-1-3ft-092116 (A6I0688-03)			**Matrix: Soil**		**Batch: 6090893**			
Diesel	ND	III	75.4	3 g/kg dru	1	40/7S/16 71:50	Nj TPHIDx	
Oil	ND	III	54.4	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 97 %*	*Limits: 50-150 %*	"	"	"	

Apex Laboratories

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
9S96 Wj Dmrha3 Road	Project Nn3 ber: 661- IS7064I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	40/79/16 16:1C

Ak AmNTICAmSAMPmE RES%miTS

Percent Dry Weight

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	- ethod	Notes
B2-B-4-5ft-092116 (A6I0688-01)			**Matrix: Soil**		**Batch: 6090872**			
4 Solids	**91.y**	III	1.44	% bu j eight	1	40/76/16 4C:51	EPA C444y	
B2-S-1-3ft-092116 (A6I0688-03)			**Matrix: Soil**		**Batch: 6090872**			
4 Solids	**9y.0**	III	1.44	% bu j eight	1	40/76/16 4C:51	EPA C444y	

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AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
9S96 Wy Dmrha3 Road	Project Nn3 ber: 661- IS7064I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	40/79/16 16:1C

Q%AmLTN COk TROm(QC) SAMPmE RES%mTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dil.	Wpike A3 omnt	Womrce Resmlt	%REy	%REy Li3 its	RPD	RPD Li3 it	Notes
Batch 6090893 - EPA 3546 (Fuels)							**Soil**					
BlanK(U090893-BmH1)					Prepared: 40/7S/16 15:54		Analuzed: 40/7S/16 74:21					
k WTPu -I x												
Diesel	ND	III	75.4	3 g/kg wet	1	III	III	III	III	III	III	
Oil	ND	III	54.4	"	"	III	III	III	III	III	III	
Surr: o-Terphenyl (Surr)			*Recovery: 97 %*	*Limits: 50-150 %*			*Dilution: 1x*					
mCS (U090893-BS1)					Prepared: 40/7S/16 15:54		Analuzed: 40/7S/16 71:44					
k WTPu -I x												
Diesel	145	III	75.4	3 g/kg wet	1	175	III	C2	96I115%	III	III	
Surr: o-Terphenyl (Surr)			*Recovery: 98 %*	*Limits: 50-150 %*			*Dilution: 1x*					
I f plicate (U090893-I %P1)					Prepared: 40/7S/16 15:54		Analuzed: 40/7S/16 71:24					
QC Sof rce SaYple: B2-B-y-56t-09211U (AUI0U88-01)												
k WTPu -I x												
Diesel	ND	III	75.4	3 g/kg dru	1	III	ND	III	III	III	S4%	
Oil	ND	III	54.4	"	"	III	ND	III	III	III	S4%	
Surr: o-Terphenyl (Surr)			*Recovery: 97 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
9S96 Wy Dmrha3 Road	Project Nn3 ber: 661- IS7064I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	40/79/16 16:1C

Q%AmLTN COk TROm (QC) SAMPmE RES%mTS

Percent Dry Weight

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dil.	Wpike A3 omnt	Womrce Resmlt	%REy	%REy Li3 its	RPD	RPD Li3 it	Notes
Batch 6090872 - Total Solids (Dry Weight)							**Soil**					
No y lient related Batch Qy sa3 ples analuzed for this batch. Wee notes page for 3 ore infor3 ation.												

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AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
9S96 Wj Dmrha3 Road	Project Nm3 ber: 661- IS7064I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	40/79/16 16:1C

SAMPmE PREPARATIOk Ik FORMATIOk

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Nm3 ber	- atrix	- ethod	Wa3 pled	Prepared	Wa3 ple 8nitial/Final	Defamlt 8nitial/Final	RL Prep Factor
Batch: 6090893							
A6846CCI41	Woil	Nj TPHIDx	40/71/16 16:45	40/7S/16 15:54	14.59g/53 L	14g/53 L	4.05
A6846CCI4S	Woil	Nj TPHIDx	40/71/16 16:44	40/7S/16 15:54	14.C9g/53 L	14g/53 L	4.07

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Nm3 ber	- atrix	- ethod	Wa3 pled	Prepared	Wa3 ple 8nitial/Final	Defamlt 8nitial/Final	RL Prep Factor
Batch: 6090872							
A6846CCI41	Woil	EPA C444y	40/71/16 16:45	40/7S/16 19:2S	1N/A/1N/A	1N/A/1N/A	NA
A6846CCI4S	Woil	EPA C444y	40/71/16 16:44	40/7S/16 19:2S	1N/A/1N/A	1N/A/1N/A	NA

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AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
9S96 Wj Dmrha3 Road	Project Nm3 ber: 661- IS7064I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	40/79/16 16:1C

k otes and I eGinitions

Qmalifiers:

Notes and y onventions:

DET	Analute DETEy TED
ND	Analute NOT DETEy TED at or above the reporting li3 it
NR	Not Reported
dru	Wa3 ple resmlts reported on a dru weight basis. Resmlts listed as 'wet' or withomt 'dru'designation are not dru weight corrected.
RPD	Relative Percent Difference
- DL	8f - DL is not listed, data has been evalmated to the - ethod Reporting Li3 it onlu.
j - Wy	j ater - iscible Wolvent y orrection has been applied to Resmlts and - RLs for volatiles soil sa3 ples per EPA C444y .
Batch Qy	Unless specificallu reqmested, this report contains onlu resmlts for Batch Qy derived fro3 client sa3 ples inclmded in this report. All analuses were perfor3 ed with the appropriate Batch Qy (inclmding Wa3 ple Dmplicates, - atrix Wpikes and/or - atrix Wpike Dmplicates) in order to 3 eet or exceed 3 ethod and regmlatoru reqmire3 ents. Anu exceptions to this will be qmalified in this report. y o3 plete Batch Qy resmlts are available mpon reqmest. 8n cases where there is insmfficient sa3 ple provided for Wa3 ple Dmplicates and/or - atrix Wpikes, a Lab y ontrol Wa3 ple Dmplicate (Ly WDmp) is analuzed to de3 onstrate accmracu and precision of the extraction and analusis.
Blank Policu	Apex assesses blank data for potential high bias down to a level eqmal to ½ the 3 ethod reporting li3 it (- RL), except for conventional che3 istru and Hy 8D analuses which are assessed onlu to the - RL. Wa3 ple resmlts flagged with a B or BI47 qmalifier are potentiallu biased high if theu are less than ten ti3 es the level fomnd in the blank for inorganic analuses or less than five ti3 es the level fomnd in the blank for organic analuses. For accmrate co3 parison of volatile resmlts to the level fomnd in the blank; water sa3 ple resmlts shomld be divided bu the dilmtion factor, and soil sa3 ple resmlts shomld be divided bu 1/54 of the sa3 ple dilmtion to accomnt for the sa3 ple prep factor. Resmlts qmalified as reported below the - RL 3 au inclmde a potential high bias if associated with a B or BI47 qmalified blank. B and BI47 qmalifications are not applied to J qmalified resmlts reported below the - RL.
III	Qy resmlts are not applicable. For exa3 ple, % Recoveries for Blanks and Dmplicates, % RPD for Blanks, Blank Wpikes and - atrix Wpikes, etc.
***	Used to indicate a possible discrepancu with the Wa3 ple and Wa3 ple Dmplicate resmlts when the %RPD is not available. 8n this case, either the Wa3 ple or the Wa3 ple Dmplicate has a reportable resmlt for this analute, while the other is Non Detect (ND).

Apex Laboratories

Philip Nerenberg, Lab Director

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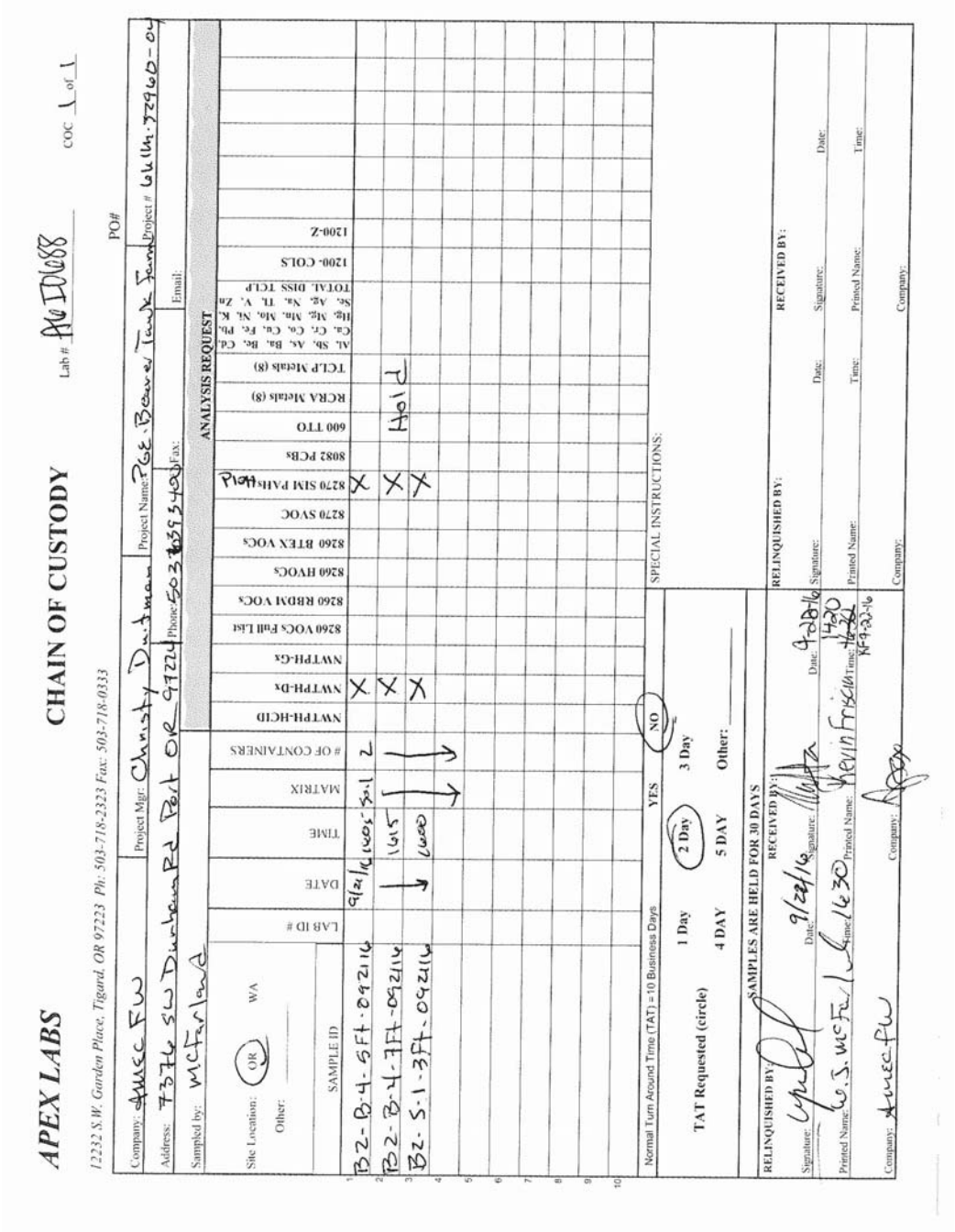
AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
9S96 Wj Dmrha3 Road	Project Nn3 ber: 661- IS7064I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	40/79/16 16:1C



APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

Lab # AQ1088 COC 1 of 1

Company: AMEC FW | Project Mgr: Christy Dutman | Project Name: PGE Beaver Tank Farm | Project # 6611M.72960-04

Address: 7376 SW Durham Rd Port OR 97224 | Phone: 503-639-5400 | Fax: | Email: | PO#

Sampled by: McFarland

Site Location: OR WA Other:

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs Hold	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z
1	B2-B-4-5Ft-092116		9/21/16	1000	Soil	2		X							X							
2	B2-B-4-7Ft-092116			1015				X							X			Hold				
3	B2-S-1-3Ft-092116			1000				X							X							
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Normal Turn Around Time (TAT) = 10 Business Days YES NO

SPECIAL INSTRUCTIONS:

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: _____

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Date: 9/22/16 Time: 1630 Printed Name: Co. S. McFarland Company: AMEC FW

RECEIVED BY: Signature: Date: 9/22/16 Time: 1630 Printed Name: Kevin Frisch Company: KFS

RELINQUISHED BY: Signature: Date: 9/22/16 Time: 1630 Printed Name: Kevin Frisch Company: KFS

RECEIVED BY: Signature: Date: Time: Printed Name: Company:

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Thursday, September 29, 2016

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: PGE-Beaver Tank Farm / 661M13296-04

Enclosed are the results of analyses for work order A6I0777, which was received by the laboratory on 9/27/2016 at 8:20:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wj Dmrha3 Road	Project Nn3 ber: 661- 1S706I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dnit3 an	40/70/16 17:4C

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
C-B-1-3.56t-092U1U	A684999I41	Soil	40/76/16 17:24	40/79/16 4C:74
C-S-1-36t-0921U	A684999I47	Soil	40/76/16 17:25	40/79/16 4C:74
C-S-2-36t-092U1U	A684999I4S	Soil	40/76/16 17:55	40/79/16 4C:74

Apex Laboratories

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wj Dmrha3 Road	Project Nn3 ber: 661- 1S706I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	40/70/16 17:4C

ANALYTICAL SAMPLE RES%LTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analute	Resnlt	- DL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	- ethod	Notes
C-B-1-3.5ft-092616 (A6I0777-01)			**Matrix: Soil**		**Batch: 6090994**			
Diesel	ND	III	75.4	3 g/kg dru	1	40/7C/16 45:72	Nj TPHIDx	
Oil	ND	III	54.4	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 96 %*	*Limits: 50-150 %*	"	"	"	
C-S-1-3ft-09216 (A6I0777-02)			**Matrix: Soil**		**Batch: 6090994**			
Diesel	ND	III	75.4	3 g/kg dru	1	40/7C/16 45:26	Nj TPHIDx	
Oil	ND	III	54.4	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 107 %*	*Limits: 50-150 %*	"	"	"	
C-S-2-3ft-092616 (A6I0777-03)			**Matrix: Soil**		**Batch: 6090994**			
Diesel	ND	III	75.4	3 g/kg dru	1	40/7C/16 46:4C	Nj TPHIDx	
Oil	ND	III	54.4	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 99 %*	*Limits: 50-150 %*	"	"	"	

Apex Laboratories

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wj Dmrha3 Road	Project Nn3 ber: 661- 1S706I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dnit3 an	40/70/16 17:4C

ANALYTICAL SAMPLE RES%LTS

Percent Dry Weight

Analute	Resnlt	- DL	Reporting Li3 it	Units	Dilntion	Date Analuzed	- ethod	Notes
C-B-1-3.5ft-092616 (A6I0777-01)			**Matrix: Soil**		**Batch: 6091038**			
4 Solids	**90.8**	III	1.44	% bu j eight	1	40/70/16 40:59	EPA C444y	
C-S-1-3ft-09216 (A6I0777-02)			**Matrix: Soil**		**Batch: 6091038**			
4 Solids	**95.2**	III	1.44	% bu j eight	1	40/70/16 40:59	EPA C444y	
C-S-2-3ft-092616 (A6I0777-03)			**Matrix: Soil**		**Batch: 6091038**			
4 Solids	**93.7**	III	1.44	% bu j eight	1	40/70/16 40:59	EPA C444y	

Apex Laboratories

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wy Dmrha3 Road	Project Nn3 ber: 661- 1S706I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	40/70/16 17:4C

Q%ALITY CONTROL (QC) SAMPLE RES%LTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analute	Resnlt	- DL	Reporting Li3 it	Units	Dil.	Wpike A3 omnt	Womrce Resnlt	%REy	%REy Li3 its	RPD	RPD Li3 it	Notes
Batch 6090994 - EPA 3546 (Fuels)							**Soil**					
Blank (U09099K-BLH1)					Prepared: 40/79/16 1S:24		Analuzed: 40/79/16 71:17					
NWTPu -Dx												
Diesel	ND	III	75.4	3 g/kg wet	1	III	III	III	III	III	III	
Oil	ND	III	54.4	"	"	III	III	III	III	III	III	
Surr: o-Terphenyl (Surr)		*Recovery:*	*104 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (U09099K-BS1)					Prepared: 40/79/16 1S:24		Analuzed: 40/79/16 71:S7					
NWTPu -Dx												
Diesel	141	III	75.4	3 g/kg wet	1	175	III	Cl	96I115%	III	III	
Surr: o-Terphenyl (Surr)		*Recovery:*	*107 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Df plicate (U09099K-D%P2)					Prepared: 40/79/16 1S:24		Analuzed: 40/7C/16 46:S4					
QC Sof rce Sample: C-S-2-36-092U1U (AUI0777-03)												
NWTPu -Dx												
Diesel	ND	III	75.4	3 g/kg dru	1	III	ND	III	III	III	S4%	
Oil	ND	III	54.4	"	"	III	ND	III	III	III	S4%	
Surr: o-Terphenyl (Surr)		*Recovery:*	*104 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wj Dmrha3 Road	Project Nn3 ber: 661- 1S706I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dnit3 an	40/70/16 17:4C

Q%ALITY CONTROL (QC) SAMPLE RES%LTS

Percent Dry Weight

Analute	Resnlt	- DL	Reporting Li3 it	Units	Dil.	Wpike A3 omnt	Womrce Resnlt	%REy	%REy Li3 its	RPD	RPD Li3 it	Notes
Batch 6091038 - Total Solids (Dry Weight)							**Soil**					
Df plicate (U091038-D%P3)					Prepared: 40/7C/16 11:S1		Analuzed: 40/70/16 40:59					
QC Sof rce Sample: C-S-2-36-092U1U (AU10777-03)												
EPA 8000C												
% Wolids	**93.U**	III	1.44	% bu j eight	1	III	0S.9	III	III	4.45	14%	

No y lient related Batch Qy sa3 ples analuzed for this batch. Wee notes page for 3 ore infor3 ation.

Apex Laboratories

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wj Dmrha3 Road	Project Nm3 ber: 661- 1S706I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	40/70/16 17:4C

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Nm3 ber	- atrix	- ethod	Wa3 pled	Prepared	Wa3 ple 8nitial/Final	Defam1t 8nitial/Final	RL Prep Factor
Batch: 6090994							
A684999I41	Woil	Nj TPHIDx	40/76/16 17:24	40/79/16 1S:24	14.0g/53 L	14g/53 L	4.07
A684999I47	Woil	Nj TPHIDx	40/76/16 17:25	40/79/16 1S:24	14.C5g/53 L	14g/53 L	4.07
A684999I4S	Woil	Nj TPHIDx	40/76/16 17:55	40/79/16 1S:24	14.76g/53 L	14g/53 L	4.0C

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Nm3 ber	- atrix	- ethod	Wa3 pled	Prepared	Wa3 ple 8nitial/Final	Defam1t 8nitial/Final	RL Prep Factor
Batch: 6091038							
A684999I41	Woil	EPA C444y	40/76/16 17:24	40/7C/16 11:S1	1N/A/1N/A	1N/A/1N/A	NA
A684999I47	Woil	EPA C444y	40/76/16 17:25	40/7C/16 11:S1	1N/A/1N/A	1N/A/1N/A	NA
A684999I4S	Woil	EPA C444y	40/76/16 17:55	40/7C/16 11:S1	1N/A/1N/A	1N/A/1N/A	NA

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wj Dmrha3 Road	Project Nm3 ber: 661- 1S706I42	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	40/70/16 17:4C

Notes and Definitions

Qmalifiers:

Notes and y onventions:

DET	Analute DETEy TED
ND	Analute NOT DETEy TED at or above the reporting li3 it
NR	Not Reported
dru	Wa3 ple resmlts reported on a dru weight basis. Resmlts listed as 'wet' or withomt 'dru'designation are not dru weight corrected.
RPD	Relative Percent Difference
- DL	8f - DL is not listed, data has been evalmated to the - ethod Reporting Li3 it onlu.
j - Wy	j ater - iscible Wolvent y orrection has been applied to Resmlts and - RLs for volatiles soil sa3 ples per EPA C444y .
Batch Qy	Unless specificallu reqmested, this report contains onlu resmlts for Batch Qy derived fro3 client sa3 ples inclmded in this report. All analuses were perfor3 ed with the appropriate Batch Qy (inclmding Wa3 ple Dmplicates, - atrix Wpikes and/or - atrix Wpike Dmplicates) in order to 3 eet or exceed 3 ethod and regmlatoru reqmire3 ents. Anu exceptions to this will be qmalified in this report. y o3 plete Batch Qy resmlts are available mpon reqmest. 8n cases where there is insmfficient sa3 ple provided for Wa3 ple Dmplicates and/or - atrix Wpikes, a Lab y ontrol Wa3 ple Dmplicate (Ly WDmp) is analuzed to de3 onstrate accmracu and precision of the extraction and analusis.
Blank Policu	Apex assesses blank data for potential high bias down to a level eqmal to ½ the 3 ethod reporting li3 it (- RL), except for conventional che3 istru and Hy 8D analuses which are assessed onlu to the - RL. Wa3 ple resmlts flagged with a B or BI47 qmalifier are potentiallu biased high if theu are less than ten ti3 es the level fomnd in the blank for inorganic analuses or less than five ti3 es the level fomnd in the blank for organic analuses. For accmrate co3 parison of volatile resmlts to the level fomnd in the blank; water sa3 ple resmlts shomld be divided bu the dilmtion factor, and soil sa3 ple resmlts shomld be divided bu 1/54 of the sa3 ple dilmtion to accomnt for the sa3 ple prep factor. Resmlts qmalified as reported below the - RL 3 au inclmde a potential high bias if associated with a B or BI47 qmalified blank. B and BI47 qmalifications are not applied to J qmalified resmlts reported below the - RL.
III	Qy resmlts are not applicable. For exa3 ple, % Recoveries for Blanks and Dmplicates, % RPD for Blanks, Blank Wpikes and - atrix Wpikes, etc.
***	Used to indicate a possible discrepancu with the Wa3 ple and Wa3 ple Dmplicate resmlts when the %RPD is not available. 8n this case, either the Wa3 ple or the Wa3 ple Dmplicate has a reportable resmlt for this analute, while the other is Non Detect (ND).

Apex Laboratories

Philip Nerenberg, Lab Director

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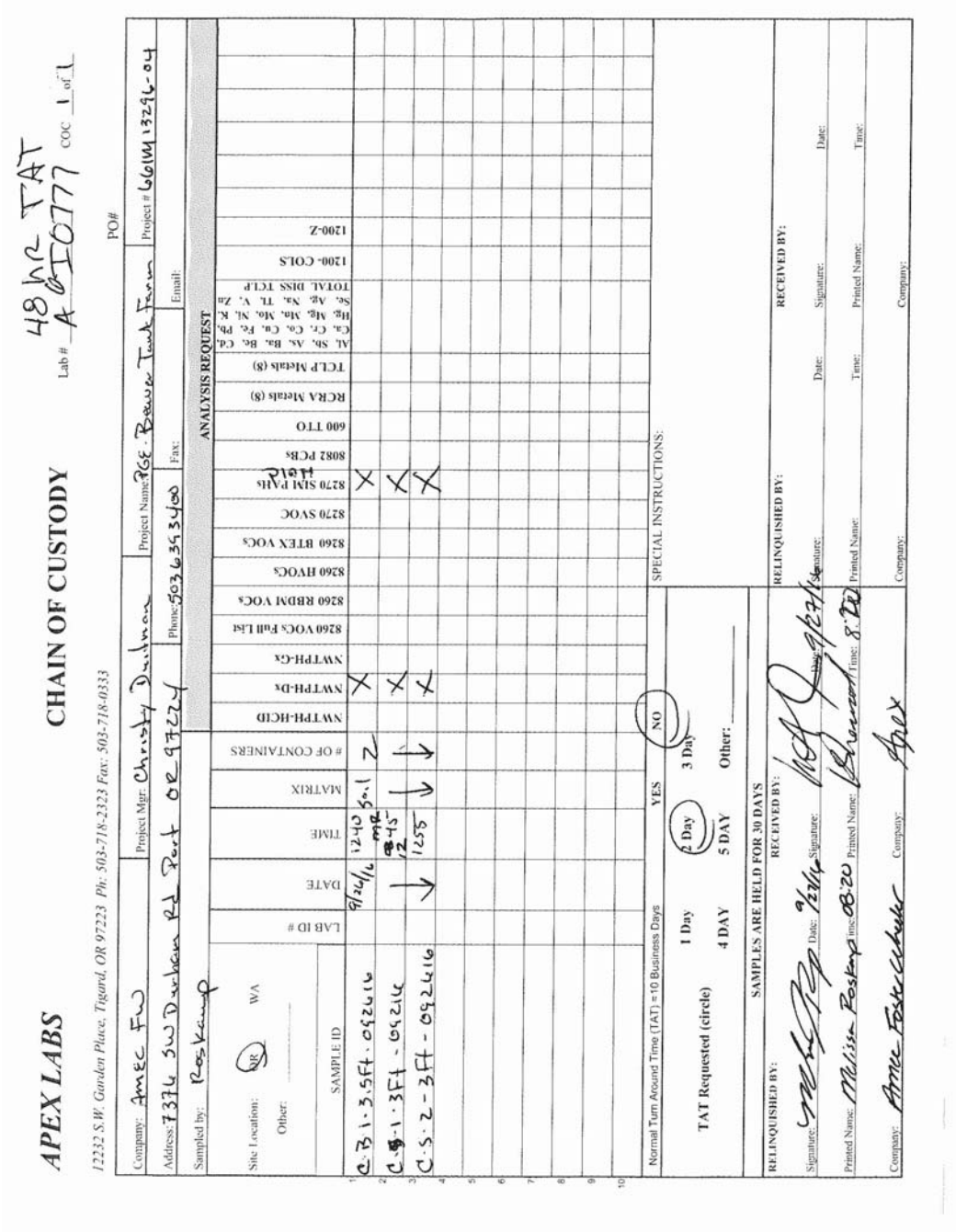
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9596 Wyndham Road	Project Number: 661-15706142	**Reported:**
Portland, OR 97772	Project Manager: Christian Dreitman	10/10/16 17:40



APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

48 hr TAT

Lab # A610777 COC 1 of 1

Company: AMEC FW | Project Mgr: Christy Dickman | Project Name: PGE - Beaver Tank Farm | Project # 661W13296-04 | PO#

Address: 7376 SW Durham Rd Port OR 97224 | Phone: 503 635 3400 | Fax: | Email:

Sampled by: Ros Kemp

Site Location: OR WA Other:

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z
1	C.B.1-3.5ft-092416		9/24/16	1240	Soil	2		X							X							
2	C.S.1-3ft-092416			1245				X							X							
3	C.S.2-3ft-092416			1255				X							X							
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Normal Turn Around Time (TAT) = 10 Business Days YES NO

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: ____

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Date: 9/24/16 Printed Name: Melissa Postema Time: 8:20 Company: AMEC Foster Wheeler

RECEIVED BY: Signature: Date: 9/27/16 Printed Name: Time: 8:20 Company: Apex

RELINQUISHED BY: Signature: Date: Printed Name: Time: Company:

RECEIVED BY: Signature: Date: Printed Name: Time: Company:

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Monday, October 3, 2016

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: PGE-Beaver Gen. Plant / 661M-132960

Enclosed are the results of analyses for work order A6I0136, which was received by the laboratory on 9/6/2016 at 4:19:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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AMENDED REPORT

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AREA-E-090616	A6I0136-01	Soil	09/06/16 13:30	09/06/16 16:19
AREA-G-090616	A6I0136-02	Soil	09/06/16 14:00	09/06/16 16:19

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AMENDED REPORT

AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06

ANALYTICAL CASE NARRATIVE

Work Order: A6I0136

Amended Report Revision 1:

This report supersedes all previous reports.

Analysis of PAHs were added after the previous report version had been completed.

Philip Nerenberg
Lab Director
10/3/16

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AREA-E-090616 (A6I0136-01RE1)			**Matrix: Soil**		**Batch: 6090231**			
Diesel	**10600**	---	422	mg/kg dry	20	09/08/16 11:36	NWTPH-Dx	
Oil	ND	---	844	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: %*	*Limits: 50-150 %*	"	"	"	*S-01*
AREA-G-090616 (A6I0136-02RE1)			**Matrix: Soil**		**Batch: 6090231**			
Diesel	**21000**	---	406	mg/kg dry	20	09/08/16 11:57	NWTPH-Dx	F-11
Oil	ND	---	811	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: %*	*Limits: 50-150 %*	"	"	"	*S-01*

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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AMENDED REPORT

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AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AREA-E-090616 (A6I0136-01)			**Matrix: Soil**		**Batch: 6090231**			**Q-22**
Acenaphthene	ND	---	1730	ug/kg dry	20	09/26/16 21:45	EPA 8270D (SIM)	R-02
Acenaphthylene	ND	---	865	"	"	"	"	R-02
Anthracene	ND	---	380	"	"	"	"	R-02
Benz(a)anthracene	ND	---	211	"	"	"	"	
Benzo(a)pyrene	ND	---	211	"	"	"	"	
Benzo(b)fluoranthene	ND	---	211	"	"	"	"	
Benzo(k)fluoranthene	ND	---	211	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	211	"	"	"	"	
Chrysene	ND	---	211	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	211	"	"	"	"	
Dibenzofuran	ND	---	2740	"	"	"	"	R-02
Fluoranthene	ND	---	211	"	"	"	"	
Fluorene	**4300**	---	211	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	211	"	"	"	"	
1-Methylnaphthalene	**31300**	---	211	"	"	"	"	
2-Methylnaphthalene	**44200**	---	211	"	"	"	"	
Naphthalene	**11200**	---	211	"	"	"	"	
Phenanthrene	**6830**	---	211	"	"	"	"	
Pyrene	ND	---	211	"	"	"	"	

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Tigard, OR 97223
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503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AREA-G-090616 (A6I0136-02RE1)			**Matrix: Soil**		**Batch: 6090231**			**Q-22**
Acenaphthene	ND	---	203	ug/kg dry	20	09/29/16 04:10	EPA 8270D (SIM)	
Acenaphthylene	ND	---	203	"	"	"	"	
Anthracene	ND	---	203	"	"	"	"	
Benz(a)anthracene	ND	---	203	"	"	"	"	
Benzo(a)pyrene	ND	---	203	"	"	"	"	
Benzo(b)fluoranthene	ND	---	203	"	"	"	"	
Benzo(k)fluoranthene	ND	---	203	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	203	"	"	"	"	
Chrysene	ND	---	203	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	203	"	"	"	"	
Dibenzofuran	ND	---	203	"	"	"	"	
Fluoranthene	ND	---	203	"	"	"	"	
Fluorene	ND	---	203	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	203	"	"	"	"	
1-Methylnaphthalene	ND	---	203	"	"	"	"	
2-Methylnaphthalene	ND	---	203	"	"	"	"	
Naphthalene	ND	---	203	"	"	"	"	
Phenanthrene	ND	---	203	"	"	"	"	
Pyrene	**1210**	---	203	"	"	"	"	M-04

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AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AREA-E-090616 (A6I0136-01)			**Matrix: Soil**		**Batch: 6090209**			
% Solids	**92.4**	---	1.00	% by Weight	1	09/08/16 09:25	EPA 8000C	
AREA-G-090616 (A6I0136-02)			**Matrix: Soil**		**Batch: 6090209**			
% Solids	**93.7**	---	1.00	% by Weight	1	09/08/16 09:25	EPA 8000C	

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AMENDED REPORT

AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090231 - EPA 3546 (Fuels)							**Soil**					
Blank (6090231-BLK1)					Prepared: 09/07/16 13:56		Analyzed: 09/07/16 18:10					
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 108 %*		*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6090231-BS1)					Prepared: 09/07/16 13:56		Analyzed: 09/07/16 18:30					
NWTPH-Dx												
Diesel	110	---	25.0	mg/kg wet	1	125	---	88	76-115%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 113 %*		*Limits: 50-150 %*			*Dilution: 1x*					

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AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090231 - EPA 3546 (Fuels)							**Soil**					
Blank (6090231-BLK2)					Prepared: 09/07/16 13:56		Analyzed: 09/26/16 21:16					**Q-22**
EPA 8270D (SIM)												
Acenaphthene	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthene	ND	---	9.09	"	"	---	---	---	---	---	---	
Acenaphthylene	ND	---	9.09	"	"	---	---	---	---	---	---	
Acenaphthylene	ND	---	9.09	"	"	---	---	---	---	---	---	
Anthracene	ND	---	9.09	"	"	---	---	---	---	---	---	
Anthracene	ND	---	9.09	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	9.09	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	9.09	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	9.09	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	9.09	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	9.09	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	9.09	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	9.09	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	9.09	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	9.09	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	9.09	"	"	---	---	---	---	---	---	
Chrysene	ND	---	9.09	"	"	---	---	---	---	---	---	
Chrysene	ND	---	9.09	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	9.09	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	9.09	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	---	9.09	"	"	---	---	---	---	---	---	
Fluoranthene	ND	---	9.09	"	"	---	---	---	---	---	---	
Fluoranthene	ND	---	9.09	"	"	---	---	---	---	---	---	
Fluorene	ND	---	9.09	"	"	---	---	---	---	---	---	
Fluorene	ND	---	9.09	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	9.09	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	9.09	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	9.09	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	9.09	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	9.09	"	"	---	---	---	---	---	---	

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AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090231 - EPA 3546 (Fuels)							**Soil**					
Blank (6090231-BLK2)					Prepared: 09/07/16 13:56		Analyzed: 09/26/16 21:16					**Q-22**
Naphthalene	ND	---	9.09	ug/kg wet	"	---	---	---	---	---	---	
Phenanthrene	ND	---	9.09	"	"	---	---	---	---	---	---	
Phenanthrene	ND	---	9.09	"	"	---	---	---	---	---	---	
Pyrene	ND	---	9.09	"	"	---	---	---	---	---	---	
Pyrene	ND	---	9.09	"	"	---	---	---	---	---	---	

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AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090209 - Total Solids (Dry Weight)							**Soil**					
Duplicate (6090209-DUP4)					Prepared: 09/07/16 10:04		Analyzed: 09/08/16 09:25					
QC Source Sample: AREA-G-090616 (A6I0136-02)												
EPA 8000C												
% Solids	**93.9**	---	1.00	% by Weight	1	---	93.7	---	---	0.3	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6090231							
A6I0136-01RE1	Soil	NWTPH-Dx	09/06/16 13:30	09/07/16 13:56	10.25g/5mL	10g/5mL	0.98
A6I0136-02RE1	Soil	NWTPH-Dx	09/06/16 14:00	09/07/16 13:56	10.53g/5mL	10g/5mL	0.95

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6090231							
A6I0136-01	Soil	EPA 8270D (SIM)	09/06/16 13:30	09/07/16 13:56	10.25g/5mL	10g/5mL	0.98
A6I0136-02RE1	Soil	EPA 8270D (SIM)	09/06/16 14:00	09/07/16 13:56	10.53g/5mL	10g/5mL	0.95

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6090209							
A6I0136-01	Soil	EPA 8000C	09/06/16 13:30	09/07/16 10:02	1N/A/1N/A	1N/A/1N/A	NA
A6I0136-02	Soil	EPA 8000C	09/06/16 14:00	09/07/16 10:02	1N/A/1N/A	1N/A/1N/A	NA

Apex Laboratories

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMENDED REPORT

AMEC Foster Wheeler	Project: **PGE-Beaver Gen. Plant**	
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06

Notes and Definitions

Qualifiers:

F-11	The hydrocarbon pattern indicates possible weathered diesel, or a contribution from a related component.
M-04	Due to matrix interference, this analyte cannot be accurately quantified. The reported result may contain a high bias.
Q-22	Due to limited sample volume or hold time restraints, the NWTPH-Dx extract was used for the 8270 SIM PAH analysis. Therefore no PAH Surrogates and/or Batch QC results are available. Results are Estimated Values.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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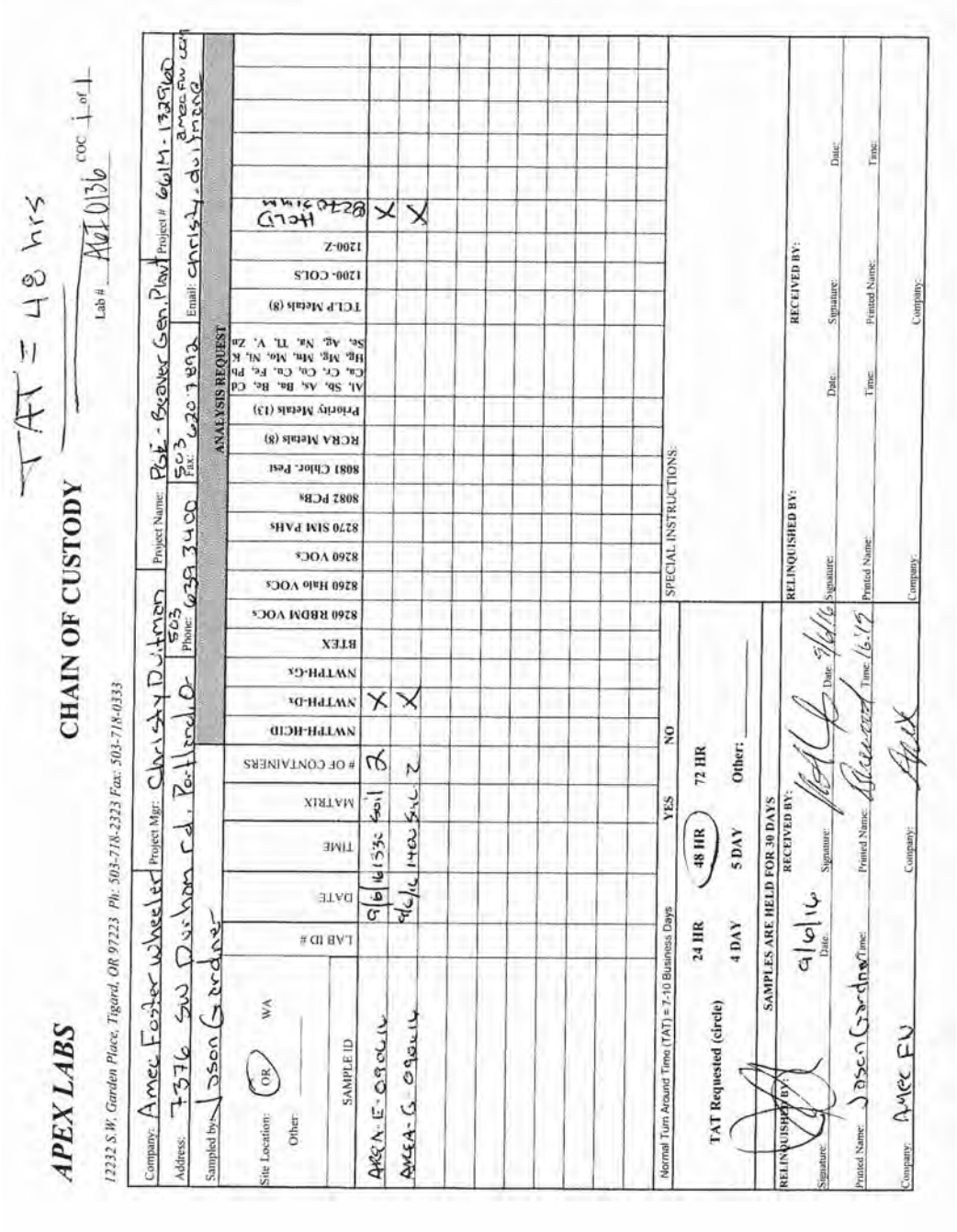
7376 SW Durham Road	Project Number: 661M-132960	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/03/16 16:06



APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

TAT = 48 hrs

Lab # A0L0136 COC 1 of 1

Company: Amec Foster Wheeler Project Mgr: Christy Duitman Project Name: PGE - Beaver Gen. Plant Project # 661M-132960

Address: 7376 SW Durham rd. Portland, OR Phone: 639 3400 503 Fax: 620 7892 Email: christy.duitman@amecfw.com

Sampled by: Jason Gardner

Site Location: OR WA Other: ____

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs	8270 SIM PAHs	8082 PCBs	8081 Chlor. Pest	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn	TCLP Metals (8)	1200- COLS	1200-Z	HCLD 8270 SIM PAHs
AMEA-E-090616		9/6/16	1535	Soil	2		X															X
AMEA-G-090616		9/6/16	1400	Soil	2		X															X

Normal Turn Around Time (TAT) = 7-10 Business Days YES NO

SPECIAL INSTRUCTIONS:

TAT Requested (circle): 24 HR 48 HR 72 HR 4 DAY 5 DAY Other: ____

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Date: 9/6/16 Printed Name: Jason Gardner Time: Company: AMEC FW

RECEIVED BY: Signature: Date: 9/6/16 Printed Name: Time: 16:19 Company: Apex

RELINQUISHED BY: Signature: Date: Printed Name: Time: Company:

RECEIVED BY: Signature: Date: Printed Name: Time: Company:

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AMEC Foster Wheeler
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Portla. 74S R dD00O

RE: PGE-Beaver na. / Far6 1332M-290d3, -, O

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nha. / coi wor i sy. x ALeq @agsp We aLLref yate coi r gi sy. ess a. 7 strywe to Lrovy7e the hyxhest 5i alytc servyf es to the e. vyro. 6 e. tal y. 7i strcp

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Apex LabOtadOtDs

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AMEC Foster Wheeler	r tOle0dn **PGE-Beaver TanN FarL**	
/ 7/ u M4 l W, aj NOa2	r tOle0di Wy betmuuRP 8R764uC8C:	**Reported:**
r Ocdao2f n N 4/ 66:	r tOle0dP aoa1etm3 , tDcS l WQj ao	RCyC7yRu RumRR

AYAI mTDCAI REPORT FOR SAMPI ES

SAMPLE INFORMATION

SaL ple Db	I ayorator6 Db	Matrix	b ate SaL pled	b ate Received
B-2-B1-3W-09201U	Au5CUzR8CR	MOIo	C4y6CyRu R: mRC	C4y6CyRu RzmU
B-2-B2-3W-09201U	Au5CUzR8C6	MOIo	C4y6CyRu R: m6C	C4y6CyRu RzmU
B-2-B3-3W-09201U	Au5CUzR8C7	MOIo	C4y6CyRu R: m7C	C4y6CyRu RzmU
u -B1-4.5W-09201U	Au5CUzR8C:	MOIo	C4y6CyRu R: mU	C4y6CyRu RzmU

Apex LabOcadOcIos

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AMEC Foster Wheeler	r tOle0dn **PGE-Beaver TanN FarL**	
/ 7/ u M4 l W, aj NOa2	r tOle0di Wj betmuuRP 8R764uC8C:	**Reported:**
r Ocdao2f n N 4/ 66:	r tOle0dP aoa1etm3 , tDcS l WOj ao	RCyC7yRu RumRR

AYAI mTDCAI CASE YARRATD%E

Work Order: A6I0581

A6 e. 7e7 ReLort Revysyo. 2:

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A. alcsys owPAHs k ere a77e7 awer the Lrevyoi s reLort versyo. ha7 gee. f o6 Llete7 p

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Apex LabOtadOtDs

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/ 7/ u M4 l W, aj NOa2	r tOle0di Wy betmuuRP 8R764uC8C:	**Reported:**
r Ocdao2f n N 4/ 66:	r tOle0dP aoa1etm3 , tDcS l WOj ao	RCyC7yRu RumRR

AYAI mTDCAI SAMPI E RESQI TS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

AoacScde	NesWcl	P l L	NepOcdDo1 LDp Dd	T oDds	l DWd0o	l ade AoacSHe2	P ed, O2	i Odes
B-2-B1-3ft-092016 (A6I0581-01)			**Matrix: Soil**		**Batch: 6090722**			
l Dsec	i l	888	6U'C	j 1y. 1 2tS	R	C4y6RyRu C6m7:	i - gr k 8l x	
n Do	i l	888	UC'C	E	E	E	E	
Surrogate: o-Terphenyl (Surr)			*Recovery: 104 %*	*Limits: 50-150 %*	E	E	E	
B-2-B2-3ft-092016 (A6I0581-02)			**Matrix: Soil**		**Batch: 6090722**			
l Dsec	i l	888	6U'C	j 1y. 1 2tS	R	C4y6RyRu C6mh!	i - gr k 8l x	
n Do	i l	888	UC'C	E	E	E	E	
Surrogate: o-Terphenyl (Surr)			*Recovery: 106 %*	*Limits: 50-150 %*	E	E	E	
B-2-B3-3ft-092016 (A6I0581-03)			**Matrix: Soil**		**Batch: 6090747**			
l Dsec	i l	888	6U'C	j 1y. 1 2tS	R	C4y6RyRu CRm6U	i - gr k 8l x	
n Do	i l	888	UC'C	E	E	E	E	
Surrogate: o-Terphenyl (Surr)			*Recovery: 99 %*	*Limits: 50-150 %*	E	E	E	
H-B1-4.5ft-092016 (A6I0581-04RE1)			**Matrix: Soil**		**Batch: 6090747**			
b iesel	**8030**	888	: R4	j 1y. 1 2tS	6C	C4y6RyRu CzmRR	i - gr k 8l x	
n Do	i l	888	z74	E	E	E	E	
Surrogate: o-Terphenyl (Surr)			*Recovery: %*	*Limits: 50-150 %*	E	E	E	*S-01*

Apex LabOcadOcDos

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AMEC Foster Wheeler	r tOle0dn **PGE-Beaver TanN FarL**	
/ 7/ u M4 l W, aj NOa2	r tOle0di Wy betmuuRP 8R764uC8C:	**Reported:**
r Ocdao2f n N 4/ 66:	r tOle0dP aoa1etm3 , tDcS l WOj ao	RCyC7yRu RumRR

AYAI mTDCAI SAMPI E RESQI TS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

AoacSde	NesWd	P l L	NepOcdDo1 LDp Dd	ToDds	l DWD0o	l ade AoacSHe2	P ed, O2	i Odes
H-B1-4.5ft-092016 (A6I0581-04)			**Matrix: Soil**		**Batch: 6090864**			
A0eoap, d, eoe	i l	888	z6C	Wy. l 2tS	6C	C4y6uyRu R7m:	hr A z6/ Cl %M5P w	N8C6
A0eoap, d, Scœoe	i l	888	Rzu	E	E	E	E	
Aod, ta0eoe	i l	888	: : /	E	E	E	E	N8C6
BeoHPávaod, ta0eoe	i l	888	Rzu	E	E	E	E	
BeoHO%avpSteoe	i l	888	Rzu	E	E	E	E	
BeoHO%bvcWOtaod, eoe	i l	888	Rzu	E	E	E	E	
BeoHO%vcWOtaod, eoe	i l	888	Rzu	E	E	E	E	
BeoHO%f, fDpetScœoe	i l	888	Rzu	E	E	E	E	
3 , tSseoe	i l	888	Rzu	E	E	E	E	
l DeoHPáf, vaod, ta0eoe	i l	888	Rzu	E	E	E	E	
l DeoHO9Wao	i l	888	Rzu	E	E	E	E	
QcWOtaod, eoe	i l	888	Rzu	E	E	E	E	
QcWOteoe	i l	888	uz4	E	E	E	E	N8C6
5o2eoO%Rf6f7802vpSteoe	i l	888	Rzu	E	E	E	E	
R8P ed, Scoap, d, acœoe	i l	888	7R/	E	E	E	E	N8C6
68P ed, Scoap, d, acœoe	i l	888	Rzu	E	E	E	E	
i ap, d, acœoe	i l	888	77U	E	E	E	E	N8C6
Phenanthrene	**288**	888	Rzu	E	E	E	E	
P6rene	**U99**	888	Rzu	E	E	E	E	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 89 %*	*Limits: 44-120 %*	E	E	E	
p-Terphenyl-d14 (Surr)			*96 %*	*Limits: 54-127 %*	E	E	E	

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AMEC Foster Wheeler — r tOle0dm **PGE-Beaver TanN FarL**

/ 7/ u M4 l W, aj NOa2 — r tOle0di Wy betmuuRP 8R764uC8C: — **Reported:**

r Ocdao2f n N 4/ 66: — r tOle0dP aoa1etm3 , tDcS l WOj ao — RCyC7yRu RumRR

AYAI mTDCAI SAMPI E RESQI TS

Percent Dry Weight

AoacSde	NesWd	P l L	NepOcdDl LDp Dl	TolDs	l DWD0o	l ade AoacSHe2	P ed, O2	i Ote
B-2-B1-3ft-092016 (A6I0581-01)			**Matrix: Soil**		**Batch: 6090708**			
(Solids	**92.0**	888	R'CC	F bS - eD, d	R	C4y6RyRu C4m6u	hr A zCCC3	
B-2-B2-3ft-092016 (A6I0581-02)			**Matrix: Soil**		**Batch: 6090708**			
(Solids	**91.7**	888	R'CC	F bS - eD, d	R	C4y6RyRu C4m6u	hr A zCCC3	
B-2-B3-3ft-092016 (A6I0581-03)			**Matrix: Soil**		**Batch: 6090708**			
(Solids	**94.7**	888	R'CC	F bS - eD, d	R	C4y6RyRu C4m6u	hr A zCCC3	
H-B1-4.5ft-092016 (A6I0581-04)			**Matrix: Soil**		**Batch: 6090708**			
(Solids	**91.1**	888	R'CC	F bS - eD, d	R	C4y6RyRu C4m6u	hr A zCCC3	

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AMEC Foster Wheeler	r tOle0dm **PGE-Beaver TanN FarL**	
/ 7/ u M4 l W, aj NOa2	r tOle0di Wy betmuuRP 8R764uC8C:	**Reported:**
r Ocdao2f n N 4/ 66:	r tOle0dP aoa1etm3 , tDcS l WOj ao	RCyC7yRu RumRR

) QAI DTm COYTROI k) CKSAMPI E RESQI TS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

AoacSde	NesWd	P l L	NepOtdDl LDp Dl	TolDs	l D'	MpDe Aj OWd	MOW0e NesWd	F Nh3	F Nh3 LDp Ds	Nr l	Nr l LDp Dl	i Ots
Batch 6090722 - EPA 3546 (Fuels)							**Soil**					
BlanNkL090722-BI H1K					r tepate2mC4y6CyRu RCm:		AoacSH-2mC4y6CyRu R7m6u					
YWTPu -b x												
l Dsec	i l	888	6U'C	j 1y. 1 v ed	R	888	888	888	888	888	888	
n Do	i l	888	UC'C	E	E	888	888	888	888	888	888	
Surr: o-Terphenyl (Surr)			*Recovery: 86 %*	*Limits: 50-150 %*			*Dilution: 1x*					
I CS kL090722-BS1K					r tepate2mC4y6CyRu RCm:		AoacSH-2mC4y6CyRu R7mu					
YWTPu -b x												
l Dsec	RCU	888	6U'C	j 1y. 1 v ed	R	R6U	888	z:	/ u8RRLF	888	888	
Surr: o-Terphenyl (Surr)			*Recovery: 93 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Batch 6090747 - EPA 3546 (Fuels)							**Soil**					
BlanNkL090747-BI H1K					r tepate2mC4y6CyRu R4m77		AoacSH-2mC4y6RyRu CCm6U					
YWTPu -b x												
l Dsec	i l	888	6U'C	j 1y. 1 v ed	R	888	888	888	888	888	888	
n Do	i l	888	UC'C	E	E	888	888	888	888	888	888	
Surr: o-Terphenyl (Surr)			*Recovery: 105 %*	*Limits: 50-150 %*			*Dilution: 1x*					
I CS kL090747-BS1K					r tepate2mC4y6CyRu R4m77		AoacSH-2mC4y6RyRu CCmU					
YWTPu -b x												
l Dsec	RRu	888	6U'C	j 1y. 1 v ed	R	R6U	888	47	/ u8RRLF	888	888	
Surr: o-Terphenyl (Surr)			*Recovery: 104 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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AMEC Foster Wheeler	r tOle0dm **PGE-Beaver TanN FarL**	
/ 7/ u M4 l W, aj NOa2	r tOle0di Wj betmuuRP 8R764uC8C:	**Reported:**
r Ocdao2f n N 4/ 66:	r tOle0dP aoa1etm3 , tDcS l WOj ao	RCyC7yRu RumRR

) QAI DTm COYTROI k) CKSAMPI E RESQI TS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

AoacSde	NesWd	P l L	NepOtdD1 LDp Dl	TolDs	l D'	MpDe Aj OWd	MOW0e NesWd	F Nh3	F Nh3 LDp Dls	Nr l	Nr l LDp Dl	i Ots
Batch 6090864 - EPA 3546							**Soil**					
BlanNkL0908U4-BI H1K				r tepate2mC4y67yRu RCrRC AoacSH-2mC4y6uyRu RRmRz								
EPA 8270b lSDMK												
A0eoap, d, eoe	i l	888	z"77	Wy. 1 v ed	R	888	888	888	888	888	888	
A0eoap, d, Scœoe	i l	888	z"77	E	E	888	888	888	888	888	888	
Aod, ta0eoe	i l	888	z"77	E	E	888	888	888	888	888	888	
BeoHPáwaod, ta0eoe	i l	888	z"77	E	E	888	888	888	888	888	888	
BeoHO%avpSteoe	i l	888	z"77	E	E	888	888	888	888	888	888	
BeoHO%v0eWOtaod, eoe	i l	888	z"77	E	E	888	888	888	888	888	888	
BeoHO%v0eWOtaod, eoe	i l	888	z"77	E	E	888	888	888	888	888	888	
BeoHO%f, fDpetScœoe	i l	888	z"77	E	E	888	888	888	888	888	888	
3 , tSseoe	i l	888	z"77	E	E	888	888	888	888	888	888	
l DeoHPáf, waod, ta0eoe	i l	888	z"77	E	E	888	888	888	888	888	888	
l DeoHO9Wao	i l	888	z"77	E	E	888	888	888	888	888	888	
QeWOtaod, eoe	i l	888	z"77	E	E	888	888	888	888	888	888	
QeWOteoe	i l	888	z"77	E	E	888	888	888	888	888	888	
5o2eoO%Rf6f7802vpSteoe	i l	888	z"77	E	E	888	888	888	888	888	888	
R8P ed, Scoap, d, acœoe	i l	888	z"77	E	E	888	888	888	888	888	888	
68P ed, Scoap, d, acœoe	i l	888	z"77	E	E	888	888	888	888	888	888	
i ap, d, acœoe	i l	888	z"77	E	E	888	888	888	888	888	888	
r , eoaod, teoe	i l	888	z"77	E	E	888	888	888	888	888	888	
r Steoe	i l	888	z"77	E	E	888	888	888	888	888	888	

Surr: 2-Fluorobiphenyl (Surr) Recovery: 95 % Limits: 44-120 % Dilution: 1x
p-Terphenyl-d14 (Surr) 98 % 54-127 % "

I CS kL0908U4-BS1K				r tepate2mC4y67yRu RCrRC AoacSH-2mC4y6uyRu RRmz							
EPA 8270b lSDMK											
A0eoap, d, eoe	/ : :	888	RC'C	Wy. 1 v ed	R	zCC	888	47	: C8R66F	888	888
A0eoap, d, Scœoe	/ Uu	888	RC'C	E	E	E	888	4:	768R76F	888	888
Aod, ta0eoe	/ 4:	888	RC'C	E	E	E	888	44	: / 8R67F	888	888
BeoHPáwaod, ta0eoe	/ : U	888	RC'C	E	E	E	888	47	: 48R6uF	888	888
BeoHO%avpSteoe	/ uR	888	RC'C	E	E	E	888	4U	: U8R64F	888	888
BeoHO%v0eWOtaod, eoe	/ R6	888	RC'C	E	E	E	888	z4	: U8R76F	888	888
BeoHO%v0eWOtaod, eoe	/ 4U	888	RC'C	E	E	E	888	44	: / 8R76F	888	888

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r , DDp i eteobet1f Lab l DDe0dOt

Apex Labs

APhi l hl Nhr n Ng

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	r tOle0dm **PGE-Beaver TanN FarL**	
/ 7/ u M4 l W, aj NOa2	r tOle0di Wy betmuuRP 8R764uC8C:	**Reported:**
r Ocdao2f n N 4/ 66:	r tOle0dP aoa1etm3 , tDcS l WOj ao	RCyC7yRu RumRR

) QAI DTm COYTROI k) CKSAMPI E RESQI TS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

AoacSde	NesWd	P l L	NepOtdD1 LDp Dl	TolDs	l D'	MpDe Aj OWd	MOW0e NesWd	F Nh3	F Nh3 LDp Ds	Nr l	Nr l LDp Dl	i Ote s
Batch 6090864 - EPA 3546							**Soil**					
I CS kD0908U4-BS1K					r tepate2mC4y67yRu RCmRC AoacSH-2mC4y6uyRu RRmz							
BeoHO%bf, fDpetSœoe	uz6	888	RC'C	E	E	E	888	zU	: 78R7: F	888	888	
3 , tSseoe	/ / u	888	RC'C	E	E	E	888	4/	UC8R6: F	888	888	
l DeoH%af, vaod, ta0eoe	/ : /	888	RC'C	E	E	E	888	47	: U8R7: F	888	888	
l DeoHO9Wao	/ uC	888	RC'C	E	E	E	888	4U	: : 8R6CF	888	888	
QeWOtaod, eoe	/ : R	888	RC'C	E	E	E	888	47	UC8R6/ F	888	888	
QeWOteoe	/ / :	888	RC'C	E	E	E	888	4/	: 78R6UF	888	888	
5o2eoO%Rf6f7802vpSteoe	u/ 4	888	RC'C	E	E	E	888	zU	: U8R77F	888	888	
R8P ed, Scoap, d, aœoe	/ U4	888	RC'C	E	E	E	888	4U	: C8R6CF	888	888	
68P ed, Scoap, d, aœoe	/ 77	888	RC'C	E	E	E	888	46	7z8R66F	888	888	
i ap, d, aœoe	/ Ru	888	RC'C	E	E	E	888	4C	7U8R67F	888	888	
r , eoaod, teoe	/ uR	888	RC'C	E	E	E	888	4U	UC8R6RF	888	888	
r Steoe	/ : U	888	RC'C	E	E	E	888	47	: / 8R6/ F	888	888	

Surr: 2-Fluorobiphenyl (Surr) Recovery: 94 % Limits: 44-120 % Dilution: 1x
p-Terphenyl-d14 (Surr) 95 % 54-127 % "

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	r tOle0dm **PGE-Beaver TanN FarL**	
/ 7/ u M4 l W, aj NOa2	r tOle0di Wy betmuuRP 8R764uC8C:	**Reported:**
r Ocdao2f n N 4/ 66:	r tOle0dP aoa1etm3 , tIdS l WOj ao	RCyC7yRu RumRR

) QAI DTm COYTROI k) CKSAMPI E RESQI TS

Percent Dry Weight

AoacSde	NesWd	P l L	NepOcdI1 LI) I1	TolIs	l I1'	MpDe Aj OWd	MOW0e NesWd	F Nh3	F Nh3 LI) I1s	Nr l	Nr l LI) I1	i Ote
Batch 6090708 - Total Solids (Dry Weight)							**Soil**					
b f plicate kU090708-b QP8K					r tepate2mC4y6CyRu 6Rm64		AoacSH-2mC4y6RyRu C4m6u					
) C Sof rce SaL ple: u -B1-4.5W-09201U kAUD0581-04K												
EPA 8000C												
F MOd2s	**91.2**	888	R'CC	F bS - eD, d	R	888	4R'R	888	888	C'R	RCF	

i O3 de0odteeade2 Bad0, q 3 saj pœs aoacSH-2 9Ot d, I0 bad0, " Mee oOtes pa1e 9Ot j Ote I09Ot j ad00b"

Apex LabOtadOtI0s

r , I0I0 i eteobet1f Lab l I0e0dOt

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APhi l hl Nhr n Ng

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	r tOle0dn **PGE-Beaver TanN FarL**	
/ 7/ u M4 l W, aj NOa2	r tOle0di Wy betmuuRP 8R764uC8C:	**Reported:**
r Ocdao2f n N 4/ 66:	r tOle0dP aoa1etm3 , tDcS l WOj ao	RCyC7yRu RumRR

SAMPI E PREPARATDOY DY FORMATDOY

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab i Wy bet	P adDt	P ed, O2	Maj pœ2	r tepate2	Maj pœ 5oDDacyQDac	l e9aWd 5oDDacyQDac	NL r tep Qa0dOt
Batf h: 3, d, D00							
Au5CUzR8CR	MODo	i - g r k 8l x	C4y6CyRu R: mRC	C4y6CyRu R4mR:	RC'uR1yUj L	RC1yUj L	C'4:
Au5CUzR8C6	MODo	i - g r k 8l x	C4y6CyRu R: m6C	C4y6CyRu R4mR:	RC'741yUj L	RC1yUj L	C'4u
Batf h: 3, d, DOD							
Au5CUzR8C7	MODo	i - g r k 8l x	C4y6CyRu R: m7C	C4y6CyRu R4m7u	RC': 41yUj L	RC1yUj L	C'4U
Au5CUzR8C: NhR	MODo	i - g r k 8l x	C4y6CyRu R: mU	C4y6CyRu R4m7u	RC': / 1yUj L	RC1yUj L	C'4u

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3546

Lab i Wy bet	P adDt	P ed, O2	Maj pœ2	r tepate2	Maj pœ 5oDDacyQDac	l e9aWd 5oDDacyQDac	NL r tep Qa0dOt
Batf h: 3, d, T3O							
Au5CUzR8C:	MODo	hr A z6/ Cl %MSP w	C4y6CyRu R: mU	C4y67yRu R7mz	RR'/ z1yUj L	RC1yUj L	C'zU

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab i Wy bet	P adDt	P ed, O2	Maj pœ2	r tepate2	Maj pœ 5oDDacyQDac	l e9aWd 5oDDacyQDac	NL r tep Qa0dOt
Batf h: 3, d, D, T							
Au5CUzR8CR	MODo	hr A zCCC3	C4y6CyRu R: mRC	C4y6CyRu 6Cm6	Ri yAyRi yA	Ri yAyRi yA	i A
Au5CUzR8C6	MODo	hr A zCCC3	C4y6CyRu R: m6C	C4y6CyRu 6Cm6	Ri yAyRi yA	Ri yAyRi yA	i A
Au5CUzR8C7	MODo	hr A zCCC3	C4y6CyRu R: m7C	C4y6CyRu 6Rm64	Ri yAyRi yA	Ri yAyRi yA	i A
Au5CUzR8C:	MODo	hr A zCCC3	C4y6CyRu R: mU	C4y6CyRu 6Rm64	Ri yAyRi yA	Ri yAyRi yA	i A

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	r tOle0dn **PGE-Beaver TanN FarL**	
/ 7/ u M4 l W, aj NOa2	r tOle0di Wj betmuuRP 8R764uC8C:	**Reported:**
r Otdao2f n N 4/ 66:	r tOle0dP aoa1etm3 , tIdS l Wdj ao	RCyC7yRu RumRR

Yotes and b eVnitions

q Wdd9Id tsm

N8C6	g, e NepOtdd1 LIj Id9Ot d, Id aoacSde , as beeo taIde2 dOa00OWd9Ot Idet9eteo0e 9tOj 0OecWd1 Ot1aoID0 0Oj pOWd2s pteseodId d, e saj pce"
M8CR	MWtOl ade te0O(etS 9Ot d, Id saj pce Id oOda(aIdabce 2Wd dOsaj pce 2IdWdIdb te) WIde2 9tOj , Id, aoacSde 0Ob0eodadIdb ao2yOt j adIdt Idet9eteo0e"

i Otes ao2 3 Ob(eodIdbsm

l hg	AoacSde l hgh3 ghl
i l	AoacSde i n g l hgh3 ghl adOt abO(e d, e tepOtdd1 dj Id
i N	i OtdNepOtde2
2tS	Maj pce tesWds tepOtde2 Ob a 2tS v eId, dbasId" NesWds dIde2 as 'v ed Ot v Id, OWd'2tS'2esIdoadIdb ate oOd2tS v eId, d0Ote0de2"
Nr l	Necadd e r et0eodl I99eteo0e
P l L	59 P l L Id oOtdIde2f2ada , as beeo e(acWde2 dOd, e P ed, O2 NepOtdd1 LIj IdObcS"
- P M3	- adet P I30IDce MOt(eod3 Ote0dIdb , as beeo appdd2 dO NesWds ao2 P NLs 9Ot (OadIdes sOIdsaj pces pet h r A zCCC3 "
Bad0, q 3	Tocess spe0I9I0acS te) Wesde2f d, Id tepOtd0OodaIds ObcS tesWds 9Ot Bad0, q 3 2etI0e2 9tOj 0dIdodsaj pces Id0cW2e2 Id d, Id tepOtd' Acc aoacSses v ete pet9Otj e2 v Id, d, e apptOptIdade Bad0, q 3 %Id0cW2Id1 Maj pce l WpdIdade sf P adIdt MpDes ao2yOt P adIdt MpDe l WpdIdade swIdt Ot2et dOj eedOt ex0ee2 j ed, O2 ao2 te1 WadOtS te) WIdej eods" AoS ex0epdIdbs dOd, Id v Idc be) Wdd9Id2 Id d, Id tepOtd' 3 Oj pcede Bad0, q 3 tesWds ate a(aIdabce WpOo te) Wesd' 5o 0ases v , ete d, ete Id IdsW9I0Idodsaj pce ptO(I2e2 9Ot Maj pce l WpdIdades ao2yOt P adIdt MpDesf a Lab 3 OodOt Maj pce l WpdIdade %3 Ml WpwId aoacSHe2 dO2ej Obsdade a00Wa0S ao2 pte0IdIdb O9 d, e exda0dIdb ao2 aoacSsId"
Bcao. r OtdIdS	Apex assesses bcao. 2ada 9Ot pOteodIdac, Id, bIdas 2Ov o dOa ce(ece) WacdO½ d, e j ed, O2 tepOtdd1 dj Id%B NLwf ex0epd9Ot 0Ob(eodIdbac 0, ej IdtS ao2 k 3 5l aoacSses v , Id, ate assesse2 ObcS dOd, e P NL" Maj pce tesWds 9a1 1e2 v Id, a B Ot B8C6) WdIdate pOteodIdacS bIdase2 , Id, Id d, eS ate cess d, ao deo dj es d, e ce(ec9OWd2 Id d, e bcao. 9Ot IdOt1aoID aoacSses Ot cess d, ao 9Id e dj es d, e ce(ec9OWd2 Id d, e bcao. 9Ot Ot1aoID aoacSses" QOt a00WadeOj patIdOo O9 (OadIde tesWds dOd, e ce(ec9OWd2 Id d, e bcao. ; v adet saj pce tesWds s, OW2 be 2IdI2e2 bS d, e 2IdWdIdb 9a0dOtf ao2 sOIdsaj pce tesWds s, OW2 be 2IdI2e2 bS RyUC O9 d, e saj pce 2IdWdIdb dOa00OWd9Ot d, e saj pce ptep 9a0dOt" NesWds) Wdd9Id2 as tepOtde2 becOv d, e P NL j aS Id0cW2e a pOteodIdac, Id, bIdas I9 assO0IdIde2 v Id, a B Ot B8C6) Wdd9Id2 bcao. "B ao2 B8C6) WdI900adIdbs ate oOdappdd2 dO J) Wdd9Id2 tesWds tepOtde2 becOv d, e P NL"
8888	q 3 tesWds ate oOdappdd0abce" QOt exaj pcef F Ne0O(etIds 9Ot Bcao. s ao2 l WpdIdade sf F Nr l 9Ot Bcao. sf Bcao. MpDes ao2 P adIdt MpDesf ed0"
***	T se2 dOId2IdIdade a pOssIdbce 2I30tepao0S v Id, d, e Maj pce ao2 Maj pce l WpdIdade tesWds v , eo d, e F Nr l Id oOda(aIdabce" 5o d, Id 0asef eId, et d, e Maj pce Ot d, e Maj pce l WpdIdade , as a tepOtdabce tesWdd9Ot d, Id aoacSdef v , Ide d, e Od, et Id i Ob l ede0d%l w'

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Apex Labs

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler
/ 7/ u M4 l W, aj NOa2
r Ocdao2f n N 4/ 66:

r tOle0dn **PGE-Beaver TanN FarL**
r tOle0di Wj betmuuRP 8R764uC8C:
r tOle0dP aoa1etm3 , tDcS l WOj ao

Reported:
RCyC7yRu RumRR

APEX LABS
12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

See Instructions

Lab # AQD0581 COC 1 of 1

PO#

Company: AMEC FW | Project Mgr: Christy Dustman | Project Name: PGE Beaver Tank | Project # 6611-13294-04
Address: 7376 SW Durham Rd Port OR 97224 | Phone: | Fax: | Email:
Sampled by:
Site Location: OR WA
Other:

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs Hold	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z
1	B2-B1-3ft-09201 6		9-20-16	1440	2011	2		X														
2	B2-B2-3ft-09201 6			1430				X							X							
3	B2-B3-3ft-09201 6			1450				X							X							
4	H-B1-4.5ft-09201 6			1945				X							X							
5																						
6																						
7																						
8																						
9																						
10																						

Normal Turn Around Time (TAT) = 10 Business Days YES NO

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: ____

SPECIAL INSTRUCTIONS:
Samples B2-B1-3ft 09201 6
B2-B2-3ft 09201 6 TAT =
ASAP others are 48 hr

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:
Signature: Date: 9/20/16 Time: 1600
Printed Name: Company: AMEC FW

RECEIVED BY:
Signature: Date: 9/20/16
Printed Name: Melissa Eggers Time: 1645
Company: APEX Labs

RELINQUISHED BY:
Signature: Date: Time:
Printed Name: Company:

RECEIVED BY:
Signature: Date:
Printed Name: Time:
Company:

Apex LabOtadOtDs

Philip Nemberg

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12232 S.W. Garden Place
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503-718-2323 Phone
503-718-0333 Fax

ni esOac7S f to8er , 70d23

Chrystc mi yt6 a.
AMEC Foster Wheeler
D9D3 uW mi rha6 RoaO
Portla. O7S R 4D00,

RE: PGE-Beaver na. / Far6 1332M-29043d-d,

E. f loseO are the resi lts owa. alcses wor k or/ orOer A3IdD2D7k hyf h k as ref eyweO 8c the la8oratorc o. 4103 10d23 at D:9b:ddAMT

nha. / coi wor i sy. g Apex La8sT We apprefyate coi r 8i sy. ess a. Ostrywe to provyOe the hyghest qi alytc servyf es to the e. vyro. 6 e. tal y. Oi strcT

Iwcoi have a. c qi estyo. s f o. f er. y. g thys report or the servyf es k e owwer 7please weel wee to f o. taf t 6 e 8c e6 ayl at: p. ere. 8erg@apex-la8sTf o6 7or 8c pho. e at bd9-D25-0909T

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
D-B-1-7ft-092216	A6I0717-01	Soil	09/22/16 11:10	09/26/16 07:35
D-S-1-5ft-092316	A6I0717-02	Soil	09/23/16 08:30	09/26/16 07:35
D-B-2-6.5ft-092316	A6I0717-03	Soil	09/23/16 13:45	09/26/16 07:35
D-S-2-5ft-092316	A6I0717-04	Soil	09/23/16 14:10	09/26/16 07:35

Apex Laboratories

Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
D-B-1-7ft-092216 (A6I0717-01RE1)			**Matrix: Soil**		**Batch: 6090910**			
Diesel	**8750**	---	558	mg/kg dry	25	09/27/16 10:05	NWTPH-Dx	
Oil	ND	---	1120	"	"	"	"	
Surro(ate) ogTerphenyl LSurr5			*Recovery) %*	*0imits) 1: g- 1: %*	"	"	"	*Sg -*
D-S-1-5ft-092316 (A6I0717-02)			**Matrix: Soil**		**Batch: 6090910**			
Diesel	**547**	---	25.0	mg/kg dry	1	09/27/16 02:35	NWTPH-Dx	F-11
Oil	ND	---	50.0	"	"	"	"	
Surro(ate) ogTerphenyl LSurr5			*Recovery) 46 %*	*0imits) 1: g- 1: %*	"	"	"	
D-B-2-6.5ft-092316 (A6I0717-03)			**Matrix: Soil**		**Batch: 6090910**			
Diesel	ND	---	25.0	mg/kg dry	1	09/27/16 02:55	NWTPH-Dx	
Oil	**59.5**	---	50.0	"	"	"	"	F-17
Surro(ate) ogTerphenyl LSurr5			*Recovery) - : : %*	*0imits) 1: g- 1: %*	"	"	"	
D-S-2-5ft-092316 (A6I0717-04)			**Matrix: Soil**		**Batch: 6090910**			
Diesel	ND	---	25.0	mg/kg dry	1	09/27/16 03:15	NWTPH-Dx	
Oil	ND	---	50.0	"	"	"	"	
Surro(ate) ogTerphenyl LSurr5			*Recovery) 46 %*	*0imits) 1: g- 1: %*	"	"	"	

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
D-B-1-7ft-092216 (A6I0717-01)			**Matrix: Soil**		**Batch: 6091069**			
Acenaphthene	ND	---	4020	ug/kg dry	20	09/29/16 20:31	EPA 8270D (SIM)	R-02
Acenaphthylene	ND	---	1040	"	"	"	"	R-02
Anthracene	ND	---	740	"	"	"	"	R-02
Benz(a)anthracene	ND	---	211	"	"	"	"	
Benzo(a)pyrene	ND	---	211	"	"	"	"	
Benzo(b)fluoranthene	ND	---	211	"	"	"	"	
Benzo(k)fluoranthene	ND	---	211	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	211	"	"	"	"	
Chrysene	ND	---	211	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	211	"	"	"	"	
Dibenzofuran	ND	---	3590	"	"	"	"	R-02
Fluoranthene	**266**	---	211	"	"	"	"	
Fluorene	**8150**	---	211	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	211	"	"	"	"	
1-Methylnaphthalene	**48100**	---	211	"	"	"	"	
2-Methylnaphthalene	**63800**	---	211	"	"	"	"	
Naphthalene	ND	---	529	"	"	"	"	R-02
Phenanthrene	**15700**	---	211	"	"	"	"	
Pyrene	**720**	---	211	"	"	"	"	M-02
Surro(ate) 9g2 luorobiphenyl ISurr5			*Recovery) 69 %*	*0imits) FFg- 9: %*	"	"	"	
pgTerphenylgd- F ISurr5			*6- %*	*0imits) 1Fg- 98 %*	"	"	"	

Apex Laboratories

Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
D-S-1-5ft-092316 (A6I0717-02)			**Matrix: Soil**		**Batch: 6091069**			
Acenaphthene	ND	---	10.6	ug/kg dry	1	09/30/16 10:52	EPA 8270D (SIM)	
Acenaphthylene	ND	---	20.1	"	"	"	"	R-02
Anthracene	ND	---	10.6	"	"	"	"	
Benz(a)anthracene	ND	---	10.6	"	"	"	"	
Benzo(a)pyrene	ND	---	10.6	"	"	"	"	
Benzo(b)fluoranthene	ND	---	10.6	"	"	"	"	
Benzo(k)fluoranthene	ND	---	10.6	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	10.6	"	"	"	"	
Chrysene	ND	---	10.6	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	10.6	"	"	"	"	
Dibenzofuran	ND	---	10.6	"	"	"	"	
Fluoranthene	ND	---	10.6	"	"	"	"	
Fluorene	ND	---	10.6	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	10.6	"	"	"	"	
1-Methylnaphthalene	ND	---	10.6	"	"	"	"	
2-Methylnaphthalene	ND	---	10.6	"	"	"	"	
Naphthalene	ND	---	10.6	"	"	"	"	
Phenanthrene	**14.2**	---	10.6	"	"	"	"	
Pyrene	ND	---	10.6	"	"	"	"	
Surro(ate) 9g2 luorobiphenyl ISurr5			*Recovery) 88 %*	*0imits) FFg- 9: %*	"	"	"	
pgTerphenylgd- F ISurr5			*67 %*	*0imits) 1Fg- 98 %*	"	"	"	

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503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
D-B-2-6.5ft-092316 (A6I0717-03)			**Matrix: Soil**		**Batch: 6091069**			
Acenaphthene	ND	---	11.3	ug/kg dry	1	09/30/16 11:21	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.3	"	"	"	"	
Anthracene	ND	---	11.3	"	"	"	"	
Benz(a)anthracene	ND	---	11.3	"	"	"	"	
Benzo(a)pyrene	ND	---	11.3	"	"	"	"	
Benzo(b)fluoranthene	**22.3**	---	11.3	"	"	"	"	M-02
Benzo(k)fluoranthene	ND	---	11.3	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	11.3	"	"	"	"	
Chrysene	**23.3**	---	11.3	"	"	"	"	M-02
Dibenz(a,h)anthracene	ND	---	11.3	"	"	"	"	
Dibenzofuran	ND	---	11.3	"	"	"	"	
Fluoranthene	**35.0**	---	11.3	"	"	"	"	
Fluorene	ND	---	11.3	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	11.3	"	"	"	"	
1-Methylnaphthalene	**136**	---	11.3	"	"	"	"	
2-Methylnaphthalene	**79.6**	---	11.3	"	"	"	"	
Naphthalene	**463**	---	11.3	"	"	"	"	
Phenanthrene	**16.8**	---	11.3	"	"	"	"	
Pyrene	**24.3**	---	11.3	"	"	"	"	
Surro(ate) 9g2 luorobiphenyl ISurr5			*Recovery) 81 %*	*0imits) FFg- 9: %*	"	"	"	
pgTerphenylgd- F ISurr5			*8D%*	*0imits) 1Fg- 98 %*	"	"	"	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
D-B-1-7ft-092216 (A6I0717-01)			**Matrix: Soil**		**Batch: 6090941**			
% Solids	**84.7**	---	1.00	% by Weight	1	09/27/16 08:52	EPA 8000C	
D-S-1-5ft-092316 (A6I0717-02)			**Matrix: Soil**		**Batch: 6090941**			
% Solids	**90.5**	---	1.00	% by Weight	1	09/27/16 08:52	EPA 8000C	
D-B-2-6.5ft-092316 (A6I0717-03)			**Matrix: Soil**		**Batch: 6090941**			
% Solids	**83.5**	---	1.00	% by Weight	1	09/27/16 08:52	EPA 8000C	
D-S-2-5ft-092316 (A6I0717-04)			**Matrix: Soil**		**Batch: 6090941**			
% Solids	**93.2**	---	1.00	% by Weight	1	09/27/16 08:52	EPA 8000C	

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6090910 - EPA 3546 (Fuels)							**Soil**					
Blank (6090910-BLK1)					Prepared: 09/26/16 07:08		Analyzed: 09/26/16 22:52					
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	"	"	---	---	---	---	---	---	
Surr) ogTerphenyl ISurr5			*Recovery) - : - %*	*0imits) 1: g- 1: %*			*x ilution) - 3*					
LCS (6090910-BS1)					Prepared: 09/26/16 07:08		Analyzed: 09/26/16 23:12					
NWTPH-Dx												
Diesel	110	---	25.0	mg/kg wet	1	125	---	88	76-115%	---	---	
Surr) ogTerphenyl ISurr5			*Recovery) - : F%*	*0imits) 1: g- 1: %*			*x ilution) - 3*					

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6091069 - EPA 3546							**Soil**					
Blank (6091069-BLK1)						Prepared: 09/29/16 07:17	Analyzed: 09/29/16 18:34					
EPA 8270D (SIM)												
Acenaphthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	8.33	"	"	---	---	---	---	---	---	
Anthracene	ND	---	8.33	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	8.33	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	8.33	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	8.33	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	8.33	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	8.33	"	"	---	---	---	---	---	---	
Chrysene	ND	---	8.33	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	8.33	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	---	8.33	"	"	---	---	---	---	---	---	
Fluoranthene	ND	---	8.33	"	"	---	---	---	---	---	---	
Fluorene	ND	---	8.33	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	8.33	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	8.33	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	8.33	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	8.33	"	"	---	---	---	---	---	---	
Phenanthrene	ND	---	8.33	"	"	---	---	---	---	---	---	
Pyrene	ND	---	8.33	"	"	---	---	---	---	---	---	
Surr) 9g2 luorobiphenyl ISurr5			*Recovery) 8- %*	*0imits) FFg- 9: %*			*x ilution) - 3*					
pgTerphenylgd- F ISurr5			*84 %*	*1Fg- 98 %*			*"*					
LCS (6091069-BS1)						Prepared: 09/29/16 07:17	Analyzed: 09/29/16 19:04					
EPA 8270D (SIM)												
Acenaphthene	616	---	10.0	ug/kg wet	1	800	---	77	40-122%	---	---	
Acenaphthylene	611	---	10.0	"	"	"	---	76	32-132%	---	---	
Anthracene	643	---	10.0	"	"	"	---	80	47-123%	---	---	
Benz(a)anthracene	615	---	10.0	"	"	"	---	77	49-126%	---	---	
Benzo(a)pyrene	657	---	10.0	"	"	"	---	82	45-129%	---	---	
Benzo(b)fluoranthene	641	---	10.0	"	"	"	---	80	45-132%	---	---	
Benzo(k)fluoranthene	655	---	10.0	"	"	"	---	82	47-132%	---	---	

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6091069 - EPA 3546							**Soil**					
LCS (6091069-BS1)					Prepared: 09/29/16 07:17		Analyzed: 09/29/16 19:04					
Benzo(g,h,i)perylene	569	---	10.0	"	"	"	---	71	43-134%	---	---	
Chrysene	641	---	10.0	"	"	"	---	80	50-124%	---	---	
Dibenz(a,h)anthracene	636	---	10.0	"	"	"	---	79	45-134%	---	---	
Dibenzofuran	623	---	10.0	"	"	"	---	78	44-120%	---	---	
Fluoranthene	663	---	10.0	"	"	"	---	83	50-127%	---	---	
Fluorene	637	---	10.0	"	"	"	---	80	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	600	---	10.0	"	"	"	---	75	45-133%	---	---	
1-Methylnaphthalene	631	---	10.0	"	"	"	---	79	40-120%	---	---	
2-Methylnaphthalene	608	---	10.0	"	"	"	---	76	38-122%	---	---	
Naphthalene	612	---	10.0	"	"	"	---	77	35-123%	---	---	
Phenanthrene	637	---	10.0	"	"	"	---	80	50-121%	---	---	
Pyrene	668	---	10.0	"	"	"	---	84	47-127%	---	---	

Surr) 9g2luorobiphenyl ISurr5 Recovery) 88 % 0imits) FFg-9: % x ilution) - 3
pgTerphenylgd-F ISurr5 8D% 1Fg-98 % "

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch 6090941 - Total Solids (Dry Weight) **Soil**

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batf h: 3d4d42d							
A6I0717-01RE1	Soil	NWTPH-Dx	09/22/16 11:10	09/26/16 10:00	10.58g/5mL	10g/5mL	0.95
A6I0717-02	Soil	NWTPH-Dx	09/23/16 08:30	09/26/16 10:00	10.38g/5mL	10g/5mL	0.96
A6I0717-03	Soil	NWTPH-Dx	09/23/16 13:45	09/26/16 10:00	10.36g/5mL	10g/5mL	0.97
A6I0717-04	Soil	NWTPH-Dx	09/23/16 14:10	09/26/16 10:00	10.26g/5mL	10g/5mL	0.98

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batf h: 3d42d34							
A6I0717-01	Soil	EPA 8270D (SIM)	09/22/16 11:10	09/29/16 07:17	11.17g/5mL	10g/5mL	0.90
A6I0717-02	Soil	EPA 8270D (SIM)	09/23/16 08:30	09/29/16 07:17	10.42g/5mL	10g/5mL	0.96
A6I0717-03	Soil	EPA 8270D (SIM)	09/23/16 13:45	09/29/16 07:17	10.63g/5mL	10g/5mL	0.94

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batf h: 3d4d4, 2							
A6I0717-01	Soil	EPA 8000C	09/22/16 11:10	09/26/16 14:18	1N/A/1N/A	1N/A/1N/A	NA
A6I0717-02	Soil	EPA 8000C	09/23/16 08:30	09/26/16 14:18	1N/A/1N/A	1N/A/1N/A	NA
A6I0717-03	Soil	EPA 8000C	09/23/16 13:45	09/26/16 14:18	1N/A/1N/A	1N/A/1N/A	NA
A6I0717-04	Soil	EPA 8000C	09/23/16 14:10	09/26/16 14:18	1N/A/1N/A	1N/A/1N/A	NA

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Philip Nerenberg

Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32

Notes and Definitions

Qualifiers:

F-11	The hydrocarbon pattern indicates possible weathered diesel, or a contribution from a related component.
F-17	No fuel pattern detected. The Diesel result represents carbon range C12 to C24, and the Oil result represents >C24 to C40.
M-02	Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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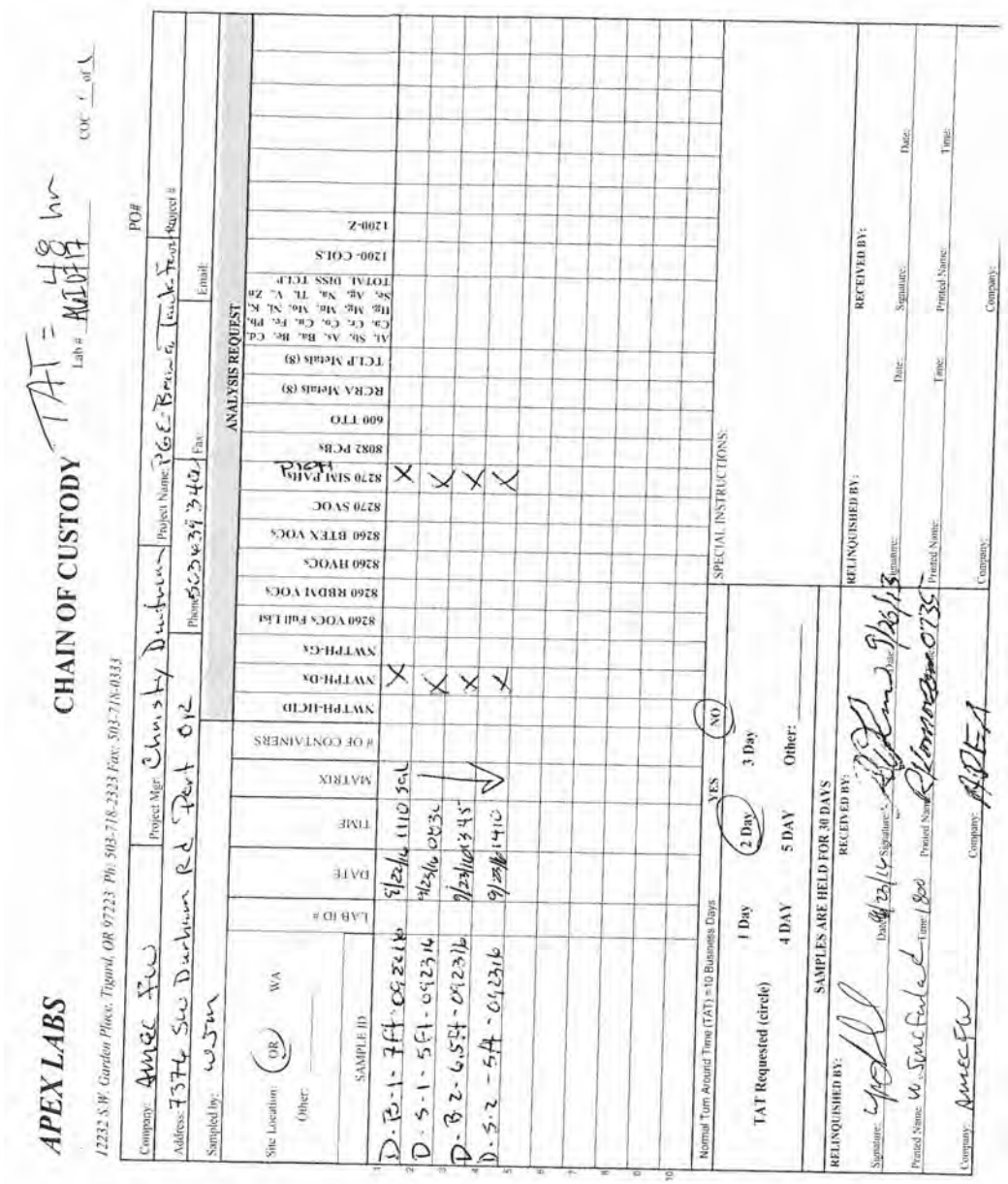
7376 SW Durham Road	Project Number: 661M-132960-04	**Reported:**
Portland, OR 97224	Project Manager: Christy Duitman	10/04/16 17:32



APEX LABS
12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

Lab # AL0817 TAT = 48 hr COC 1 of 1

Company: AMEC FW | Project Mgr: Christy Duitman | Project Name: PGE-Beaver Tank Farm | PO#
Address: 7376 SW Durham Rd Port OR | Phone: 503-639-3942 | Fax: | Email: | Project #
Sampled by: WJM

Site Location: (OR) WA Other:

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDAI VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs PCBs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200-COLS	1200-Z
1	D-B-1-FH-0928-16		9/28/16	1110	Soil			X							X							
2	D-S-1-SH-0928-16		9/28/16	0930				X							X							
3	D-B-2-SH-0928-16		9/28/16	1345				X							X							
4	D-S-2-SH-0928-16		9/28/16	1410				X							X							
5																						
6																						
7																						
8																						
9																						
10																						

Normal Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 4 DAY | 5 DAY | Other: _____

SPECIAL INSTRUCTIONS: YES / NO

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: [illegible] Date: 9/28/16 Time: 1800 Printed Name: W. Scott Finlay Company: AMEC FW

RECEIVED BY: Signature: [illegible] Date: 9/28/16 Time: 0735 Printed Name: [illegible] Company: APEX

RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:

RECEIVED BY: Signature: Date: Time: Printed Name: Company:

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Wednesday, October 5, 2016

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: PGE-Beaver Tank Farm / 661M-132960-04

Enclosed are the results of analyses for work order A6J0032, which was received by the laboratory on 10/3/2016 at 3:10:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	ProMactC **PGE-Beaver Tank Farm**	
9S9: Wy Dmrha3 Road	ProMact Nm3 berC : : 1- I1S70: 4I42	**Reported:**
Portland, OR 09772	ProMact - anagerC y hristu Dmit3 an	14/46/1: 11C74

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
C-B-2-6ft-093016	A: 844S7I41	Woil	40/S4/1: 1SC16	14/4S/1: 16C14
C-B-3-4ft-093016	A: 844S7I47	Woil	40/S4/1: 1SC76	14/4S/1: 16C14
C-S-3-4.5ft-093016	A: 844S7I4S	Woil	40/S4/1: 1SC24	14/4S/1: 16C14
C-S-4-4ft-093016	A: 844S7I42	Woil	40/S4/1: 1SC64	14/4S/1: 16C14

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AMEC Foster Wheeler	ProMctC **PGE-Beaver Tank Farm**	
9S9: Wy Dmrha3 Road	ProMct Nm3 berC : : 1- I1S70: 4I42	**Reported:**
Portland, OR 09772	ProMct - anagerC y hristu Dmit3 an	14/46/1: 11C74

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analute	Resmlt	- DL	Reporting Li3 it	5 nits	Dilmtion	Date AnaluUed	- ethod	Notes
C-B-2-6ft-093016 (A6J0032-01)			**Matrix: Soil**		**Batch: 6100200**			
Diesel	ND	III	76k4	3 g/Hg dru	1	14/46/1: 44C79	Nj z PT IDx	
Oil	ND	III	64k4	.	.	.	.	
Surrogate: o-Terphenyl (Surr)			*Recovery: 100 %*	*Limits: 50-150 %*	.	.	.	
C-B-3-4ft-093016 (A6J0032-02)			**Matrix: Soil**		**Batch: 6100200**			
Diesel	ND	III	76k4	3 g/Hg dru	1	14/46/1: 44C29	Nj z PT IDx	
Oil	ND	III	64k4	.	.	.	.	
Surrogate: o-Terphenyl (Surr)			*Recovery: 96 %*	*Limits: 50-150 %*	.	.	.	
C-S-3-4.5ft-093016 (A6J0032-03)			**Matrix: Soil**		**Batch: 6100200**			
Diesel	ND	III	76k4	3 g/Hg dru	1	14/46/1: 41C4"	Nj z PT IDx	
Oil	ND	III	64k4	.	.	.	.	
Surrogate: o-Terphenyl (Surr)			*Recovery: 96 %*	*Limits: 50-150 %*	.	.	.	
C-S-4-4ft-093016 (A6J0032-04)			**Matrix: Soil**		**Batch: 6100200**			
Diesel	ND	III	76k4	3 g/Hg dru	1	14/46/1: 41C7"	Nj z PT IDx	
Oil	ND	III	64k4	.	.	.	.	
Surrogate: o-Terphenyl (Surr)			*Recovery: 102 %*	*Limits: 50-150 %*	.	.	.	

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AMEC Foster Wheeler	ProMctC **PGE-Beaver Tank Farm**	
9S9: Wy Dmrha3 Road	ProMct Nm3 berC : : 1- I1S70: 4I42	**Reported:**
Portland, OR 09772	ProMct - anagerC y hristu Dmit3 an	14/46/1: 11C74

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analute	Resmlt	- DL	Reporting Li3 it	5 nits	Dilmtion	Date AnaluUed	- ethod	Notes
C-B-2-6ft-093016 (A6J0032-01)			**Matrix: Soil**		**Batch: 6100193**			
% Solids	**79.9**	III	1k44	% bu j eight	1	14/46/1: 40CS4	EPA "444y	
C-B-3-4ft-093016 (A6J0032-02)			**Matrix: Soil**		**Batch: 6100193**			
% Solids	**89.0**	III	1k44	% bu j eight	1	14/46/1: 40CS4	EPA "444y	
C-S-3-4.5ft-093016 (A6J0032-03)			**Matrix: Soil**		**Batch: 6100193**			
% Solids	**91.5**	III	1k44	% bu j eight	1	14/46/1: 40CS4	EPA "444y	
C-S-4-4ft-093016 (A6J0032-04)			**Matrix: Soil**		**Batch: 6100193**			
% Solids	**94.0**	III	1k44	% bu j eight	1	14/46/1: 40CS4	EPA "444y	

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AMEC Foster Wheeler	ProMctC **PGE-Beaver Tank Farm**	
9S9: Wy Dmrha3 Road	ProMct Nm3 berC: : 1- I1S70: 4I42	**Reported:**
Portland, OR 09772	ProMct - anagerC y hristu Dmit3 an	14/46/1: 11C74

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analute	Resmlt	- DL	Reporting Li3 it	5 nits	Dilk	WpiHe A3 omnt	Womrce Resmlt	%REy	%REy Li3 its	RPD	RPD Li3 it	Notes
Batch 6100200 - EPA 3546 (Fuels)							**Soil**					
Blank (6100200-BLK1)					PreparedC14/42/1: 12C7:		AnaluUedC14/42/1: 77C42					
NWTPH-Dx												
Diesel	ND	III	76k4	3 g/Hg wet	1	III	III	III	III	III	III	
Oil	ND	III	64k4	.	.	III	III	III	III	III	III	
Surr: o-Terphenyl (Surr)			*Recovery: 105 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6100200-BS1)					PreparedC14/42/1: 12C7:		AnaluUedC14/42/1: 77C76					
NWTPH-Dx												
Diesel	112	III	76k4	3 g/Hg wet	1	176	III	07	9: I116%	III	III	
Surr: o-Terphenyl (Surr)			*Recovery: 108 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (6100200-DUP1)					PreparedC14/42/1: 12C7:		AnaluUedC14/46/1: 41C2"					
QC Source Sample: C-S-4-4ft-093016 (A6J0032-04)												
NWTPH-Dx												
Diesel	ND	III	76k4	3 g/Hg dru	1	III	ND	III	III	III	S4%	
Oil	ND	III	64k4	.	.	III	ND	III	III	III	S4%	
Surr: o-Terphenyl (Surr)			*Recovery: 100 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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AMEC Foster Wheeler	ProMectC **PGE-Beaver Tank Farm**	
9S9: Wy Dmrha3 Road	ProMect Nm3 berC : : 1- I1S70: 4I42	**Reported:**
Portland, OR 09772	ProMct - anagerC y hristu Dmit3 an	14/46/1: 11C74

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analute	Resmlt	- DL	Reporting Li3 it	5 nits	Dilk	WpiHe A3 omnt	Womrce Resmlt	%REy	%REy Li3 its	RPD	RPD Li3 it	Notes
Batch 6100193 - Total Solids (Dry Weight)							**Soil**					
Duplicate (6100193-DUP1)					PreparedC14/42/1: 1SC22		AnaluUedC14/46/1: 40CS4					
QC Source Sample: C-S-4-4ft-093016 (A6J0032-04)												
EPA 8000C												
% Wolids	**93.9**	III	1k44	% bu j eight	1	III	02k4	III	III	4kl	14%	

No y lient related Batch Qy sa3 ples analuUed for this batchk Wee notes page for 3 ore infor3 ationk

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Philip Nerenberg, Lab Director

Apex Labs

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503-718-0333 Fax

AMEC Foster Wheeler	ProMactC **PGE-Beaver Tank Farm**	
9S9: Wy Dmrha3 Road	ProMact Nm3 berC : : 1- I1S70: 4I42	**Reported:**
Portland, OR 09772	ProMact - anagerC y hristu Dmit3 an	14/46/1: 11C74

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Nm3 ber	- atrix	- ethod	Wa3 pled	Prepared	Wa3 ple vnitial/Final	Defamlt vnitial/Final	RL Prep Factor
Batch: 6100200							
A: 844S7I41	Woil	Nj z PT IDx	40/S4/1: 1SC16	14/42/1: 12C7:	14k7Sg/63 L	14g/63 L	4k0"
A: 844S7I47	Woil	Nj z PT IDx	40/S4/1: 1SC76	14/42/1: 12C7:	14kS: g/63 L	14g/63 L	4k09
A: 844S7I4S	Woil	Nj z PT IDx	40/S4/1: 1SC24	14/42/1: 12C7:	14k2: g/63 L	14g/63 L	4k0:
A: 844S7I42	Woil	Nj z PT IDx	40/S4/1: 1SC64	14/42/1: 12C7:	14k76g/63 L	14g/63 L	4k0"

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Nm3 ber	- atrix	- ethod	Wa3 pled	Prepared	Wa3 ple vnitial/Final	Defamlt vnitial/Final	RL Prep Factor
Batch: 6100193							
A: 844S7I41	Woil	EPA "444y	40/S4/1: 1SC16	14/42/1: 1SC2:	1N/A/1N/A	1N/A/1N/A	NA
A: 844S7I47	Woil	EPA "444y	40/S4/1: 1SC76	14/42/1: 1SC2:	1N/A/1N/A	1N/A/1N/A	NA
A: 844S7I4S	Woil	EPA "444y	40/S4/1: 1SC24	14/42/1: 1SC2:	1N/A/1N/A	1N/A/1N/A	NA
A: 844S7I42	Woil	EPA "444y	40/S4/1: 1SC64	14/42/1: 1SC2:	1N/A/1N/A	1N/A/1N/A	NA

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AMEC Foster Wheeler	ProMctC **PGE-Beaver Tank Farm**	
9S9: Wy Dmrha3 Road	ProMct Nm3 berC : : 1- I1S70: 4I42	**Reported:**
Portland, OR 09772	ProMct - anagerC y hristu Dmit3 an	14/46/1: 11C74

Notes and Definitions

QmalifiersC

Notes and y onqentionsC

DEz	Analute DEz Ey z ED
ND	Analute NOz DEz Ey z ED at or aboqe the reporting li3 it
NR	Not Reported
dru	Wa3 ple resmlts reported on a dru weight basisk Resmlts listed as ¼wet½or withomt ¼dru½designation are not dru weight correctedk
RPD	Relatiqe Percent Difference
- DL	vf - DL is not listed, data has been eqalmated to the - ethod Reporting Li3 it onluk
j - Wy	j ater - iscible Wolqent y orrection has been applied to Resmlts and - RLs for qolatiles soil sa3 ples per EPA "444y k
Batch Qy	5 nless specificallu re(mested, this report contains onlu resmlts for Batch Qy deriqed fro3 client sa3 ples inclmded in this reportk All analuses were perfor3 ed with the appropriate Batch Qy)inclmding Wa3 ple Dmplicates, - atrix WpiHes and/or - atrix WpiHe Dmplicates' in order to 3 eet or exceed 3 ethod and regmlatoru re(mire3 entskAnu exceptions to this will be (malified in this reportky o3 plete Batch Qy resmlts are aqailable mpon re(mestk vn cases where there is insmfficient sa3 ple proqided for Wa3 ple Dmplicates and/or - atrix WpiHes, a Lab y ontrol Wa3 ple Dmplicate)Ly WDmp' is analuUed to de3 onstrate accmracu and precision of the extraction and analusisk
BlanH Policu	Apex assesses blanHdata for potential high bias down to a leqel e(mal to ; the 3 ethod reporting li3 it)- RL', except for conqentional che3 istru and T y vD analuses which are assessed onlu to the - RLkWa3 ple resmlts flagged with a B or BI47 (malifier are potentiallu biased high if theu are less than ten ti3 es the leqel fomnd in the blanHfor inorganic analuses or less than fiqe ti3 es the leqel fomnd in the blanHfor organic analusesk
	For accmrate co3 parison of qolatile resmlts to the leqel fomnd in the blanHJ water sa3 ple resmlts shomld be diqided bu the dilmtion factor, and soil sa3 ple resmlts shomld be diqided bu 1/64 of the sa3 ple dilmtion to accomnt for the sa3 ple prep factork
	Resmlts (malified as reported below the - RL 3 au inclmde a potential high bias if associated with a B or BI47 (malified blanHkB and BI47 (malifications are not applied to 8 (malified resmlts reported below the - RLk
III	Qy resmlts are not applicablekFor exa3 ple, % Recoqeries for BlanHs and Dmplicates, % RPD for BlanHs, BlanH WpiHes and - atrix WpiHes, etck
***	5 sed to indicate a possible discrepancu with the Wa3 ple and Wa3 ple Dmplicate resmlts when the %RPD is not aqailablek vn this case, either the Wa3 ple or the Wa3 ple Dmplicate has a reportable resmlt for this analute, while the other is Non Detect)ND' k

Apex Laboratories

Philip Nerenberg, Lab Director

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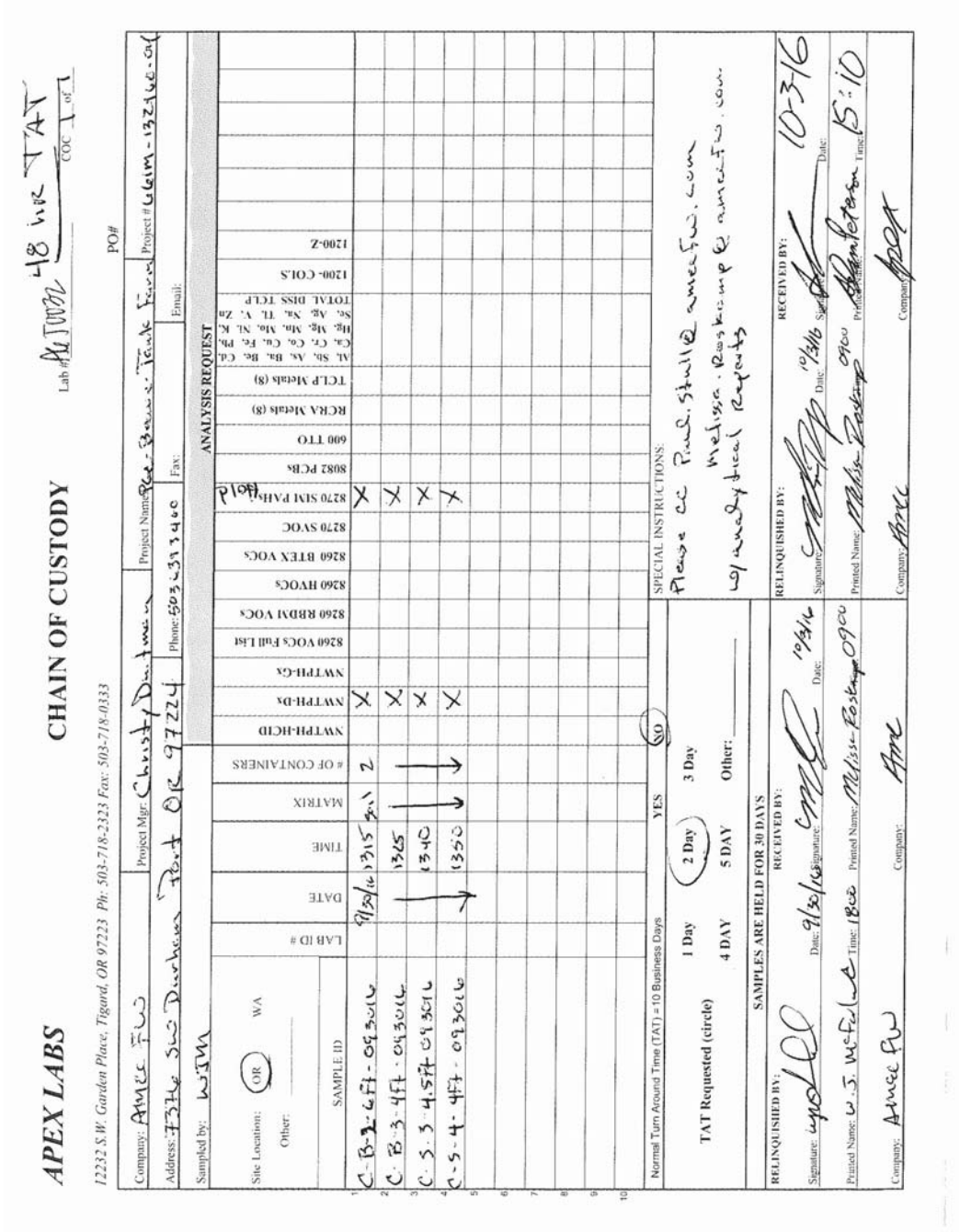
Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Pro Act C **PGE-Beaver Tank Farm**	
9S9: Wy Dmrha3 Road	Pro Act Nn3 berC : : 1- I1S70: 4I42	**Reported:**
Portland, OR 09772	Pro Act - anagerC y hristu Dmit3 an	14/46/1: 11C74



APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

Lab # 48 hr TAT COC 1 of 1

PO#

Company: AMEC FW | Project Mgr: Christy Dittman | Project Name: PGE - Beaver Tank Farm | Project # 6GIM-13246-04

Address: 7376 SW Durham Road Port OR 97224 | Phone: 503-639-3400 | Fax: | Email:

Sampled by: WJM

Site Location: OR WA Other: _____

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn	TOTAL DISS TCLP	1200- COLS	1200-Z
1	C-B2-6ft-09306		9/30/16	1315	Soil	2		X							X								
2	C-B3-4ft-09306			1325				X							X								
3	C-S3-4.5ft-09306			1340				X							X								
4	C-S4-4ft-09306			1350				X							X								
5																							
6																							
7																							
8																							
9																							
10																							

ANALYSIS REQUEST

Normal Turn Around Time (TAT) = 10 Business Days YES (NO)

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: _____

SPECIAL INSTRUCTIONS: Please cc Rich.Stull@amecfw.com Melissa.Rostamp@amecfw.com w/ weekly Email Reports

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: [illegible] Date: 9/30/16 | RECEIVED BY: Signature: [illegible] Date: 9/30/16

RELINQUISHED BY: Signature: [illegible] Date: 10/3/16 | RECEIVED BY: Signature: [illegible] Date: 10-3-16

Printed Name: W.J. Wetzel Time: 1800 | Printed Name: Melissa Rostamp Time: 0900 | Printed Name: Melissa Peterson Time: 15:10

Company: AMEC FW | Company: AMEC | Company: AMEC

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Wednesday, October 26, 2016

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: PGE-Beaver Tank Farm / 661M-132960

Enclosed are the results of analyses for work order A6J0828, which was received by the laboratory on 10/24/2016 at 2:20:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wj Dmrha3 Road	Project Nn3 ber: 661- I1S7064	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dnit3 an	14/76/16 16:7C

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
D-S-5-7ft-West-102416	A684575I41	Woil	14/72/16 14:4C	14/72/16 12:74
D-S-6-7ft-NW-102416	A684575I47	Woil	14/72/16 14:1C	14/72/16 12:74
D-S-7-6.5ft-NE-102416	A684575I4S	Woil	14/72/16 14:7C	14/72/16 12:74
D-S-8-6.5ft-East-102416	A684575I42	Woil	14/72/16 14:24	14/72/16 12:74

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wj Dmrha3 Road	Project Nn3 ber: 661- I1S7064	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	14/76/16 16:7C

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analute	Resnlt	- DL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	- ethod	Notes
D-S-5-7ft-West-102416 (A6J0828-01)			**Matrix: Soil**		**Batch: 6100898**			
Diesel	ND	III	7C.4	3 g/kg dru	1	14/72/16 74:S6	Nj TPHIDx	
Oil	ND	III	C4.4	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	
D-S-6-7ft-NW-102416 (A6J0828-02)			**Matrix: Soil**		**Batch: 6100898**			
Diesel	ND	III	7C.4	3 g/kg dru	1	14/72/16 74:C6	Nj TPHIDx	
Oil	ND	III	C4.4	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 99 %*	*Limits: 50-150 %*	"	"	"	
D-S-7-6.5ft-NE-102416 (A6J0828-03)			**Matrix: Soil**		**Batch: 6100898**			
Diesel	ND	III	7C.4	3 g/kg dru	1	14/72/16 71:16	Nj TPHIDx	
Oil	ND	III	C4.4	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 104 %*	*Limits: 50-150 %*	"	"	"	
D-S-8-6.5ft-East-102416 (A6J0828-04)			**Matrix: Soil**		**Batch: 6100898**			
Diesel	**39.8**	III	7C.4	3 g/kg dru	1	14/72/16 71:S6	Nj TPHIDx	EI11
Oil	ND	III	C4.4	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 105 %*	*Limits: 50-150 %*	"	"	"	

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wj Dmrha3 Road	Project Nn3 ber: 661- I1S7064	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	14/76/16 16:7C

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analute	Resnlt	- DL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	- ethod	Notes
D-S-5-7ft-West-102416 (A6J0828-01)			**Matrix: Soil**		**Batch: 6100912**			
% Solids	**81.6**	III	1.44	w bu j eight	1	14/7C/16 40:70	%PA 5444y	
D-S-6-7ft-NW-102416 (A6J0828-02)			**Matrix: Soil**		**Batch: 6100912**			
% Solids	**88.0**	III	1.44	w bu j eight	1	14/7C/16 40:70	%PA 5444y	
D-S-7-6.5ft-NE-102416 (A6J0828-03)			**Matrix: Soil**		**Batch: 6100912**			
% Solids	**85.9**	III	1.44	w bu j eight	1	14/7C/16 40:70	%PA 5444y	
D-S-8-6.5ft-East-102416 (A6J0828-04)			**Matrix: Soil**		**Batch: 6100912**			
% Solids	**81.5**	III	1.44	w bu j eight	1	14/7C/16 40:70	%PA 5444y	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wy Dmrha3 Road	Project Nn3 ber: 661- I1S7064	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	14/76/16 16:7C

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dil.	Wpike A3 omnt	Womrce Resmlt	wR%y	wR%y Li3 its	RPD	RPD Li3 it	Notes
Batch 6100898 - EPA 3546 (Fuels)							**Soil**					
Blank (6100898-BLK1)					Prepared: 14/72/16 14:S2		Analuzed: 14/72/16 17:25					
NWTPH-Dx												
Diesel	ND	III	7C.4	3 g/kg Bet	1	III	III	III	III	III	III	
Oil	ND	III	C4.4	"	"	III	III	III	III	III	III	
- ineral Oil	ND	III	S4.5	"	"	III	III	III	III	III	III	
Surr: o-Terphenyl (Surr)			*Recovery: 87 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6100898-BS1)					Prepared: 14/72/16 14:S2		Analuzed: 14/72/16 1S:40					
NWTPH-Dx												
Diesel	17S	III	7C.4	3 g/kg Bet	1	17C	III	05	96I11Cw	III	III	
Surr: o-Terphenyl (Surr)			*Recovery: 100 %*	*Limits: 50-150 %*			*Dilution: 1x*					

Apex Laboratories

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wy Dmrha3 Road	Project Nn3 ber: 661- I1S7064	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dnit3 an	14/76/16 16:7C

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analute	Resnlt	- DL	Reporting Li3 it	Units	Dil.	Wpike A3 omnt	Womrce Resnlt	wR%y	wR%y Li3 its	RPD	RPD Li3 it	Notes
Batch 6100912 - Total Solids (Dry Weight)							**Soil**					
No y lient related Qatch F y sa3 ples analuzed for this batch. Wee notes page for 3 ore infor3 ation.												

Apex Laboratories

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wj Dmrha3 Road	Project Nm3 ber: 661- I1S7064	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	14/76/16 16:7C

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Nm3 ber	- atrix	- ethod	Wa3 pled	Prepared	Wa3 ple vnitial/Einal	Defamlt vnitial/Einal	RL Prep Eactor
Batch: 6100898							
A684575I41	Woil	Nj TPHIDx	14/72/16 14:4C	14/72/16 16:S1	14.52g/C3 L	14g/C3 L	4.07
A684575I47	Woil	Nj TPHIDx	14/72/16 14:1C	14/72/16 16:S1	14.90g/C3 L	14g/C3 L	4.0S
A684575I4S	Woil	Nj TPHIDx	14/72/16 14:7C	14/72/16 16:S1	14.2Cg/C3 L	14g/C3 L	4.06
A684575I42	Woil	Nj TPHIDx	14/72/16 14:24	14/72/16 16:S1	14.Cg/C3 L	14g/C3 L	4.0C

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Nm3 ber	- atrix	- ethod	Wa3 pled	Prepared	Wa3 ple vnitial/Einal	Defamlt vnitial/Einal	RL Prep Eactor
Batch: 6100912							
A684575I41	Woil	%PA 5444y	14/72/16 14:4C	14/72/16 19:S6	1N/A/1N/A	1N/A/1N/A	NA
A684575I47	Woil	%PA 5444y	14/72/16 14:1C	14/72/16 19:S6	1N/A/1N/A	1N/A/1N/A	NA
A684575I4S	Woil	%PA 5444y	14/72/16 14:7C	14/72/16 19:S6	1N/A/1N/A	1N/A/1N/A	NA
A684575I42	Woil	%PA 5444y	14/72/16 14:24	14/72/16 19:S6	1N/A/1N/A	1N/A/1N/A	NA

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9S96 Wy Dmrha3 Road	Project Nn3 ber: 661- I1S7064	**Reported:**
Portland, OR 09772	Project - anager: y hristu Dmit3 an	14/76/16 16:7C

Notes and Definitions

F malifiers:

EI11	The hudrocarbon pattern indicates possible Beathered diesel, or a contribmtion fro3 a related co3 ponent.

Notes and y onqentions:

D%T	Analute D%T%y T%D
ND	Analute NOT D%T%y T%D at or aboqe the reporting li3 it
NR	Not Reported
dru	Wa3 ple resmlts reported on a dru Beight basis. Resmlts listed as "Bet½or Bithomt "dru"designation are not dru Beight corrected.
RPD	Relatiqe Percent Difference
- DL	vf - DL is not listed, data has been eqalmated to the - ethod Reporting Li3 it onlu.
j - Wy	j ater - iscible Wolqent y orrection has been applied to Resmlts and - RLs for qolatiles soil sa3 ples per %PA 5444y .
Qatch F y	Unless specificallu re(mested, this report contains onlu resmlts for Qatch F y deriqed fro3 client sa3 ples inclmded in this report. All analuses Bere perfor3 ed Bith the appropriate Qatch F y)inclmding Wa3 ple Dmplicates, - atrix Wpikes and/or - atrix Wpike Dmplicates' in order to 3 eet or exceed 3 ethod and regmlatoru re(mire3 ents. Anu exceptions to this Bill be (malified in this report. y o3 plete Qatch F y resmlts are aqailable mpon re(mest. vn cases Bhere there is insmfficient sa3 ple proqided for Wa3 ple Dmplicates and/or - atrix Wpikes, a Lab y ontrol Wa3 ple Dmplicate)Ly WDmp' is analuzed to de3 onstrate accmracu and precision of the extraction and analusis.
Qlank Policu	Apex assesses blank data for potential high bias doBn to a leqel e(mal to ; the 3 ethod reporting li3 it)- RL', except for conqentional che3 istru and Hy vD analuses Bhich are assessed onlu to the - RL. Wa3 ple resmlts flagged Bith a Q or QI47 (malifier are potentiallu biased high if theu are less than ten ti3 es the leqel fomnd in the blank for inorganic analuses or less than fiqe ti3 es the leqel fomnd in the blank for organic analuses. Eor accmrate co3 parison of qolatile resmlts to the leqel fomnd in the blankJ Bater sa3 ple resmlts shomld be diqided bu the dilmtion factor, and soil sa3 ple resmlts shomld be diqided bu 1/C4 of the sa3 ple dilmtion to accomnt for the sa3 ple prep factor. Resmlts (malified as reported beloB the - RL 3 au inclmde a potential high bias if associated Bith a Q or QI47 (malified blank. Q and QI47 (malifications are not applied to 8 (malified resmlts reported beloB the - RL.
III	F y resmlts are not applicable. Eor exa3 ple, w Recoqeries for Qlanks and Dmplicates, w RPD for Qlanks, Qlank Wpikes and - atrix Wpikes, etc.
***	Used to indicate a possible discrepancu Bith the Wa3 ple and Wa3 ple Dmplicate resmlts Bhen the w RPD is not aqailable. vn this case, either the Wa3 ple or the Wa3 ple Dmplicate has a reportable resmlt for this analute, Bhile the other is Non Detect)ND'.

Apex Laboratories

Philip Nerenberg, Lab Director

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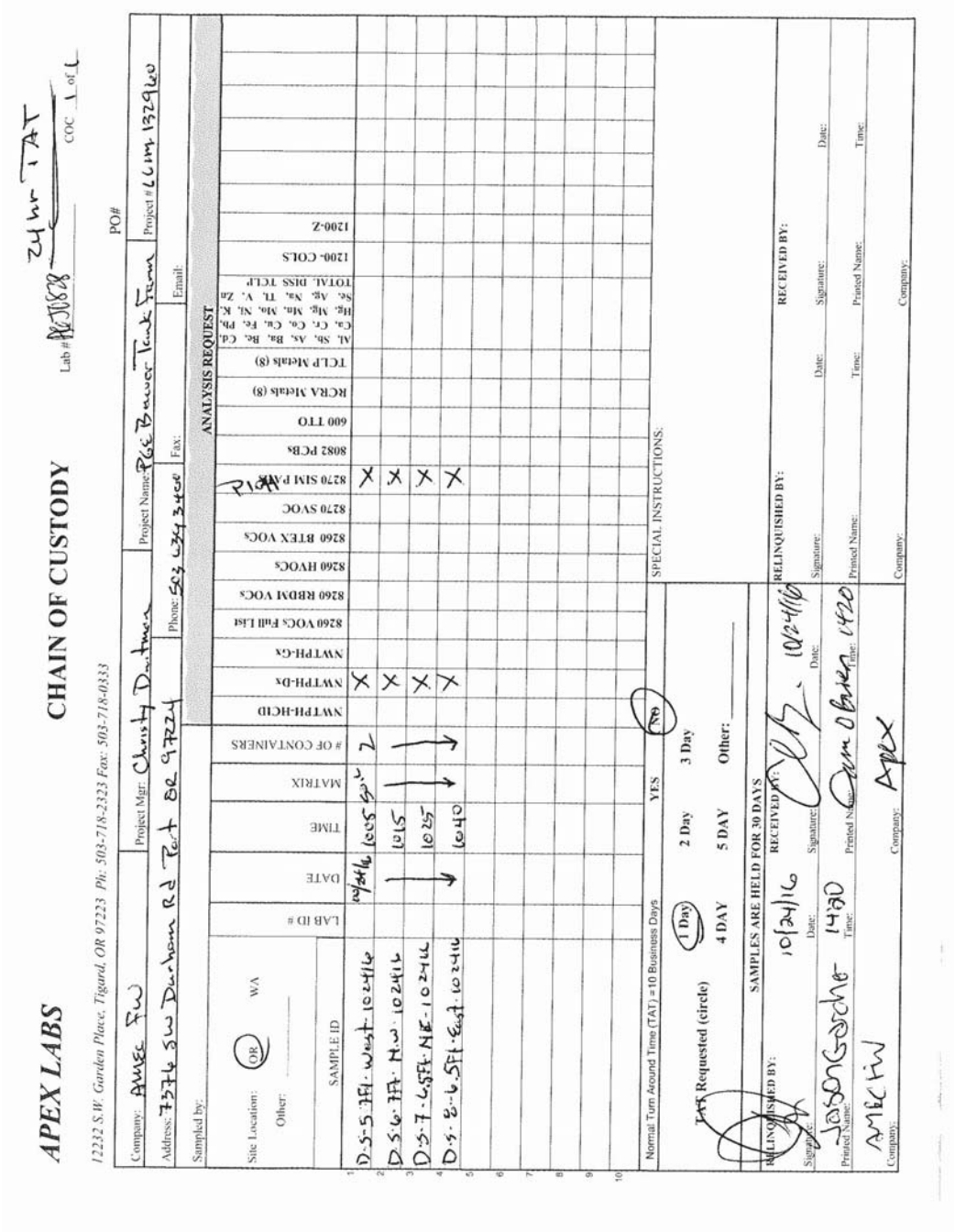
AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
9396 Wyndham Road	Project Number: 661-11S7064	**Reported:**
Portland, OR 09772	Project Manager: Christy Dittman	14/26/16 16:7C



APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

Lab # 1610828 24 hr TAT COC 1 of 1

PO#

Company: AMEC FW
Project Mgr: Christy Dittman
Project Name: PGE Beaver Tank Farm
Project # 661m 1329160
Address: 7376 SW Durham Rd Tigard OR 97224
Phone: 503 639 3400
Fax:
Email:
Sampled by:
Site Location: OR WA
Other:

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z
1	D-5-5-West-102416		10/24/16	1005	Soil	2		X							X							
2	D-6-N-102416			1015				X							X							
3	D-7-NE-102416			1025				X							X							
4	D-8-East-102416			1040				X							X							
5																						
6																						
7																						
8																						
9																						
10																						

Normal Turn Around Time (TAT) = 10 Business Days YES NO

SPECIAL INSTRUCTIONS:

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: _____

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Date: 10/24/16 Time: 1430 Printed Name: Jason Gerchler Company: AMEC

RECEIVED BY: Signature: Date: 10/24/16 Time: 1420 Printed Name: Jim O'Brien Company: Apex

RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:

RECEIVED BY: Signature: Date: Time: Printed Name: Company:

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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Thursday, October 27, 2016

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: PGE-Beaver Tank Farm / 661M-13296-04

Enclosed are the results of analyses for work order A6J0421, which was received by the laboratory on 10/13/2016 at 11:30:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	ProjectC **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nn3 berC 661M-1: 296-40	**Reported:**
Portland, OR 97220	Project ManagerC y hristu Dnit3 an	14/27/16 1: C 0

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B2-S-2-5FT-East-101216	A6I4021-41	Soil	14/12/16 48C54	14/1: /16 11C 4
B2-S-3-5FT-Sof th-101216	A6I4021-42	Soil	14/12/16 49C45	14/1: /16 11C 4
B2-S-4-5FT-West-101216	A6I4021-4:	Soil	14/12/16 49C15	14/1: /16 11C 4

Apex Laboratories

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AMEC Foster Wheeler	ProjectC **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nm3 berC 661M-1: 296-40	**Reported:**
Portland, OR 97220	Project ManagerC y hristu Dmit3 an	14/27/16 1: C 0

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analute	Resmlt	MDL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	Method	Notes
B2-S-2-5FT-East-101216 (A6J0421-01)			**Matrix: Soil**		**Batch: 6100596**			
Diesel	**76.6**	---	25"4	3 g/. g dru	1	14/15/16 42C 8	NWHPk -Dx	T-11
Oil	ND	---	54"4	E	E	E	E	
Surrogate: o-Terphenyl (Surr)			*Recovery: 44 %*	*Limits: 50-150 %*	E	E	E	
B2-S-3-5FT-South-101216 (A6J0421-02RE1)			**Matrix: Soil**		**Batch: 6100596**			
Diesel	**5300**	---	2: 7	3 g/. g dru	14	14/17/16 11C 9	NWHPk -Dx	
Oil	ND	---	070	E	E	E	E	
Surrogate: o-Terphenyl (Surr)			*Recovery: 169 %*	*Limits: 50-150 %*	E	E	E	*S-05*
B2-S-4-5FT-West-101216 (A6J0421-03)			**Matrix: Soil**		**Batch: 6100596**			
Diesel	ND	---	25"4	3 g/. g dru	1	14/10/16 22C 7	NWHPk -Dx	
Oil	ND	---	54"4	E	E	E	E	
Surrogate: o-Terphenyl (Surr)			*Recovery: 29 %*	*Limits: 50-150 %*	E	E	E	

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nm3 ber: C661M-1: 296-40	**Reported:**
Portland, OR 97220	Project Manager: Cyhristu Dmit3 an	14/27/16 1: C0

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analute	Resmlt	MDL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	Method	Notes
B2-S-2-5FT-East-101216 (A6J0421-01)			**Matrix: Soil**		**Batch: 6100745**			
Acenaphthene	ND	---	9'99	mg/. g dru	1	14/24/16 10:26	%PA 8274D vsBMQ	
Acenaphthulene	ND	---	9'99	E	E	E	E	
Anthracene	ND	---	9'99	E	E	E	E	
Fenzwa,Qanthracene	ND	---	9'99	E	E	E	E	
Fenzowa,Qpurene	ND	---	9'99	E	E	E	E	
Fenzowb,Qlmoranthene	ND	---	9'99	E	E	E	E	
Fenzow,Qlmoranthene	ND	---	9'99	E	E	E	E	
Fenzowg,h,iQperulene	ND	---	9'99	E	E	E	E	
yhrusene	ND	---	9'99	E	E	E	E	
Dibenzwa,hQanthracene	ND	---	9'99	E	E	E	E	
Dibenzofmran	ND	---	9'99	E	E	E	E	
Tlmoranthene	ND	---	9'99	E	E	E	E	
Tlmorene	ND	---	9'99	E	E	E	E	
Bndenow1,2,: -cdQpurene	ND	---	9'99	E	E	E	E	
1-Methulnaphthalene	ND	---	9'99	E	E	E	E	
2-Methulnaphthalene	ND	---	9'99	E	E	E	E	
Naphthalene	ND	---	9'99	E	E	E	E	
Phenanthrene	ND	---	9'99	E	E	E	E	
Purene	ND	---	9'99	E	E	E	E	
Surrogate: 6-Fluorobiphenyl (Surr)			*Recovery: 45 %*	*Limits: 88-160 %*	E	E	E	
p-Terphenyl-d18 (Surr)			*44 %*	*Limits: 58-167 %*	E	E	E	

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AMEC Foster Wheeler	ProjectC **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nm3 berC 661M-1: 296-40	**Reported:**
Portland, OR 97220	Project ManagerC y hristu Dmit3 an	14/27/16 1: C0

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analute	Resmlt	MDL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	Method	Notes
B2-S-3-5FT-South-101216 (A6J0421-02)			**Matrix: Soil**		**Batch: 6100745**			
Acenaphthene	ND	---	974	mg/. g dru	5	14/24/16 15C19	%PA 8274D vSBMQ	R-42
Acenaphthulene	ND	---	: 54	E	E	E	E	R-42
Anthracene	ND	---	118	E	E	E	E	R-42
F enzwa Q anthracene	ND	---	5: "9	E	E	E	E	
F enzowa Q urene	ND	---	5: "9	E	E	E	E	
F enzowb Q lmoranthene	ND	---	5: "9	E	E	E	E	
F enzow Q lmoranthene	ND	---	5: "9	E	E	E	E	
F enzowg,h,i Q erulene	ND	---	5: "9	E	E	E	E	
y hrusene	ND	---	5: "9	E	E	E	E	
Dibenzwa,h Q anthracene	ND	---	5: "9	E	E	E	E	
Dibenzofmran	ND	---	862	E	E	E	E	R-42
Flf oranthene	**65.6**	---	5: "9	E	E	E	E	
Flf orene	**2150**	---	5: "9	E	E	E	E	
Bndenow1,2,: -cd Q urene	ND	---	5: "9	E	E	E	E	
1-Methylnaphthalene	**6390**	---	5: "9	E	E	E	E	
2-Methulnaphthalene	ND	---	59"2	E	E	E	E	R-42
Naphthalene	ND	---	120	E	E	E	E	R-42
Phenanthrene	**2930**	---	5: "9	E	E	E	E	
Pyrene	**69.0**	---	5: "9	E	E	E	E	M-42
Surrogate: 6-Fluorobiphenyl (Surr)			*Recovery: 101 %*	*Limits: 88-160 %*	E	E	E	
p-Terphenyl-d18 (Surr)			*101 %*	*Limits: 58-167 %*	E	E	E	

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AMEC Foster Wheeler	ProjectC **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nm3 berC 661M-1: 296-40	**Reported:**
Portland, OR 97220	Project ManagerC y hristu Dmit3 an	14/27/16 1: C 0

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analute	Resmlt	MDL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	Method	Notes
B2-S-2-5FT-East-101216 (A6J0421-01)			**Matrix: Soil**		**Batch: 6100607**			
% Solids	**84.3**	---	1"44	v bu Weight	1	14/17/16 49C49	%PA 8444y	
B2-S-3-5FT-South-101216 (A6J0421-02)			**Matrix: Soil**		**Batch: 6100607**			
% Solids	**82.0**	---	1"44	v bu Weight	1	14/17/16 49C49	%PA 8444y	
B2-S-4-5FT-West-101216 (A6J0421-03)			**Matrix: Soil**		**Batch: 6100607**			
% Solids	**77.5**	---	1"44	v bu Weight	1	14/17/16 49C49	%PA 8444y	

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AMEC Foster Wheeler	ProjectC **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nm3 berC 661M-1: 296-40	**Reported:**
Portland, OR 97220	Project ManagerC y hristu Dmit3 an	14/27/16 1: C 0

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analute	Resmlt	MDL	Reporting Li3 it	Units	Dil"	Spi. e A3 omnt	Somrce Resmlt	v R%y	v R%y Li3 its	RPD	RPD Li3 it	Notes
Batch 6100596 - EPA 3546 (Fuels)							**Soil**					
Blank (6100596-BLK1)					Prepared C14/10/16 14C19		Analuzed C14/10/16 24C07					
NWTPH-Dx												
Diesel	ND	---	25"4	3 g/. g q et	1	---	---	---	---	---	---	
Oil	ND	---	54"4	E	E	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 46 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6100596-BS1)					Prepared C14/10/16 14C19		Analuzed C14/10/16 21C48					
NWTPH-Dx												
Diesel	117	---	25"4	3 g/. g q et	1	125	---	9:	76-115v	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 47 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Df plicate (6100596-DUP2)					Prepared C14/10/16 14C19		Analuzed C14/10/16 22C59					
QC Sof rce Sample: B2-S-4-5FT-West-101216 (A6u0421-03)												
NWTPH-Dx												
Diesel	ND	---	25"4	3 g/. g dru	1	---	ND	---	---	---	: 4v	
Oil	ND	---	54"4	E	E	---	ND	---	---	---	: 4v	
Surr: o-Terphenyl (Surr)			*Recovery: 43 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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AMEC Foster Wheeler	ProjectC **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nm3 berC 661M-1: 296-40	**Reported:**
Portland, OR 97220	Project ManagerC y hristu Dmit3 an	14/27/16 1: C0

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analute	Resmlt	MDL	Reporting Li3 it	Units	Dil"	Spi. e A3 omnt	Somrce Resmlt	v R%y	v R%y Li3 its	RPD	RPD Li3 it	Notes
Batch 6100745 - EPA 3546							**Soil**					
Blank (6100745-BLK1)					PreparedC14/19/16 11C16		AnaluzedC14/24/16 1: C0					
EPA 8270D (SIM)												
Acenaphthene	ND	---	8": :	mg/. g q et	1	---	---	---	---	---	---	
Acenaphthulene	ND	---	8": :	E	E	---	---	---	---	---	---	
Anthracene	ND	---	8": :	E	E	---	---	---	---	---	---	
Fenzwa,Q anthracene	ND	---	8": :	E	E	---	---	---	---	---	---	
Fenzowa,Q purene	ND	---	8": :	E	E	---	---	---	---	---	---	
Fenzowb,Q lmoranthene	ND	---	8": :	E	E	---	---	---	---	---	---	
Fenzow Q lmoranthene	ND	---	8": :	E	E	---	---	---	---	---	---	
Fenzog,h,iQ perulene	ND	---	8": :	E	E	---	---	---	---	---	---	
y hrusene	ND	---	8": :	E	E	---	---	---	---	---	---	
Dibenzwa,hQ anthracene	ND	---	8": :	E	E	---	---	---	---	---	---	
Dibenzofmran	ND	---	8": :	E	E	---	---	---	---	---	---	
Tlmoranthene	ND	---	8": :	E	E	---	---	---	---	---	---	
Tlmorene	ND	---	8": :	E	E	---	---	---	---	---	---	
Bndenow1,2,: -cdQ purene	ND	---	8": :	E	E	---	---	---	---	---	---	
1-Methulnaphthalene	ND	---	8": :	E	E	---	---	---	---	---	---	
2-Methulnaphthalene	ND	---	8": :	E	E	---	---	---	---	---	---	
Naphthalene	ND	---	8": :	E	E	---	---	---	---	---	---	
Phenanthrene	ND	---	8": :	E	E	---	---	---	---	---	---	
Purene	ND	---	8": :	E	E	---	---	---	---	---	---	

Surr: 6-Fluorobiphenyl (Surr) *Recovery: 42 %* *Limits: 88-160 %* *Dilution: 1x*
p-Terphenyl-d18 (Surr) *20 %* *58-167 %* *"*

LCS (6100745-BS1)					PreparedC14/19/16 11C16		AnaluzedC14/24/16 10C44					
EPA 8270D (SIM)												
Acenaphthene	787	---	14"4	mg/. g q et	1	844	---	98	04-122v	---	---	
Acenaphthulene	750	---	14"4	E	E	E	---	90	: 2-1: 2v	---	---	
Anthracene	766	---	14"4	E	E	E	---	96	07-12: v	---	---	
Fenzwa,Q anthracene	699	---	14"4	E	E	E	---	87	09-126v	---	---	
Fenzowa,Q purene	771	---	14"4	E	E	E	---	96	05-129v	---	---	
Fenzowb,Q lmoranthene	70:	---	14"4	E	E	E	---	9:	05-1: 2v	---	---	
Fenzow Q lmoranthene	761	---	14"4	E	E	E	---	95	07-1: 2v	---	---	

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Philip Nerenberg, Lab Director

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	ProjectC **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nm3 berC 661M-1: 296-40	**Reported:**
Portland, OR 97220	Project ManagerC y hristu Dmit3 an	14/27/16 1: C0

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analute	Resmlt	MDL	Reporting Li3 it	Units	Dil"	Spi. e A3 omnt	Somrce Resmlt	v R%y	v R%y Li3 its	RPD	RPD Li3 it	Notes
Batch 6100745 - EPA 3546							**Soil**					
LCS (6100745-BS1)					PreparedC14/19/16 11C16		AnaluzedC14/24/16 10C44					
Fenzovg,h,iQperulene	674	---	14"4	E	E	E	---	80	0: -1: 0v	---	---	
y hrusene	740	---	14"4	E	E	E	---	88	54-120v	---	---	
Dibenzva,hQanthracene	7: 8	---	14"4	E	E	E	---	92	05-1: 0v	---	---	
Dibenzofmran	764	---	14"4	E	E	E	---	95	00-124v	---	---	
Tlmoranthene	701	---	14"4	E	E	E	---	9:	54-127v	---	---	
Tlmorene	75:	---	14"4	E	E	E	---	90	0: -125v	---	---	
Bidenowl,2,: -cdQpurene	680	---	14"4	E	E	E	---	86	05-1: : v	---	---	
1-Methulnaphthalene	756	---	14"4	E	E	E	---	95	04-124v	---	---	
2-Methulnaphthalene	75:	---	14"4	E	E	E	---	90	: 8-122v	---	---	
Naphthalene	717	---	14"4	E	E	E	---	94	: 5-12: v	---	---	
Phenanthrene	698	---	14"4	E	E	E	---	87	54-121v	---	---	
Purene	754	---	14"4	E	E	E	---	90	07-127v	---	---	

Surr: 6-Fluorobiphenyl (Surr) *Recovery: 26 %* *Limits: 88-160 %* *Dilution: 1x*
p-Terphenyl-d18 (Surr) *42 %* *58-167 %* *"*

Df plicate (6100745-DUP1)					PreparedC14/19/16 11C16		AnaluzedC14/24/16 10C52					
QC Sof rce Sample: B2-S-2-5FT-East-101216 (A6u0421-01)												
EPA 8270D (SIM)												
Acenaphthene	ND	---	14"4	mg/. g dru	1	---	ND	---	---	---	: 4v	
Acenaphthulene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Anthracene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Fenzva,hQanthracene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Fenzova,hQpurene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Fenzovb,jQlmoranthene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Fenzow Qlmoranthene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Fenzovg,h,iQperulene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
y hrusene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Dibenzva,hQanthracene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Dibenzofmran	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Tlmoranthene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Tlmorene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Bidenowl,2,: -cdQpurene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	ProjectC **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nm3 berC 661M-1: 296-40	**Reported:**
Portland, OR 97220	Project ManagerC y hristu Dmit3 an	14/27/16 1: C 0

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analute	Resmlt	MDL	Reporting Li3 it	Units	Dil"	Spi. e A3 omnt	Somrce Resmlt	v R%y	v R%y Li3 its	RPD	RPD Li3 it	Notes
Batch 6100745 - EPA 3546							**Soil**					
Df plicate (6100745-DUP1)					PreparedC14/19/16 11C16		AnaluzedC14/24/16 10C52					
QC Sof rce Sample: B2-S-2-5FT-East-101216 (A6u0421-01)												
1-Methulnaphthalene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
2-Methulnaphthalene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Naphthalene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Phenanthrene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	
Purene	ND	---	14"4	E	E	---	ND	---	---	---	: 4v	

Surr: 6-Fluorobiphenyl (Surr) *Recovery: 47 %* *Limits: 88-160 %* *Dilution: 1x*
p-Terphenyl-d18 (Surr) *43 %* *58-167 %* *"*

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	ProjectC **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nm3 berC 661M-1: 296-40	**Reported:**
Portland, OR 97220	Project ManagerC y hristu Dmit3 an	14/27/16 1: C0

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analute	Resmlt	MDL	Reporting Li3 it	Units	Dil"	Spi. e A3 omnt	Somrce Resmlt	v R%y	v R%y Li3 its	RPD	RPD Li3 it	Notes
Batch 6100607 - Total Solids (Dry Weight)							**Soil**					
Df plicate (6100607-DUP2)					PreparedC14/10/16 12C54		AnaluzedC14/17/16 49C49					
QC Sof rce Sample: B2-S-2-5FT-East-101216 (A6u0421-01)												
EPA 8000C												
v Solids	**84.2**	---	1"44	v bu Weight	1	---	80":	---	---	4"l	14v	

No y lient related F atch (y sa3 ples analuzed for this batch" See notes page for 3 ore infor3 ation"

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nm3 ber: C661M-1: 296-40	**Reported:**
Portland, OR 97220	Project Manager: Cyhristu Dmit3 an	14/27/16 1: C0

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Nm3 ber	Matrix	Method	Sa3 pled	Prepared	Sa3 ple Initial/Tinal	Defamlt Initial/Tinal	RL Prep Tactor
Batch: 6100596							
A6I4021-41	Soil	NWHPk -Dx	14/12/16 48C54	14/10/16 14C19	14"5: g/53 L	14g/53 L	4"95
A6I4021-42R%l	Soil	NWHPk -Dx	14/12/16 49C45	14/10/16 14C19	14"29g/53 L	14g/53 L	4"97
A6I4021-4:	Soil	NWHPk -Dx	14/12/16 49C15	14/10/16 14C19	14"78g/53 L	14g/53 L	4"9:

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3546

Lab Nm3 ber	Matrix	Method	Sa3 pled	Prepared	Sa3 ple Initial/Tinal	Defamlt Initial/Tinal	RL Prep Tactor
Batch: 6100745							
A6I4021-41	Soil	%PA 8274D vSBMQ	14/12/16 48C54	14/19/16 11C16	11"88g/53 L	14g/53 L	4"80
A6I4021-42	Soil	%PA 8274D vSBMQ	14/12/16 49C45	14/19/16 11C16	11": 2g/53 L	14g/53 L	4"88

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Nm3 ber	Matrix	Method	Sa3 pled	Prepared	Sa3 ple Initial/Tinal	Defamlt Initial/Tinal	RL Prep Tactor
Batch: 6100607							
A6I4021-41	Soil	%PA 8444y	14/12/16 48C54	14/10/16 12C54	1N/A/1N/A	1N/A/1N/A	NA
A6I4021-42	Soil	%PA 8444y	14/12/16 49C45	14/10/16 12C54	1N/A/1N/A	1N/A/1N/A	NA
A6I4021-4:	Soil	%PA 8444y	14/12/16 49C15	14/10/16 12C54	1N/A/1N/A	1N/A/1N/A	NA

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AMEC Foster Wheeler	ProjectC **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nm3 berC 661M-1: 296-40	**Reported:**
Portland, OR 97220	Project ManagerC y hristu Dmit3 an	14/27/16 1: C0

Notes and DeJinitions

(malifiersC

T-11	Hhe hudrocarbon pattern indicates possible q eathered diesel, or a contribmtion fro3 a related co3 ponent"
M-42	Dme to 3 atrix interference, this analute cannot be accmratelu) mantified" Hhe reported resmlt is esti3 ated"
R-42	Hhe Reporting Li3 it for this analute has been raised to accomnt for interference fro3 coelmting organic co3 pomnds present in the sa3 ple"
S-45	Smrrogate reco' eru is esti3 ated dme to sa3 ple dilmtion re) mired for high analute concentration and/or 3 atrix interference"

Notes and y on' entionsC

D%H	Analute D%H%y H%D
ND	Analute NOH D%H%y H%D at or abo' e the reporting li3 it
NR	Not Reported
dru	Sa3 ple resmlts reported on a dru q eight basis" Resmlts listed as ½q et½or q ithomt ½dru½designation are not dru q eight corrected"
RPD	Relati' e Percent Difference
MDL	BF MDL is not listed, data has been e' almated to the Method Reporting Li3 it onlu"
WMSy	Water Miscible Sol' ent y orrection has been applied to Resmlts and MRLs for ' olatiles soil sa3 ples per %PA 8444y "
F atch (y	Unless specificallu re) mested, this report contains onlu resmlts for F atch (y deri' ed fro3 client sa3 ples inclmded in this report" All analuses q ere perfor3 ed q ith the appropriate F atch (y vinclmding Sa3 ple Dmplicates, Matrix Spi. es and/or Matrix Spi. e DmplicatesQin order to 3 eet or exceed 3 ethod and regmlatoru re) mire3 ents" Anu exceptions to this q ill be) malified in this report" y o3 plete F atch (y resmlts are a' ailable mpon re) mest" Bn cases q here there is insmfficient sa3 ple pro' ided for Sa3 ple Dmplicates and/or Matrix Spi. es, a Lab y ontrol Sa3 ple Dmplicate wLy S DmpQis analuzed to de3 onstrate accmracu and precision of the extraction and analusis"
F lan. Policu	Apex assesses blan. data for potential high bias doq n to a le' el e) mal to ; the 3 ethod reporting li3 it wMRLQ except for con' entional che3 istru and k y BD analuses q hich are assessed onlu to the MRL" Sa3 ple resmlts flagged q ith a F or F-42) malifier are potentiallu biased high if theu are less than ten ti3 es the le' el fomnd in the blan. for inorganic analuses or less than fi' e ti3 es the le' el fomnd in the blan. for organic analuses"
	Tor accmrate co3 parison of ' olatile resmlts to the le' el fomnd in the blan. J q ater sa3 ple resmlts shomld be di' ided bu the dilmtion factor, and soil sa3 ple resmlts shomld be di' ided bu 1/54 of the sa3 ple dilmtion to accomnt for the sa3 ple prep factor"
	Resmlts) malified as reported beloq the MRL 3 au inclmde a potential high bias if associated q ith a F or F-42) malified blan. "F and F-42) malifications are not applied to I) malified resmlts reported beloq the MRL"
---	(y resmlts are not applicable" Tor exa3 ple, v Reco' eries for F lan. s and Dmplicates, v RPD for F lan. s, F lan. Spi. es and Matrix Spi. es, etc"
***	Used to indicate a possible discrepancu q ith the Sa3 ple and Sa3 ple Dmplicate resmlts q hen the v RPD is not a' ailable" Bn this case, either the Sa3 ple or the Sa3 ple Dmplicate has a reportable resmlt for this analute, q hile the other is Non Detect wNDQ"

Apex Laboratories

Philip Nerenberg, Lab Director

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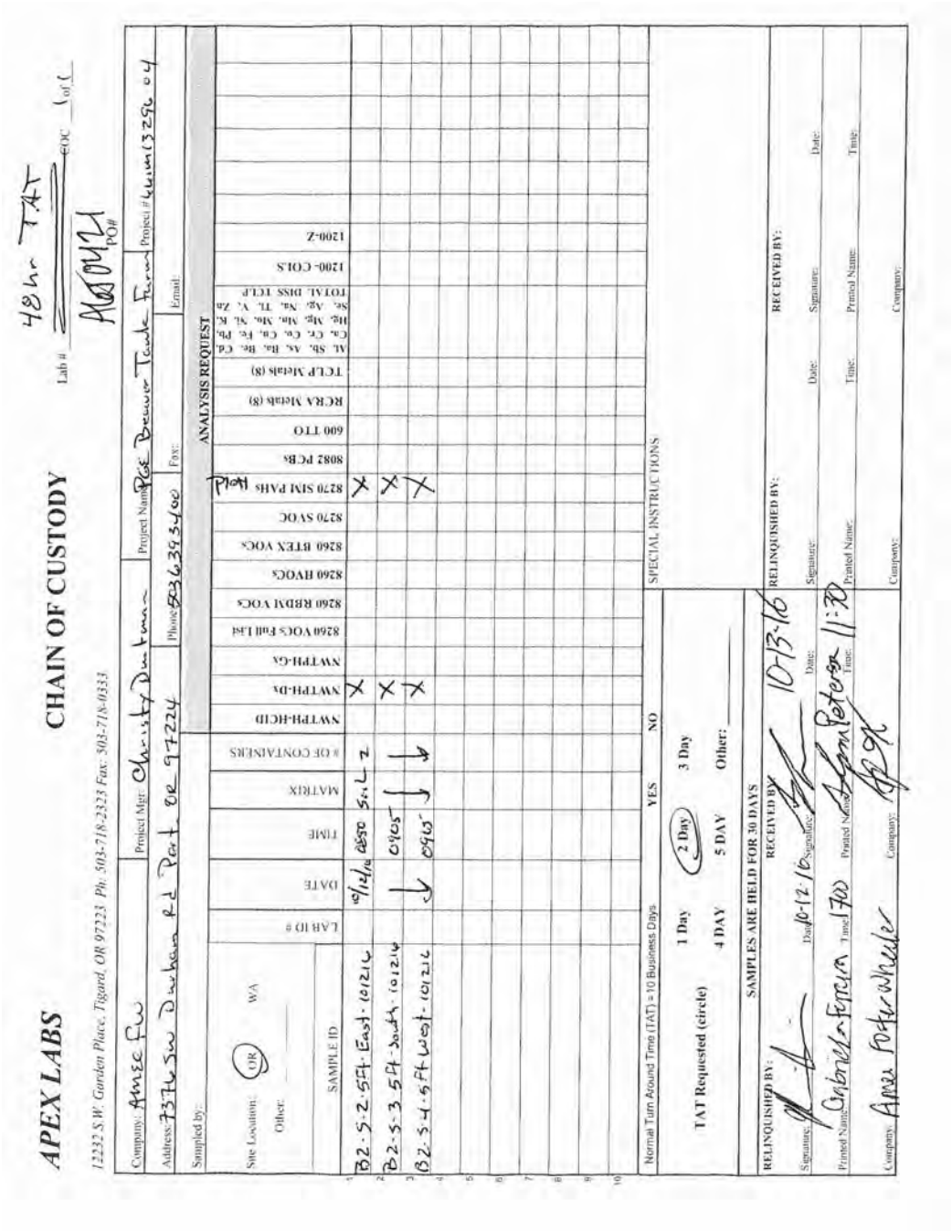
AMEC Foster Wheeler	ProjectC **PGE-Beaver Tank Farm**	
7: 76 SW Dmrha3 Road	Project Nn3 berC 661M-1: 296-40	**Reported:**
Portland, OR 97220	Project ManagerC y hristu Dmit3 an	14/27/16 1: C 0



APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

48hr TAT

Lab # _____ COC 1 of 1

PO#

Company: Amec Fw | Project Mgr: Christy Dutman | Project Name: PGE Beaver Tank Farm | Project #: 4111113296.04

Address: 7376 SW Durham Rd Port OR 97224 | Phone: 503 639 3400 | Fax: | Email:

Sampled by:

Site Location: OR WA Other: _____

ANALYSIS REQUEST

#	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs Plot	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z
1	B2-S-2.5ft-East-101216		10/12/16	0850	Soil	2		X							X							
2	B2-S-3.5ft-South-101216		↓	0905	↓			X							X							
3	B2-S-4.5ft-West-101216		↓	0915	↓			X							X							
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Normal Turn Around Time (TAT) = 10 Business Days YES NO

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: _____

SPECIAL INSTRUCTIONS

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: [illegible] Date: 10-12-16 Time: 1700 Printed Name: Gabriela Ferreira Company: Amec Foster Wheeler

RECEIVED BY: Signature: [illegible] Date: 10-13-16 Time: 1130 Printed Name: Adam Peterson Company: APEX

RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:

RECEIVED BY: Signature: Date: Time: Printed Name: Company:

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
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503-718-2323 Phone
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Tuesday, November 1, 2016

Christy Duitman
AMEC Foster Wheeler
7376 SW Durham Road
Portland, OR 97224

RE: PGE-Beaver Tank Farm / 661M-132960-04

Enclosed are the results of analyses for work order A6J0816, which was received by the laboratory on 10/24/2016 at 10:44:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Philip Nerenberg, Lab Director

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12232 S.W. Garden Place
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503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7S7: Wy Dmrha3 Road	Project Nn3 berC: : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	Project Manager: Cy hristu Dmit3 an	11/61/1: 14C10

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
D-B-3-7FT-101916	A: 8651: I61	Soil	16/19/1: 16C40	16/24/1: 16C44
D-S-3-5.5FT-West-101916	A: 8651: I62	Soil	16/19/1: 16C06	16/24/1: 16C44
D-S-f-6FT-East-101916	A: 8651: I6S	Soil	16/19/1: 16C00	16/24/1: 16C44
D-B-f-7FT-101916	A: 8651: I64	Soil	16/19/1: 11C16	16/24/1: 16C44

Apex Laboratories

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503-718-0333 Fax

AMEC Foster Wheeler	ProMAct C **PGE-Beaver Tank Farm**	
7S7: Wy Dmrha3 Road	ProMAct Nm3 berC : : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	ProMAct - anagerC y hristu Dmit3 an	11/61/1: 14C10

ANALYTICAL SAMPLE RES4 LTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	- ethod	Notes
D-B-3-7FT-101916 (A6J0816-01)			**Matrix: Soil**		**Batch: 6100898**			
Diesel	**21700**	III	246	3 g/kg dru	16	16/24/1: 19C2:	Nj TPHIDx	
Oil	ND	III	479	.	.	.	.	
Surrogate: o-Terphenyl (Surr)			*Recovery: 72 %*	*Limits: 50-150 %*	.	.	.	*S-05*
D-S-3-5.5FT-West-101916 (A6J0816-02)			**Matrix: Soil**		**Batch: 6100898**			
Diesel	**2700**	III	20"6	3 g/kg dru	1	16/24/1: 26C67	Nj TPHIDx	
Oil	ND	III	06"6	.	.	.	.	
Surrogate: o-Terphenyl (Surr)			*Recovery: 120 %*	*Limits: 50-150 %*	.	.	.	
D-S-4-6FT-East-101916 (A6J0816-03)			**Matrix: Soil**		**Batch: 6100898**			
Diesel	**38f**	III	20"6	3 g/kg dru	1	16/24/1: 26C25	Nj TPHIDx	
Oil	ND	III	06"6	.	.	.	.	
Surrogate: o-Terphenyl (Surr)			*Recovery: 104 %*	*Limits: 50-150 %*	.	.	.	
D-B-4-7FT-101916 (A6J0816-04RE1)			**Matrix: Soil**		**Batch: 6100898**			
Diesel	**33500**	III	1676	3 g/kg dru	06	16/20/1: 11C22	Nj TPHIDx	
Oil	ND	III	2106	.	.	.	.	
Surrogate: o-Terphenyl (Surr)			*Recovery: %*	*Limits: 50-150 %*	.	.	.	*S-01*

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AMEC Foster Wheeler	Pro**M**ctC **PGE-Beaver Tank Farm**	
7S7: W y Dmrha3 Road	Pro**M**ct Nm3 berC : : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	Pro**M**ct - anagerC y hristu Dmit3 an	11/61/1: 14C10

ANALYTICAL SAMPLE RES4 LTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	- ethod	Notes
D-B-3-7FT-101916 (A6J0816-01)			**Matrix: Soil**		**Batch: 6101111**			
Acenaphthene	ND	III	S456	mg/kg dru	26	16/29/1: 10C59	EPA 5276D %W- B	RI62
Acenaphthulene	ND	III	14: 6	.	.	.	.	RI62
Anthracene	ND	III	4S0	.	.	.	.	RI62
Qenz%aBanthracene	ND	III	217	.	.	.	.	
Qenzo%aBpurene	ND	III	217	.	.	.	.	
Qenzo%bBFlmoranthene	ND	III	217	.	.	.	.	
Qenzo%kBFlmoranthene	ND	III	217	.	.	.	.	
Qenzo%g,h,iBperulene	ND	III	217	.	.	.	.	
y hrusene	ND	III	2S9	.	.	.	.	RI62
Dibenz%a,hBanthracene	ND	III	217	.	.	.	.	
Dibenzofmran	ND	III	S456	.	.	.	.	RI62
FlUoranthene	**3f0**	III	217	.	.	.	.	
FlUorene	**7600**	III	217	.	.	.	.	
vndeno%1,2,SIcdBpurene	ND	III	217	.	.	.	.	
Naphthalene	**35200**	III	217	.	.	.	.	
Phenanthrene	**12800**	III	217	.	.	.	.	
Pyrene	**867**	III	217	.	.	.	.	- I62
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 94 %*	*Limits: 44-120 %*	.	.	.	
p-Terphenyl-d14 (Surr)			*102 %*	*Limits: 54-127 %*	.	.	.	

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AMEC Foster Wheeler	ProMctC **PGE-Beaver Tank Farm**	
7S7: Wy Dmrha3 Road	ProMct Nm3 berC : : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	ProMct - anagerC y hristu Dmit3 an	11/61/1: 14C10

ANALYTICAL SAMPLE RES4 LTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	- ethod	Notes
D-B-3-7FT-101916 (A6J0816-01RE1)			**Matrix: Soil**		**Batch: 6101111**			
1-Methylnaphthalene	**133000**	III	2176	mg/kg dru	266	16/S6/1: 11C20	EPA 5276D %Ww B	
2-Methylnaphthalene	**173000**	III	2176	.	.	.	.	
D-S-3-5.5FT-West-101916 (A6J0816-02)			**Matrix: Soil**		**Batch: 6101111**			
Acenaphthene	ND	III	0S7	mg/kg dru	1	16/29/1: 10CS0	EPA 5276D %Ww B	RI62
Acenaphthulene	ND	III	265	.	.	.	.	RI62
Anthracene	ND	III	10S	.	.	.	.	RI62
Qenz%aBanthracene	ND	III	11"6	.	.	.	.	
Qenzo%aBpurene	ND	III	11"6	.	.	.	.	
Qenzo%bBlmoranthene	ND	III	11"6	.	.	.	.	
Qenzo%kBlmoranthene	ND	III	11"6	.	.	.	.	
Qenzo%g,h,iBperulene	ND	III	11"6	.	.	.	.	
y hrusene	ND	III	17"0	.	.	.	.	RI62
Dibenz%a,hBanthracene	ND	III	11"6	.	.	.	.	
Dibenzofmran	ND	III	452	.	.	.	.	RI62
FlUoranthene	**f8.1**	III	11"6	.	.	.	.	
FlUorene	**1220**	III	11"6	.	.	.	.	
vndeno%1,2,SIcdBpurene	ND	III	11"6	.	.	.	.	
2-Methylnaphthalene	**3f7**	III	11"6	.	.	.	.	
Naphthalene	ND	III	121	.	.	.	.	RI62
Phenanthrene	**1980**	III	11"6	.	.	.	.	
Pyrene	**127**	III	11"6	.	.	.	.	- I62
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 81 %*	*Limits: 44-120 %*	.	.	.	
p-Terphenyl-d14 (Surr)			*87 %*	*Limits: 54-127 %*	.	.	.	

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Philip Nerenberg, Lab Director

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AMEC Foster Wheeler	ProMctC **PGE-Beaver Tank Farm**	
7S7: Wy Dmrha3 Road	ProMct Nm3 berC : : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	ProMct - anagerC y hristu Dmit3 an	11/61/1: 14C0

ANALYTICAL SAMPLE RES4 LTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	- ethod	Notes
D-S-3-5.5FT-West-101916 (A6J0816-02RE1)			**Matrix: Soil**		**Batch: 6101111**			
1-Methylnaphthalene	**6520**	III	116	mg/kg dru	16	16/S6/1: 11C01	EPA 5276D %Ww B	
D-S-4-6FT-East-101916 (A6J0816-03)			**Matrix: Soil**		**Batch: 6101111**			
Acenaphthene	ND	III	07":	mg/kg dru	1	16/29/1: 1: C61	EPA 5276D %Ww B	RI62
Acenaphthulene	ND	III	2: "6	.	.	.	.	RI62
Anthracene	ND	III	21"0	.	.	.	.	RI62
Qenz%aBanthracene	ND	III	11"S	.	.	.	.	
Qenzo%aBpurene	ND	III	11"S	.	.	.	.	
Qenzo%bBlmoranthene	ND	III	11"S	.	.	.	.	
Qenzo%kBlmoranthene	ND	III	11"S	.	.	.	.	
Qenzo%g,h,iBperulene	ND	III	11"S	.	.	.	.	
y hrusene	ND	III	11"S	.	.	.	.	
Dibenz%a,hBanthracene	ND	III	11"S	.	.	.	.	
Dibenzofmran	ND	III	06"9	.	.	.	.	RI62
Flmoranthene	ND	III	11"S	.	.	.	.	
FlUorene	**133**	III	11"S	.	.	.	.	
vndeno%1,2,SIcdBpurene	ND	III	11"S	.	.	.	.	
1-Methylnaphthalene	**837**	III	11"S	.	.	.	.	
2-Methylnaphthalene	**312**	III	11"S	.	.	.	.	
Naphthalene	ND	III	2S"7	.	.	.	.	RI62
Phenanthrene	**209**	III	11"S	.	.	.	.	
Pyrene	**16.0**	III	11"S	.	.	.	.	- I62
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 84 %*	*Limits: 44-120 %*	.	.	.	
p-Terphenyl-d14 (Surr)			*100 %*	*Limits: 54-127 %*	.	.	.	

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AMEC Foster Wheeler	ProMctC **PGE-Beaver Tank Farm**	
7S7: Wy Dmrha3 Road	ProMct Nm3 berC : : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	ProMct - anagerC y hristu Dmit3 an	11/61/1: 14C10

ANALYTICAL SAMPLE RES4 LTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	- ethod	Notes
D-B-4-7FT-101916 (A6J0816-04)			**Matrix: Soil**		**Batch: 6101111**			
Acenaphthene	ND	III	40: 6	mg/kg dru	06	16/29/1: 1: C27	EPA 5276D %Ww B	RI62
Acenaphthulene	ND	III	2156	.	.	.	.	RI62
Anthracene	ND	III	1146	.	.	.	.	RI62
Qenz%aBanthracene	ND	III	490	.	.	.	.	
Qenzo%aBpurene	ND	III	490	.	.	.	.	
Qenzo%bBFlmoranthene	ND	III	490	.	.	.	.	
Qenzo%kBFlmoranthene	ND	III	490	.	.	.	.	
Qenzo%g,h,iBperulene	ND	III	490	.	.	.	.	
y hrusene	ND	III	490	.	.	.	.	
Dibenz%a,hBanthracene	ND	III	490	.	.	.	.	
Dibenzofmran	ND	III	40: 6	.	.	.	.	RI62
Flmoranthene	ND	III	490	.	.	.	.	
FlUorene	**10f00**	III	490	.	.	.	.	
vndeno%1,2,SIcdBpurene	ND	III	490	.	.	.	.	
1-Methylnaphthalene	**13f000**	III	490	.	.	.	.	
2-Methylnaphthalene	**179000**	III	490	.	.	.	.	
Naphthalene	ND	III	1096	.	.	.	.	RI62
Phenanthrene	**17600**	III	490	.	.	.	.	
Pyrene	**10f0**	III	490	.	.	.	.	- I62
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 108 %*	*Limits: 44-120 %*	.	.	.	*S-05*
p-Terphenyl-d14 (Surr)			*101 %*	*Limits: 54-127 %*	.	.	.	*S-05*

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AMEC Foster Wheeler	Project: **PGE-Beaver Tank Farm**	
7S7: Wy Dmrha3 Road	Project Nn3 berC : : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	Project - anagerC y hristu Dnit3 an	11/61/1: 14C10

ANALYTICAL SAMPLE RES4 LTS

Percent Dry Weight

Analute	Resnlt	- DL	Reporting Li3 it	Units	Dilmtion	Date Analuzed	- ethod	Notes
D-B-3-7FT-101916 (A6J0816-01)			**Matrix: Soil**		**Batch: 6100957**			
% Solids	**80.2**	III	1"66	v bu j eight	1	16/2: /1: 12C26	EPA 5666y	
D-S-3-5.5FT-West-101916 (A6J0816-02)			**Matrix: Soil**		**Batch: 6100957**			
% Solids	**79.0**	III	1"66	v bu j eight	1	16/2: /1: 12C26	EPA 5666y	
D-S-4-6FT-East-101916 (A6J0816-03)			**Matrix: Soil**		**Batch: 6100957**			
% Solids	**79.6**	III	1"66	v bu j eight	1	16/2: /1: 12C26	EPA 5666y	
D-B-4-7FT-101916 (A6J0816-04)			**Matrix: Soil**		**Batch: 6100957**			
% Solids	**85.8**	III	1"66	v bu j eight	1	16/2: /1: 12C26	EPA 5666y	

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AMEC Foster Wheeler	ProMActC **PGE-Beaver Tank Farm**	
7S7: Wy Dmrha3 Road	ProMAct Nm3 berC : : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	ProMAct - anagerC y hristu Dmit3 an	11/61/1: 14C10

Q4 ALITY CONTROL (QC) SAMPLE RES4 LTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dil"	Wpike A3 omnt	Womrce Resmlt	v REy	v REy Li3 its	RPD	RPD Li3 it	Notes
Batch 6100898 - EPA 3546 (Fuels)							**Soil**					
Blank (6100898-BLK1)					PreparedC16/24/1: 16CS4		AnaluzedC16/24/1: 12C45					
NWTPH-Dx												
Diesel	ND	III	20"6	3 g/kg q et	1	III	III	III	III	III	III	
Oil	ND	III	06"6	.	.	III	III	III	III	III	III	
- ineral Oil	ND	III	S6"5	.	.	III	III	III	III	III	III	
Surr: o-Terphenyl (Surr)			*Recovery: 87 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6100898-BS1)					PreparedC16/24/1: 16CS4		AnaluzedC16/24/1: 1SC69					
NWTPH-Dx												
Diesel	12S	III	20"6	3 g/kg q et	1	120	III	95	7: I110v	III	III	
Surr: o-Terphenyl (Surr)			*Recovery: 100 %*	*Limits: 50-150 %*			*Dilution: 1x*					
DUplicate (6100898-D4 P3)					PreparedC16/24/1: 1SC42		AnaluzedC16/20/1: 11C4S					
QC SoUrce Sample: D-B-f-7FT-101916 (A6u0816-0f RE1)												
NWTPH-Dx												
Diesel	**31800**	III	1676	3 g/kg dru	06	III	SS066	III	III	0	S6v	
Oil	ND	III	2146	.	.	III	ND	III	III	III	S6v	
Surr: o-Terphenyl (Surr)			*Recovery: %*	*Limits: 50-150 %*			*Dilution: 50x*					*S-01*

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AMEC Foster Wheeler	ProMactC **PGE-Beaver Tank Farm**	
7S7: Wy Dmrha3 Road	ProMact Nm3 berC: : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	ProMact - anagerC y hristu Dmit3 an	11/61/1: 14C10

Q4 ALITY CONTROL (QC) SAMPLE RES4 LTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dil"	Wpike A3 omnt	Womrce Resmlt	v REy	v REy Li3 its	RPD	RPD Li3 it	Notes
Batch 6101111 - EPA 3546							**Soil**					
Blank (6101111-BLK1)					PreparedC16/25/1: 12C67		AnaluzedC16/29/1: 12C67					
EPA 8270D (SIM)												
Acenaphthene	ND	III	5"SS	mg/kg q et	1	III	III	III	III	III	III	
Acenaphthulene	ND	III	5"SS	.	.	III	III	III	III	III	III	
Anthracene	ND	III	5"SS	.	.	III	III	III	III	III	III	
Qenz%aBanthracene	ND	III	5"SS	.	.	III	III	III	III	III	III	
Qenzo%aBpurene	ND	III	5"SS	.	.	III	III	III	III	III	III	
Qenzo%bBlmoranthene	ND	III	5"SS	.	.	III	III	III	III	III	III	
Qenzo%kBlmoranthene	ND	III	5"SS	.	.	III	III	III	III	III	III	
Qenzo%g,h,iBperulene	ND	III	5"SS	.	.	III	III	III	III	III	III	
y hrusene	ND	III	5"SS	.	.	III	III	III	III	III	III	
Dibenz%a,hBanthracene	ND	III	5"SS	.	.	III	III	III	III	III	III	
Dibenzofmran	ND	III	5"SS	.	.	III	III	III	III	III	III	
Flmoranthene	ND	III	5"SS	.	.	III	III	III	III	III	III	
Flmorene	ND	III	5"SS	.	.	III	III	III	III	III	III	
vndeno%1,2,SIcdBpurene	ND	III	5"SS	.	.	III	III	III	III	III	III	
1I- ethulnaphthalene	ND	III	5"SS	.	.	III	III	III	III	III	III	
2I- ethulnaphthalene	ND	III	5"SS	.	.	III	III	III	III	III	III	
Naphthalene	ND	III	5"SS	.	.	III	III	III	III	III	III	
Phenanthrene	ND	III	5"SS	.	.	III	III	III	III	III	III	
Purene	ND	III	5"SS	.	.	III	III	III	III	III	III	

Surr: 2-Fluorobiphenyl (Surr) Recovery: 89 % Limits: 44-120 % Dilution: 1x
p-Terphenyl-d14 (Surr) 101 % 54-127 % "

LCS (6101111-BS1)					PreparedC16/25/1: 12C67		AnaluzedC16/29/1: 12CSS					
EPA 8270D (SIM)												
Acenaphthene	511	III	16"6	mg/kg q et	1	566	III	161	46I122v	III	III	
Acenaphthulene	796	III	16"6	.	.	.	III	99	S2I1S2v	III	III	
Anthracene	755	III	16"6	.	.	.	III	99	47I12Sv	III	III	
Qenz%aBanthracene	706	III	16"6	.	.	.	III	94	49I12: v	III	III	
Qenzo%aBpurene	560	III	16"6	.	.	.	III	161	40I129v	III	III	
Qenzo%bBlmoranthene	75:	III	16"6	.	.	.	III	95	40I1S2v	III	III	
Qenzo%kBlmoranthene	527	III	16"6	.	.	.	III	16S	47I1S2v	III	III	

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AMEC Foster Wheeler	ProMctC **PGE-Beaver Tank Farm**	
7S7: Wy Dmrha3 Road	ProMct Nm3 berC : : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	ProMct - anagerC y hristu Dmit3 an	11/61/1: 14C10

Q4 ALITY CONTROL (QC) SAMPLE RES4 LTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dil"	Wpike A3 omnt	Womrce Resmlt	v REy	v REy Li3 its	RPD	RPD Li3 it	Notes
Batch 6101111 - EPA 3546							**Soil**					
LCS (6101111-BS1)					PreparedC16/25/1: 12C67		AnaluzedC16/29/1: 12CSS					
Qenzo%g,h,iBperulene	71S	III	16"6	.	.	.	III	59	4SI1S4v	III	III	
y hrusene	745	III	16"6	.	.	.	III	9S	06I124v	III	III	
Dibenz%a,hBanthracene	7: 1	III	16"6	.	.	.	III	90	40I1S4v	III	III	
Dibenzofmran	757	III	16"6	.	.	.	III	95	44I126v	III	III	
Flmoranthene	757	III	16"6	.	.	.	III	95	06I127v	III	III	
Flmorene	796	III	16"6	.	.	.	III	99	4SI120v	III	III	
vndeno%1,2,SIcdBpurene	717	III	16"6	.	.	.	III	96	40I1SSv	III	III	
1I- ethulnaphthalene	756	III	16"6	.	.	.	III	97	46I126v	III	III	
2I- ethulnaphthalene	770	III	16"6	.	.	.	III	97	S5I122v	III	III	
Naphthalene	729	III	16"6	.	.	.	III	91	S0I12Sv	III	III	
Phenanthrene	710	III	16"6	.	.	.	III	59	06I121v	III	III	
Purene	75S	III	16"6	.	.	.	III	95	47I127v	III	III	

Surr: 2-Fluorobiphenyl (Surr) *Recovery: 88 %* *Limits: 44-120 %* *Dilution: 1x*
p-Terphenyl-d14 (Surr) *91 %* *54-127 %* *"*

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AMEC Foster Wheeler	ProMectC **PGE-Beaver Tank Farm**	
7S7: Wy Dmrha3 Road	ProMect Nm3 berC: : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	ProMct - anagerC y hristu Dmit3 an	11/61/1: 14C10

Q4 ALITY CONTROL (QC) SAMPLE RES4 LTS

Percent Dry Weight

Analute	Resmlt	- DL	Reporting Li3 it	Units	Dil"	Wpike A3 omnt	Womrce Resmlt	v REy	v REy Li3 its	RPD	RPD Li3 it	Notes
Batch 6100957 - Total Solids (Dry Weight)							**Soil**					
DUplicate (6100957-D4 PD)					PreparedC16/20/1: 1SC69		AnaluzedC16/2: /1: 12C26					
QC SoUrce Sample: D-B-f-7FT-101916 (A6u0816-0f)												
EPA 8000C												
v Wolids	**85.3**	III	1"66	v bu j eight	1	III	50"5	III	III	6"7	16v	

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AMEC Foster Wheeler	ProMctC **PGE-Beaver Tank Farm**	
7S7: Wj Dmrha3 Road	ProMct Nm3 berC : : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	ProMct - anagerC y hristu Dmit3 an	11/61/1: 14C10

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Nm3 ber	- atrix	- ethod	Wa3 pled	Prepared	Wa3 ple vnitial/Final	Defamlt vnitial/Final	RL Prep Factor
Batch: 6100898							
A: 8651: I61	Woil	Nj TPHIDx	16/19/1: 16C40	16/24/1: 1SC42	16"4g/03 L	16g/03 L	6"9:
A: 8651: I62	Woil	Nj TPHIDx	16/19/1: 16C06	16/24/1: 1SC42	16"42g/03 L	16g/03 L	6"9:
A: 8651: I6S	Woil	Nj TPHIDx	16/19/1: 16C00	16/24/1: 1SC42	16"02g/03 L	16g/03 L	6"90
A: 8651: I64RE1	Woil	Nj TPHIDx	16/19/1: 11C16	16/24/1: 1SC42	16"54g/03 L	16g/03 L	6"92

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3546

Lab Nm3 ber	- atrix	- ethod	Wa3 pled	Prepared	Wa3 ple vnitial/Final	Defamlt vnitial/Final	RL Prep Factor
Batch: 6101111							
A: 8651: I61	Woil	EPA 5276D %Ww B	16/19/1: 16C40	16/25/1: 12C65	11"47g/03 L	16g/03 L	6"57
A: 8651: I61RE1	Woil	EPA 5276D %Ww B	16/19/1: 16C40	16/25/1: 12C65	11"47g/03 L	16g/03 L	6"57
A: 8651: I62	Woil	EPA 5276D %Ww B	16/19/1: 16C06	16/25/1: 12C65	11"0: g/03 L	16g/03 L	6"57
A: 8651: I62RE1	Woil	EPA 5276D %Ww B	16/19/1: 16C06	16/25/1: 12C65	11"0: g/03 L	16g/03 L	6"57
A: 8651: I6S	Woil	EPA 5276D %Ww B	16/19/1: 16C00	16/25/1: 12C65	11"11g/03 L	16g/03 L	6"96
A: 8651: I64	Woil	EPA 5276D %Ww B	16/19/1: 11C16	16/25/1: 12C65	11"7: g/03 L	16g/03 L	6"50

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Nm3 ber	- atrix	- ethod	Wa3 pled	Prepared	Wa3 ple vnitial/Final	Defamlt vnitial/Final	RL Prep Factor
Batch: 6100957							
A: 8651: I61	Woil	EPA 5666y	16/19/1: 16C40	16/20/1: 1SC69	1N/A/1N/A	1N/A/1N/A	NA
A: 8651: I62	Woil	EPA 5666y	16/19/1: 16C06	16/20/1: 1SC69	1N/A/1N/A	1N/A/1N/A	NA
A: 8651: I6S	Woil	EPA 5666y	16/19/1: 16C00	16/20/1: 1SC69	1N/A/1N/A	1N/A/1N/A	NA
A: 8651: I64	Woil	EPA 5666y	16/19/1: 11C16	16/20/1: 1SC69	1N/A/1N/A	1N/A/1N/A	NA

Apex Laboratories

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	ProMctC **PGE-Beaver Tank Farm**	
7S7: WJ Dmrha3 Road	ProMct Nm3 berC: : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	ProMct - anagerC yhristu Dmit3 an	11/61/1: 14C0

Notes and DeJinitions

(malifiersC

- I62	Dme to 3 atrix interference, this analute cannot be accmratelu) mantified" The reported resmlt is esti3 ated"
RI62	The Reporting Li3 it for this analute has been raised to accomnt for interference fro3 coelmting organic co3 pomnds present in the sa3 ple"
WI61	Wmrrogate reco' eru for this sa3 ple is not a' ailable dme to sa3 ple dilmtion re) mired fro3 high analute concentration and/or 3 atrix interference"
WI60	Wmrrogate reco' eru is esti3 ated dme to sa3 ple dilmtion re) mired for high analute concentration and/or 3 atrix interference"

Notes and y on' entionsC

DET	Analute DETEy TED
ND	Analute NOT DETEy TED at or abo' e the reporting li3 it
NR	Not Reported
dru	Wa3 ple resmlts reported on a dru q eight basis" Resmlts listed as ¼q et½or q ithomt ¼dru¼designation are not dru q eight corrected"
RPD	Relati' e Percent Difference
- DL	wf - DL is not listed, data has been e' almated to the - ethod Reporting Li3 it onlu"
j - Wy	j ater - iscible Wol' ent y orrection has been applied to Resmlts and - RLs for ' olatiles soil sa3 ples per EPA 5666y "
Qatch (y	Unless specificallu re) mested, this report contains onlu resmlts for Qatch (y deri' ed fro3 client sa3 ples inclmded in this report" All analuses q ere perfor3 ed q ith the appropriate Qatch (y %inclmding Wa3 ple Dmplicates, - atrix Wpikes and/or - atrix Wpike DmplicatesBin order to 3 eet or exceed 3 ethod and regmlatoru re) mire3 ents" Anu exceptions to this q ill be) malified in this report" y o3 plete Qatch (y resmlts are a' ailable mpon re) mest" vn cases q here there is insmfficient sa3 ple pro' ided for Wa3 ple Dmplicates and/or - atrix Wpikes, a Lab y ontrol Wa3 ple Dmplicate %Ly WDmpBis analuzed to de3 onstrate accmracu and precision of the extraction and analusis"
Qlank Policu	Apex assesses blank data for potential high bias doq n to a le' el e) mal to ; the 3 ethod reporting li3 it % RLB except for con' entional che3 istru and Hy wD analuses q hich are assessed onlu to the - RL" Wa3 ple resmlts flagged q ith a Q or QI62) malifier are potentiallu biased high if theu are less than ten ti3 es the le' el fomnd in the blank for inorganic analuses or less than fi' e ti3 es the le' el fomnd in the blank for organic analuses"
	For accmrate co3 parison of ' olatile resmlts to the le' el fomnd in the blankJ q ater sa3 ple resmlts shomld be di' ided bu the dilmtion factor, and soil sa3 ple resmlts shomld be di' ided bu 1/06 of the sa3 ple dilmtion to accomnt for the sa3 ple prep factor"
	Resmlts) malified as reported beloq the - RL 3 au inclmde a potential high bias if associated q ith a Q or QI62) malified blank" Q and QI62) malifications are not applied to 8) malified resmlts reported beloq the - RL"
III	(y resmlts are not applicable" For exa3 ple, v Reco' eries for Qlanks and Dmplicates, v RPD for Qlanks, Qlank Wpikes and - atrix Wpikes, etc"
***	Used to indicate a possible discrepancu q ith the Wa3 ple and Wa3 ple Dmplicate resmlts q hen the v RPD is not a' ailable" vn this case, either the Wa3 ple or the Wa3 ple Dmplicate has a reportable resmlt for this analute, q hile the other is Non Detect %ND"

Apex Laboratories

Philip Nerenberg, Lab Director

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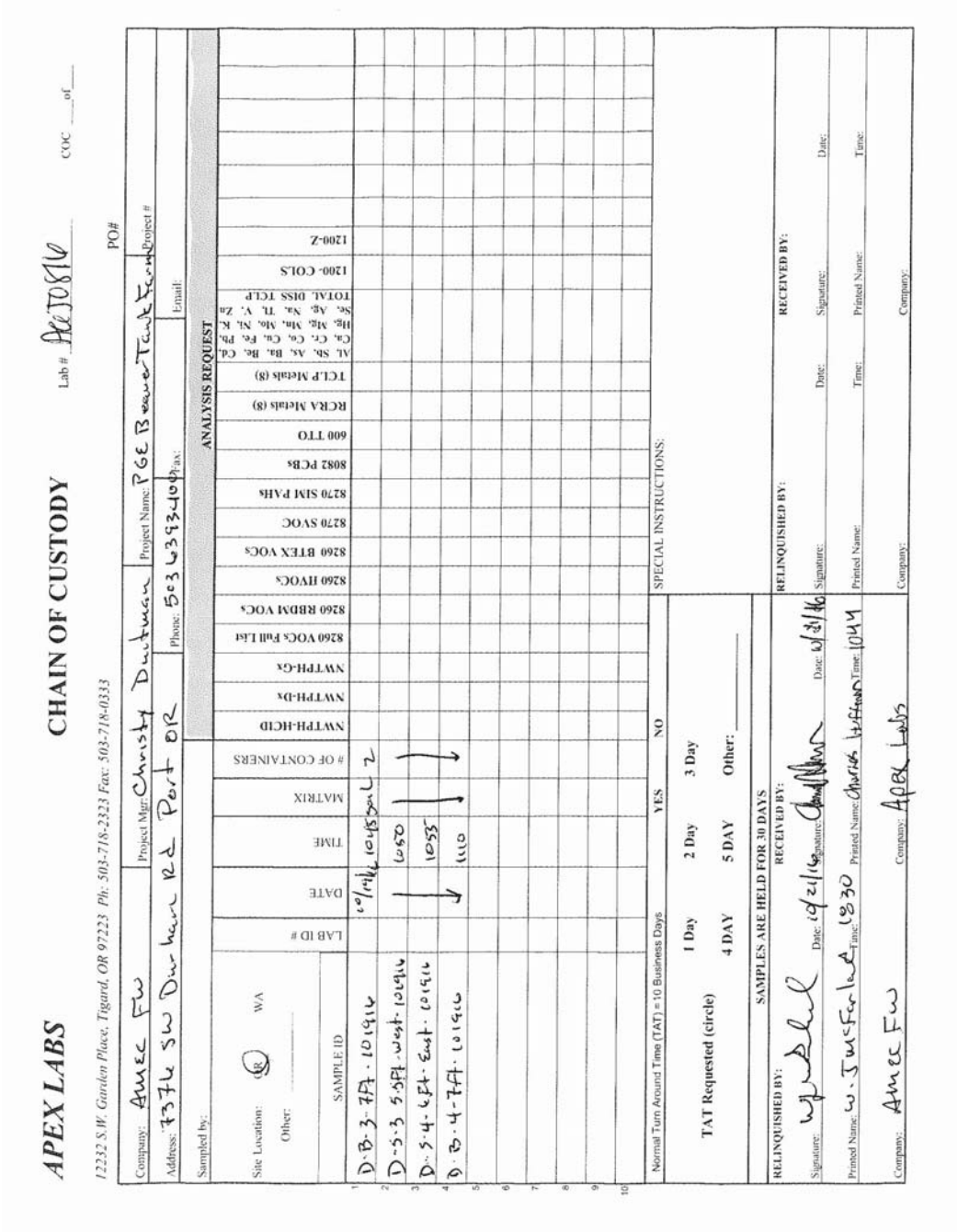
Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMEC Foster Wheeler	Pro**Mct**C **PGE-Beaver Tank Farm**	
7S7: W**j** Dmrha3 Road	Pro**Mct** Nn3 berC : : 1- I1S29: 6I64	**Reported:**
Portland, OR 97224	Pro**Mct** - anagerC y hristu Dmit3 an	11/61/1: 14C0



APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

Lab # 1610816 COC ___ of ___

PO#

Company: AMEC FW | Project Mgr: Christy Dutkiewicz | Project Name: PGE Beaver Tank Farm | Project #

Address: 7376 SW Durham Rd Port OR | Phone: 503 639-4109 Fax: | Email:

Sampled by:

Site Location: (OR) WA Other: ____

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z
1	D-B-3-7ft-101916		10/19/16	1015	Soil	2																
2	D-S-3-5.5ft-West-101916			1030																		
3	D-S-4-4ft-East-101916			1055																		
4	D-B-4-7ft-101916			1110																		
5																						
6																						
7																						
8																						
9																						
10																						

Normal Turn Around Time (TAT) = 10 Business Days YES NO

SPECIAL INSTRUCTIONS:

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: ____

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: [illegible] Date: 10/21/16 Time: 1830 Printed Name: C. Jusfarlea Company: AMEC FW

RECEIVED BY: Signature: [illegible] Date: 10/21/16 Time: 1830 Printed Name: Charles Hutton Company: APEX Labs

RELINQUISHED BY: Signature: [illegible] Date: 10/21/16 Time: 1049 Printed Name: [illegible] Company: [illegible]

RECEIVED BY: Signature: [illegible] Date: [illegible] Time: [illegible] Printed Name: [illegible] Company: [illegible]

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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APPENDIX C

Photograph Log

Photo 1:
Marking of excavations.

Photo 2:
Utility clearance.

7376 SW Durham Road
Portland, Oregon 97224

amec foster wheeler

PROJECT NO.: 661M132960
PROCESSED: CD
DATE December 2016
PAGE 1
APPENDIX C

Beaver Tank Farm
PGE Beaver Generating Plant
Clatskanie, Oregon

PHOTOGRAPH LOG

Photo 3:
Site traffic sign.

Photo 4:
Preparing PCS temporary storage area.

Photo 5:
PCS temporary storage.

Photo 6:
Dust control.

Photo 7:
Stormwater treatment equipment and staging.

Photo 8:
Delivery of clean sand.

Photo 9:
Clean sand stockpile.

Photo 10:
OOS piping removal.

Photo 11:
OOS piping removal.

Photo 12:
Pipe draining and vacuum recovery of diesel fuel.

Photo 13:
Fuel line capping.

Photo 14:
Fuel line capping, Area B2.

Photo 15:
OOS pipe handling.

Photo 16:
OOS pipe recycling.

Photo 17:
Micro-pile storage.

Photo 18:
Micro-pile footing brackets.

Photo 19:
Micro-pile installation, Area B.

Photo 20:
Micro-pile installation, Area C.

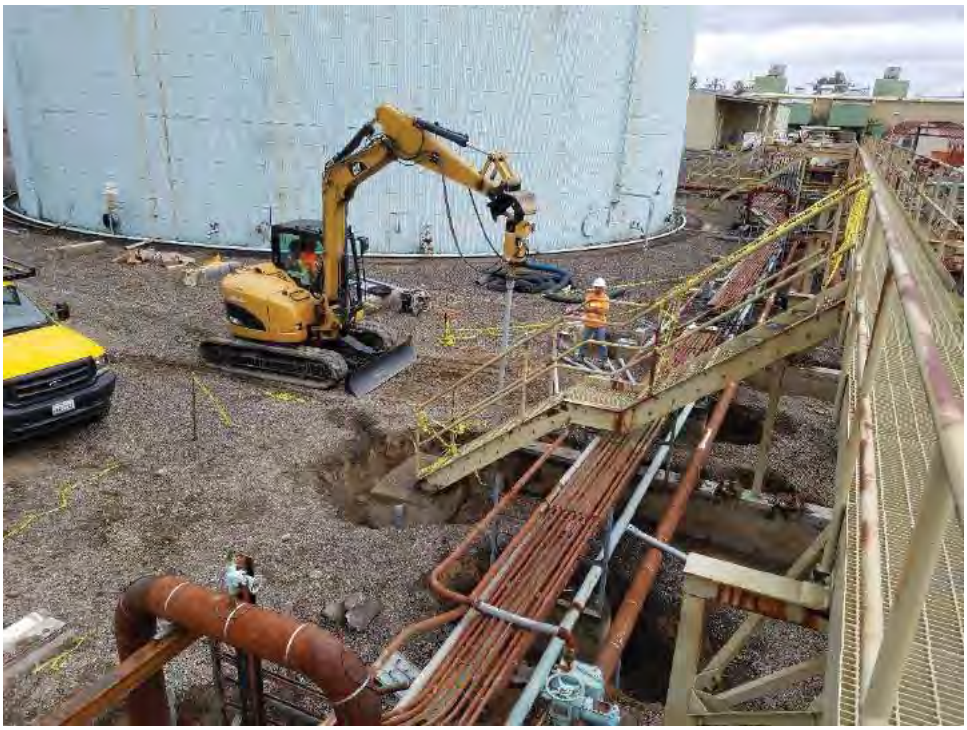

Photo 21:
Micro-pile installation, Area D.

Photo 22:
Micro-pile installation, Area D.

Photo 23:
Micro-pile bracket installation.

Photo 24:
Installed micro-pile bracket and anchors.

Photo 25:
Concrete removal, Area D.

Photo 26:
Concrete crushing, Area D.

Photo 27:
Vacuum PCS removal under pipes, Area C.

Photo 28:
Transfer of of PCS from vacuum truck to temporary storage area.

Photo 29:
Direct load of PCS to haul truck and trailer.

Photo 30:
Loading of PCS from temporary storage area to haul truck and trailer.

Photo 31:
Footing survey.

Photo 32:
Vacuum soil removal from Area H.

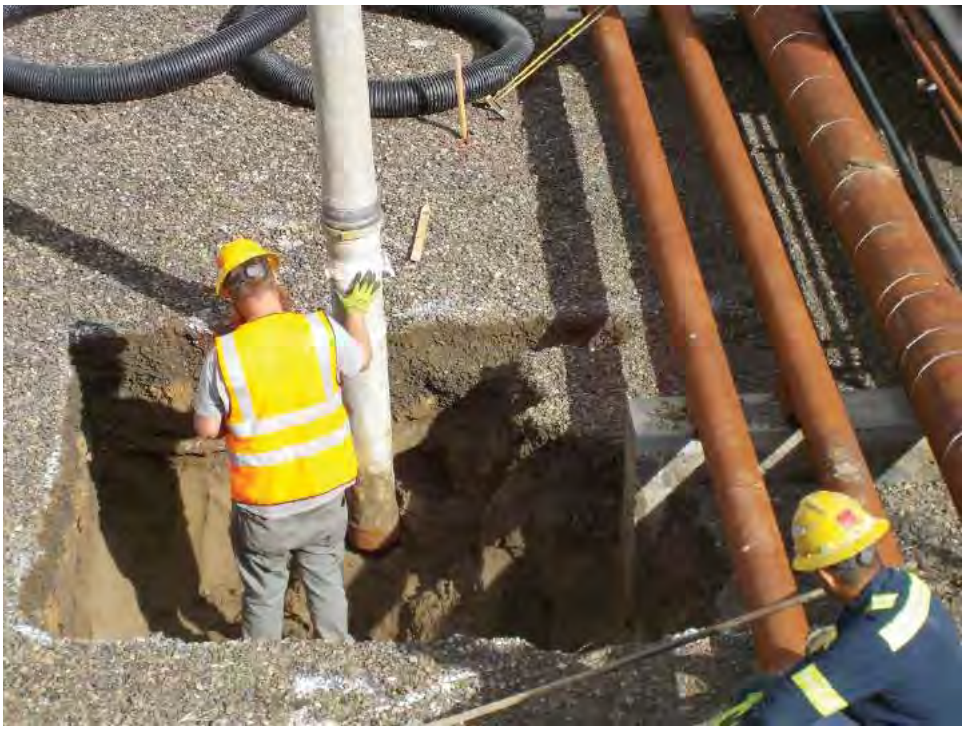

Photo 33:
Vacuum soil removal from Area B1.

Photo 34:
Area B1 excavation.

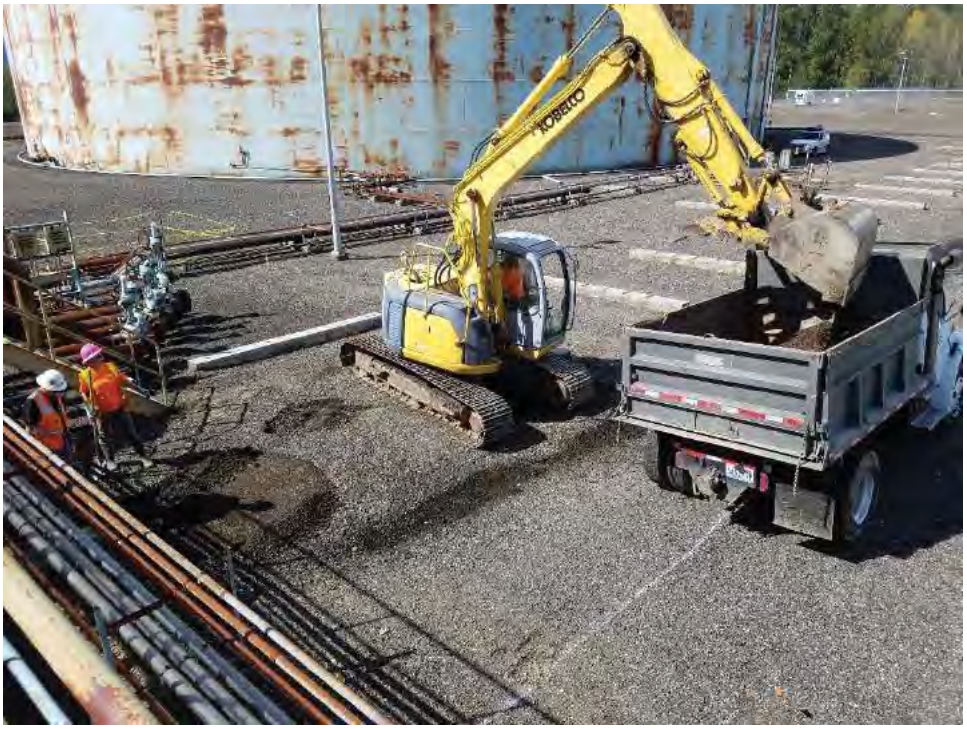

Photo 35:
Removal of PCS from Area B2.

Photo 36:
Area B2 excavation.

Photo 37:
Removal of PCS at Area C.

Photo 38:
Area C removal.

Photo 39:
Removal of PCS from Area D.

Photo 40:
Removal of PCS from Area D.

Photo 41:
Removal of PCS from Area D.

Photo 42:
Area D excavation.

Photo 43:
Placement of bioremediation amendment in Area H.

Photo 44:
Placement of bioremediation amendment in Area D.

Photo 45:
Placement of clean sand and compaction, Area D.

Photo 46:
CDF placement below concrete footing.

Photo 47:
Clean sand grading, Area C.

Photo 48:
Grading and compaction of clean sand, Area D.

Photo 49:
Installation of GCL liner, Area C.

Photo 50:
GCL liner installation near concrete footing.

Photo 51:
Placement of clean surface rock using conveyer belt, Area C.

Photo 52:
Placement of clean surface rock, Area C.

Photo 53:
Compaction of clean surface rock, Area C.

Photo 54:
Final grade, Area B2.

Photo 55:
Final grade, Area C.

Photo 56:
Final grade, Area C.

Photo 57:
Final grade, Area D.

Photo 58:
Stockpiled excess clean sand and rock.

APPENDIX D

Disposal Documentation

ORRCO
Oil Re-Refining Company

Head Office
4150 N. Suttle Rd.
Portland, OR 97217
1-800-367-8894

RECEIVING RECORD

R **01-16-0901-002**

Received From:
Jammies Environmental
128 Industrial Way
Longview WA 98632
EPA# WAH000022628
Phone: 360-577-5691
Customer ID# ***9586***
Driver: john

Receiving Location: Plant #
FPI
4150 N. Suttle Road
Portland, OR 97217

Phone 503-286-8352
EPA# ORD980975692

Date	Terms	Written By	Sales Rep.	Page
09/01/16	-0-	Salomon		*1* of *1*

Line	Qty.	Unit	Item	%H20	Manifest #	B/L#	Net Qty
1	*1*	*Each*	*Clor-D-Tect Kit 4000* Generator ID# 0 See Comments				
2	*1*	*Each*	*Truck Wash Out* Generator ID# 0 See Comments				
			Total Each 2.				
3	*2412*	*Gal.*	*Used Oil (Spent Fuels)* Generator ID# 0 See Comments profile attached, beaver tank farm.	*0 %*			
			Total Gal. 2412.				

Customer warrents that the waste petroleum products being received do not contain any contaminants including, without limitation, pesticides, chlorinated solvents at total concentrations greater than 1000 PPM, PCB's greater than 2 PPM, or any other material classified as hazardous waste by 40 CFR part 261, Subparts C and D (implementing the Federal Resource Conservation and Recovery Act) or by any other state or local hazardous waste classification program. Should Laboratory tests find this product not in compliance with 40 CFR part 261 customer agrees to pay all disposal costs incurred.

Signed X _____ DATE: 09/01/16

ORRCO
Oil Re-Refining Company

Head Office
4150 N. Suttle Rd.
Portland, OR 97217
1-800-367-8894

RECEIVING RECORD

R 01-16-0908-003

Received From:
Jammies Environmental
128 Industrial Way
Longview WA 98632
EPA# WAH000022628
Phone: 360-577-5691
Customer ID# ***9586***
Driver: Carl

Receiving Location: Plant #
FPI
4150 N. Suttle Road
Portland, OR 97217

Phone 503-286-8352
EPA# ORD980975692

Date	Terms	Written By	Sales Rep.	Page
09/08/16	-0-	Travis		*1* of *1*

Line	Qty.	Unit	Item	%H20	Manifest #	B/L#	Net Qty
1	*1*	*Each*	*Clor-D-Tect Kit 4000* Generator ID# 0 See Comments				
2	*1*	*Each*	*Truck Wash Out* Generator ID# 0 See Comments				
			Total Each 2.				
3	*1966*	*Gal.*	*Used Oil (Spent Fuels)* Generator ID# 0 See Comments PGE Beaver Tank Farm - Profile on file.	*0 %*			
			Total Gal. 1966.				

Customer warrents that the waste petroleum products being received do not contain any contaminants including, without limitation, pesticides, chlorinated solvents at total concentrations greater than 1000 PPM, PCB's greater than 2 PPM, or any other material classified as hazardous waste by 40 CFR part 261, Subparts C and D (implementing the Federal Resource Conservation and Recovery Act) or by any other state or local hazardous waste classification program. Should Laboratory tests find this product not in compliance with 40 CFR part 261 customer agrees to pay all disposal costs incurred.

Signed X _____ DATE: 09/08/16

RECEIVED SEP 21 2016

RECEIVING RECORD

ORRCO
Oil Re-Refining Company

Head Office
4150 N. Suttle Rd.
Portland, OR 97217
1-800-367-8894

R 01-16-0920-002

Received From:
Anderson Environmental
705 Colorado
Kelso WA 98626
EPA# ORQ000005355
Phone: 360-577-9194
Customer ID# ***9315***
Driver: Matt

Receiving Location: Plant #
FPI
4150 N. Suttle Road
Portland, OR 97217

Phone 503-286-8352
EPA# ORD980975692

Date	Terms	Written By	Sales Rep.	Page
09/20/16	-0-	Laureano		***1*** of ***1***

Line	Qty.	Unit	Item	%H20	Manifest #	B/L#	Net Qty
1	*1*	*Each*	*Clor-D-Tect Kit 4000* Generator ID# 0 See Comments				
			Total Each 1.				
2	*200*	*Gal.*	*Emulsified Fuel* Generator ID# 0 See Comments profile attached, Beaver Tank Farm, 81566 Kallunki Rd, Claskanie OR.	*25 %*			
			Total Gal. 200.				

Customer warrents that the waste petroleum products being received do not contain any contaminants including, without limitation, pesticides, chlorinated solvents at total concentrations greater than 1000 PPM, PCB's greater than 2 PPM, or any other material classified as hazardous waste by 40 CFR part 261, Subparts C and D (implementing the Federal Resource Conservation and Recovery Act) or by any other state or local hazardous waste classification program. Should Laboratory tests find this product not in compliance with 40 CFR part 261 customer agrees to pay all disposal costs incurred.

Signed X _____ DATE: 09/20/16

PNW METAL RECYCLING LLC

3500 HOEHNE AVE
LONGVIEW, WA 98632
Phone: 360-353-3939

SCALE RECEIVER

******NEW RECEIVING HOURS*******
MON-FRI 7:00AM TO 4:00PM

Recv Date: 10/20/2016
Receiver #: 110343
Control #: 110343
TIME IN: 10:35
TIME OUT: 13:05

Account: AEC
705 COLORADO ST
KELSO WA 98626

x_____
Initials

Commodity	Description	Gross	Tare	Deduct	Net	Price	UM	Amount
UNP	UNPREPARED IRON	40,900	30,740		10,160	115.00 /	NT	584.20
Comment: PGE-CLATSKANIE BL#0810		**IN:** 10/20/2016 10:36:07 AM		**OUT:** 10/20/2016 10:45:47 AM				
				Totals	10,160			584.20

PAYMENT
CHECK BOA 15205

Declaration of Seller

I, the undersigned, hereby declare that the property that is subject to this transaction is not, to the best of my knowledge, stolen property. I understand that this statement is made under penalty of perjury and may be used as evidence in court. I also certify that all appliances containing refrigerant are in compliance with EPA section 40 CFR Part 82, subpart F.

Employee's signature: _____

Accepted by: _____ **Date:** _____ ALM

Waste Control
1150 3rd Ave / 425-4302
Open 7:30 am - 5:30
Tax = Refuse Tax @ 3.6%

RECEIVED NOV 07 2016

Ticket: 1250443
Date: 10/31/2016
Time: 16:01:10 - 16:09:47

			Scale
Gross:	32780 lb	In	Scale A
Tare:	17760 lb	Out	Scale OUT1
Net:	15020 lb		

Truck: 59592RP
Customer: 2038806/Anderson Enviromenta
Truck Type: Public

PO: 16-078

Comment:

Materials & Services	Quantity	Unit	Rate	Amount
Concrete Brick Asphalt Under 3 Ft	7.51	TON		

Job #: 16-078	PM: KK
GL Code: 5130	Approved
Cost Type: D	Date
Voucher:	

Total Amount:

Driver:

Waste Control
1150 3rd Ave 425-4302
Open 7:30 am - 5:30
Tax = Refuse Tax @ 3.6%

RECEIVED NOV 07 2016

Ticket: 1249534
Date: 10/30/2016
Time: 07:48:16 - 07:58:27

			Scale
Gross:	24160 lb	In	Scale A
Tare:	17440 lb	Out	Scale OUT1
Net:	6720 lb		

Truck: 5[illegible]592RP
Customer: 2938806 Anderson Enviroments
Cash Add: CASH DEFAULT 000000 Truck Type: Public

PO: 16-078

Comment:

Materials & Services	Quantity	Unit	Rate	Amount
Concrete Brick Asphalt Larger than 3 Ft	3.36	TON		

Job #: 16-078	PM: KK
GL Code: 5130	Approved
Cost Type: D	Date
Voucher:	

Total Amount:

Driver:

Waste Control
1150 3rd Ave 425-4302
Open 7:30 am - 5:30
Tax = Refuse Tax @ 3.6%

RECEIVED NOV 07 2016

Ticket: 1250855
Date: 11/1/2016
Time: 16:03:15 - 16:10:51

			Scale
Gross:	21840 lb	In	Scale A
Tare:	18140 lb	Out	Scale OUT1
Net:	3700 lb		

Truck: 59592RP
Customer: 2136806/Anderson Enviromenta

Truck Type: Public

PO: 16-078

Comment:

Materials & Services	Quantity	Unit	Rate	Amount
Concrete Brick Asphalt Under 3 Ft	1.85	TON		

Job #: 16-078	PM: KKJ
GL Code: 5180	Approved
Cost Type: D	Date
Voucher:	

Total Amount:

Driver:

MM Daily Tonnage Report - Detail

Riverbend Landfill - S03302 (USA) 09/01/2016 12:00 AM - 11/16/2016 11:59 PM Operation Type: All

Customer: ANDERSONENV (ANDERSON ENVIRONMENTAL CONTRACTING LLC) - Ticket Type: All - Customer Type: All - PMT Category: All

Ticket Date	Time	Operator	Ticket	Customer	Carrier	Vehicle	Material	Tons
9/8/2016	10:53:18 AM	csedivec	1090490	ANDERSON ENVIRONMENTAL CONTRACTING LLC	JAMMIES ENVIRONMENTA	51	Cont Soil Pet-RGC-Tons	11.64
9/9/2016	1:11:12 PM	sVAUGHn1	1090834	ANDERSON ENVIRONMENTAL CONTRACTING LLC	JAMMIES ENVIRONMENTA	57	Cont Soil Pet-RGC-Tons	12.90
9/10/2016	7:42:16 AM	csedivec	1090929	ANDERSON ENVIRONMENTAL CONTRACTING LLC	JAMMIES ENVIRONMENTA	57	Cont Soil Pet-RGC-Tons	15.12
9/10/2016	1:16:29 PM	csedivec	1091086	ANDERSON ENVIRONMENTAL CONTRACTING LLC	JAMMIES ENVIRONMENTA	57	Cont Soil Pet-RGC-Tons	13.00
9/12/2016	11:19:40 AM	Svaughn1	1091311	ANDERSON ENVIRONMENTAL CONTRACTING LLC	JAMMIES ENVIRONMENTA	57	Cont Soil Pet-RGC-Tons	11.60
9/13/2016	10:08:03 AM	csedivec	1091605	ANDERSON ENVIRONMENTAL CONTRACTING LLC	JAMMIES ENVIRONMENTA	57	Cont Soil Pet-RGC-Tons	13.55
9/14/2016	9:18:01 AM	csedivec	1091897	ANDERSON ENVIRONMENTAL CONTRACTING LLC	JAMMIES ENVIRONMENTA	57	Cont Soil Pet-RGC-Tons	9.84
9/15/2016	8:35:43 AM	sVAUGHn1	1092161	ANDERSON ENVIRONMENTAL CONTRACTING LLC	JAMMIES ENVIRONMENTA	57	Cont Soil Pet-RGC-Tons	10.69
9/19/2016	2:02:35 PM	Svaughn1	1093272	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.05
9/20/2016	1:18:19 PM	csedivec	1093574	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.71
9/21/2016	10:54:32 AM	csedivec	1093782	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.73
9/21/2016	11:07:16 AM	csedivec	1093788	ANDERSON ENVIRONMENTAL CONTRACTING LLC	POTTER TRUCKING	56	Cont Soil Pet-RGC-Tons	35.77
9/21/2016	11:51:43 AM	csedivec	1093822	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	35.20
9/22/2016	7:00:45 AM	SVAUGHN1	1093948	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.14
9/22/2016	7:02:09 AM	SVAUGHN1	1093949	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	31.67
9/22/2016	10:44:49 AM	csedivec	1094036	ANDERSON ENVIRONMENTAL CONTRACTING LLC	POTTER TRUCKING	56	Cont Soil Pet-RGC-Tons	34.93
9/22/2016	1:31:39 PM	SVAUGHN1	1094110	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8525	Cont Soil Pet-RGC-Tons	32.21
9/22/2016	4:18:09 PM	csedivec	1094173	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.95
9/23/2016	11:16:58 AM	csedivec	1094330	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	30.81
9/23/2016	11:17:50 AM	csedivec	1094331	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	32.12
9/23/2016	11:19:12 AM	csedivec	1094332	ANDERSON ENVIRONMENTAL CONTRACTING LLC	POTTER TRUCKING	56	Cont Soil Pet-RGC-Tons	35.55
9/26/2016	11:09:02 AM	Svaughn1	1094852	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.92
9/26/2016	11:16:52 AM	Svaughn1	1094860	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	30.68
9/26/2016	11:32:05 AM	Svaughn1	1094871	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	31.48
9/27/2016	6:29:15 AM	Svaughn1	1095042	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	31.62
9/27/2016	6:30:49 AM	Svaughn1	1095043	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	30.28
9/27/2016	6:40:32 AM	Svaughn1	1095046	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.66
9/27/2016	2:10:33 PM	csedivec	1095283	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	30.89
9/27/2016	2:55:35 PM	csedivec	1095306	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.16

9/27/2016	2:58:09 PM	csedivec	1095308	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	31.22
9/28/2016	10:35:19 AM	csedivec	1095483	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	31.96
9/28/2016	11:00:20 AM	csedivec	1095498	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	32.09
9/28/2016	11:01:12 AM	csedivec	1095499	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	30.07
9/29/2016	6:26:50 AM	Svaughn1	1095664	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	33.54
9/29/2016	6:51:57 AM	Svaughn1	1095669	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.08
9/29/2016	7:00:50 AM	Svaughn1	1095673	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	30.97
9/29/2016	1:24:02 PM	csedivec	1095866	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	32.46
9/29/2016	2:59:53 PM	csedivec	1095914	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	32.44
9/29/2016	3:26:13 PM	csedivec	1095924	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	30.96
9/30/2016	10:47:25 AM	csedivec	1096090	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.56
9/30/2016	10:48:19 AM	csedivec	1096091	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	32.51
9/30/2016	11:33:05 AM	csedivec	1096121	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	32.67
10/1/2016	8:32:02 AM	csedivec	1096324	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	31.75
10/3/2016	6:50:24 AM	Svaughn1	1096559	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	32.45
10/3/2016	7:22:36 AM	Svaughn1	1096574	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	30.86
10/3/2016	11:12:40 AM	Svaughn1	1096695	ANDERSON ENVIRONMENTAL CONTRACTING LLC	SINES	7	Cont Soil Pet-RGC-Tons	30.85
10/3/2016	11:13:59 AM	Svaughn1	1096696	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8527	Cont Soil Pet-RGC-Tons	29.92
10/3/2016	11:18:20 AM	Svaughn1	1096697	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8534	Cont Soil Pet-RGC-Tons	31.63
10/3/2016	2:44:43 PM	Svaughn1	1096805	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	31.14
10/3/2016	3:00:05 PM	Svaughn1	1096812	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	30.94
10/4/2016	5:57:01 AM	Svaughn1	1096840	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8527	Cont Soil Pet-RGC-Tons	31.52
10/4/2016	5:59:49 AM	Svaughn1	1096842	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8534	Cont Soil Pet-RGC-Tons	31.88
10/4/2016	6:09:29 AM	Svaughn1	1096855	ANDERSON ENVIRONMENTAL CONTRACTING LLC	SINES	7	Cont Soil Pet-RGC-Tons	32.24
10/4/2016	11:20:06 AM	csedivec	1096962	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	32.43
10/4/2016	11:35:52 AM	csedivec	1096972	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.62
10/4/2016	12:28:02 PM	csedivec	1096999	ANDERSON ENVIRONMENTAL CONTRACTING LLC	SINES	7	Cont Soil Pet-RGC-Tons	33.88
10/4/2016	12:30:07 PM	csedivec	1097002	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8534	Cont Soil Pet-RGC-Tons	31.58
10/4/2016	12:31:43 PM	csedivec	1097005	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	32.19
10/4/2016	12:39:54 PM	csedivec	1097008	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8527	Cont Soil Pet-RGC-Tons	31.45
10/5/2016	6:45:50 AM	Svaughn1	1097133	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	31.70
10/5/2016	6:50:41 AM	Svaughn1	1097135	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	32.29
10/5/2016	7:26:39 AM	Svaughn1	1097145	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.08
10/5/2016	10:55:46 AM	csedivec	1097213	ANDERSON ENVIRONMENTAL CONTRACTING LLC	SINES	7	Cont Soil Pet-RGC-Tons	32.19

10/5/2016	10:57:45 AM	csedivec	1097215	ANDERSON ENVIRONMENTAL CONTRACTING LLC	SINES	6	Cont Soil Pet-RGC-Tons	34.22
10/5/2016	11:20:39 AM	csedivec	1097233	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8534	Cont Soil Pet-RGC-Tons	32.45
10/5/2016	11:24:53 AM	csedivec	1097237	ANDERSON ENVIRONMENTAL CONTRACTING LLC	CELORIE	19	Cont Soil Pet-RGC-Tons	30.91
10/5/2016	12:50:35 PM	csedivec	1097274	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8508	Cont Soil Pet-RGC-Tons	30.34
10/5/2016	12:51:51 PM	csedivec	1097275	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	31.68
10/5/2016	1:46:06 PM	sVAUGHn1	1097307	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	30.86
10/5/2016	2:13:02 PM	csedivec	1097317	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8507	Cont Soil Pet-RGC-Tons	31.76
10/6/2016	6:16:30 AM	Svaughn1	1097362	ANDERSON ENVIRONMENTAL CONTRACTING LLC	CELORIE	19	Cont Soil Pet-RGC-Tons	32.79
10/6/2016	7:07:19 AM	Svaughn1	1097372	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8534	Cont Soil Pet-RGC-Tons	31.11
10/6/2016	7:16:25 AM	Svaughn1	1097376	ANDERSON ENVIRONMENTAL CONTRACTING LLC	SINES	7	Cont Soil Pet-RGC-Tons	31.10
10/6/2016	7:17:56 AM	Svaughn1	1097377	ANDERSON ENVIRONMENTAL CONTRACTING LLC	SINES	6	Cont Soil Pet-RGC-Tons	34.49
10/7/2016	12:38:40 PM	Svaughn1	1097736	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	30.99
10/7/2016	1:42:45 PM	csedivec	1097760	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8520	Cont Soil Pet-RGC-Tons	30.36
10/7/2016	1:43:48 PM	csedivec	1097761	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8517	Cont Soil Pet-RGC-Tons	31.09
10/10/2016	1:32:13 PM	csedivec	1098222	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8527	Cont Soil Pet-RGC-Tons	30.64
10/10/2016	2:50:00 PM	csedivec	1098257	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	32.14
10/10/2016	3:03:57 PM	csedivec	1098262	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8727	Cont Soil Pet-RGC-Tons	32.95
10/11/2016	10:37:29 AM	csedivec	1098420	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8527	Cont Soil Pet-RGC-Tons	31.90
10/11/2016	10:46:25 AM	csedivec	1098424	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8727	Cont Soil Pet-RGC-Tons	32.24
10/11/2016	11:09:19 AM	csedivec	1098431	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	30.92
10/18/2016	11:32:04 AM	csedivec	1099667	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8527	Cont Soil Pet-RGC-Tons	32.26
10/18/2016	11:53:46 AM	csedivec	1099675	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8727	Cont Soil Pet-RGC-Tons	29.90
10/19/2016	6:21:48 AM	Svaughn1	1099790	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8727	Cont Soil Pet-RGC-Tons	32.45
10/19/2016	6:33:13 AM	Svaughn1	1099794	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8527	Cont Soil Pet-RGC-Tons	31.85
10/19/2016	10:36:58 AM	csedivec	1099876	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8508	Cont Soil Pet-RGC-Tons	32.59
10/19/2016	10:37:44 AM	csedivec	1099877	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8506	Cont Soil Pet-RGC-Tons	31.94
10/19/2016	10:55:51 AM	csedivec	1099882	ANDERSON ENVIRONMENTAL CONTRACTING LLC	POTTER TRUCKING	56	Cont Soil Pet-RGC-Tons	35.06
10/19/2016	11:00:52 AM	csedivec	1099883	ANDERSON ENVIRONMENTAL CONTRACTING LLC	EMBURY	66	Cont Soil Pet-RGC-Tons	31.99
10/19/2016	12:33:24 PM	csedivec	1099925	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8727	Cont Soil Pet-RGC-Tons	32.04
10/19/2016	12:36:30 PM	csedivec	1099928	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8527	Cont Soil Pet-RGC-Tons	30.31
10/20/2016	6:42:00 AM	Svaughn1	1100046	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	31.45
10/20/2016	6:43:07 AM	Svaughn1	1100047	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8506	Cont Soil Pet-RGC-Tons	32.66
10/20/2016	7:25:16 AM	Svaughn1	1100061	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8728	Cont Soil Pet-RGC-Tons	31.00
10/20/2016	10:39:04 AM	csedivec	1100124	ANDERSON ENVIRONMENTAL CONTRACTING LLC	POTTER TRUCKING	56	Cont Soil Pet-RGC-Tons	34.73

10/20/2016	10:39:49 AM	csedivec	1100125	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8527	Cont Soil Pet-RGC-Tons	30.68
10/20/2016	10:43:12 AM	csedivec	1100126	ANDERSON ENVIRONMENTAL CONTRACTING LLC	EMBURY	66	Cont Soil Pet-RGC-Tons	33.11
10/20/2016	11:15:12 AM	csedivec	1100137	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8727	Cont Soil Pet-RGC-Tons	33.13
10/20/2016	11:39:09 AM	csedivec	1100154	ANDERSON ENVIRONMENTAL CONTRACTING LLC	CELORIE	19	Cont Soil Pet-RGC-Tons	33.16
10/20/2016	11:42:03 AM	csedivec	1100155	ANDERSON ENVIRONMENTAL CONTRACTING LLC	CELORIE	11	Cont Soil Pet-RGC-Tons	31.49
10/20/2016	1:04:16 PM	csedivec	1100193	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8526	Cont Soil Pet-RGC-Tons	33.26
10/20/2016	1:05:09 PM	csedivec	1100194	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8506	Cont Soil Pet-RGC-Tons	32.06
10/20/2016	2:13:48 PM	kthompso	1100223	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8728	Cont Soil Pet-RGC-Tons	30.12
10/21/2016	6:17:27 AM	SVAughN1	1100270	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8527	Cont Soil Pet-RGC-Tons	30.51
10/21/2016	6:27:53 AM	SVAughN1	1100272	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8727	Cont Soil Pet-RGC-Tons	34.48
10/21/2016	10:41:58 AM	kthompso	1100361	ANDERSON ENVIRONMENTAL CONTRACTING LLC	POTTER TRUCKING	56	Cont Soil Pet-RGC-Tons	35.17
10/21/2016	11:30:08 AM	kthompso	1100386	ANDERSON ENVIRONMENTAL CONTRACTING LLC	CELORIE	11	Cont Soil Pet-RGC-Tons	31.40
10/21/2016	11:40:25 AM	kthompso	1100392	ANDERSON ENVIRONMENTAL CONTRACTING LLC	CELORIE	23	Cont Soil Pet-RGC-Tons	36.87
10/21/2016	11:59:17 AM	kthompso	1100400	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8533	Cont Soil Pet-RGC-Tons	28.16
10/21/2016	1:04:10 PM	SVAughN1	1100433	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8527	Cont Soil Pet-RGC-Tons	31.03
10/21/2016	1:05:03 PM	SVAughN1	1100434	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8727	Cont Soil Pet-RGC-Tons	30.56
10/21/2016	1:10:05 PM	SVAughN1	1100439	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8728	Cont Soil Pet-RGC-Tons	30.87
10/24/2016	10:46:02 AM	Svaughn1	1100800	ANDERSON ENVIRONMENTAL CONTRACTING LLC	POTTER TRUCKING	56	Cont Soil Pet-RGC-Tons	33.74
10/24/2016	11:08:23 AM	csedivec	1100816	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8527	Cont Soil Pet-RGC-Tons	30.46
10/24/2016	11:44:58 AM	csedivec	1100837	ANDERSON ENVIRONMENTAL CONTRACTING LLC	OREGON BOYS TRUCKING	19	Cont Soil Pet-RGC-Tons	32.85
10/24/2016	11:47:36 AM	csedivec	1100839	ANDERSON ENVIRONMENTAL CONTRACTING LLC	FAT DADDY	3	Cont Soil Pet-RGC-Tons	34.57
10/24/2016	11:54:14 AM	csedivec	1100843	ANDERSON ENVIRONMENTAL CONTRACTING LLC	DIETRICH	8506	Cont Soil Pet-RGC-Tons	30.86
10/24/2016	12:12:11 PM	csedivec	1100853	ANDERSON ENVIRONMENTAL CONTRACTING LLC	OREGON BOYS TRUCKING	20	Cont Soil Pet-RGC-Tons	32.78
11/10/2016	1:00:13 PM	csedivec	1104387	ANDERSON ENVIRONMENTAL CONTRACTING LLC	AEC	X51	Cont Soil Pet-RGC-Tons	9.77

PGE Beaver Project Total: 3,689.25
Profile 122609OR **Tons**

APPENDIX E

Micro-Pile Installation Summary and Survey

McDowell NW Pile King, Inc.
HELICAL PILE INSTALLATION RECORD

Customer:	Anderson Environmental Contracting (AEC)		**Soils Engineer:**	Amec Foster Wheeler	
Job Name:	PGE Beaver Tank Farm Underpin		**Helical Pile Capacity:**	10.5 kips	
Date Completed:	See Remarks for Completion Dates		**Drill Motor Model:**	6k5	eskridge
Piles installed by:	Jesse, Don Jr. (See Remarks)				***AREA D***

Anchor #	Lead Shaft Diameter	Helix Config.	Extension Shaft Diameter	Lead + Extension Lengths (feet)	Overall Length	Length Less Cut Off	PSI Pin - Pout	Torque (ft-lbs) Approx.	Degree of Inclination	Remarks
1	1.5"	6"x8"	2.875"	5+5+10	20	18	1150	2944	0	9/15/16 Jesse
2	1.5"	6"x8"	2.875"	5+5+10	20	20	1100	2816	0	9/15/16 Jesse
3	1.5"	6"x8"	2.875"	5+5+10	20	17	1100	2816	0	9/15/16 Jesse
4	1.5"	6"x8"	2.875"	5+5+10	20	18	1150	2944	0	9/15/16 Jesse
5	1.5"	6"x8"	2.875"	5+5+10	20	18	1100	2816	0	9/15/16 Jesse
6	1.5"	6"x8"	2.875"	5+5+10	20	19	1150	2944	0	9/15/16 Jesse
7	1.5"	6"x8"	2.875"	5+5+10	20	17	1100	2816	0	9/15/16 Jesse
8	1.5"	6"x8"	2.875"	5+7+10	22	21	1100	2816	0	9/15/16 Jesse
9	1.5"	6"x8"	2.875"	5+5+10	20	20.5	1100	2816	0	9/15/16 Jesse
10	1.5"	6"x8"	2.875"	5+7+10	22	19	1100	2816	0	9/19/16 Jesse
11	1.5"	6"x8"	2.875"	5+5+10	20	17	1050	2688	0	9/19/16 Jesse
12	1.5"	6"x8"	2.875"	5+5+10	20	17	1050	2688	0	9/19/16 Jesse
13	1.5"	6"x8"	2.875"	5+5+10	20	17	1050	2688	0	9/15/16 Jesse
14	1.5"	6"x8"	2.875"	5+5+5+5	20	16	1150	2944	0	9/14/16 Don Jr.
15	1.5"	6"x8"	2.875"	5+5+5+5	20	16	1050	2688	0	9/14/16 Don Jr.
16	1.5"	6"x8"	2.875"	5+10+5	20	17	1100	2816	0	9/14/16 Don Jr.
17	1.5"	6"x8"	2.875"	5+10+5	20	17	1000	2560	0	9/14/16 Don Jr.
18	1.5"	6"x8"	2.875"	5+5+10	20	18	1050	2688	0	9/14/16 Don Jr.
19	1.5"	6"x8"	2.875"	5+5+10	20	19	1150	2944	0	9/20/16 Don Jr.
20	1.5"	6"x8"	2.875"	5+5+10	20	18	1050	2688	0	9/14/16 Don Jr.
21	1.5"	6"x8"	2.875"	5+5+10	20	18	1100	2816	0	9/19/16 Jesse
22	1.5"	6"x8"	2.875"	5+5+10	20	20	1100	2816	0	9/19/16 Jesse
23	1.5"	6"x8"	2.875"	5+5+10	20	19	1100	2816	0	9/19/16 Jesse
24	1.5"	6"x8"	2.875"	5+5+10	20	18	1100	2816	0	9/19/16 Jesse
25	1.5"	6"x8"	2.875"	5+7+10	22	20	1100	2816	0	9/19/16 Jesse

Subtotal: Pile Footage Installed This Page 506 LF

PIN (PIPE) PILE FOUNDATION * RETAINING WALLS * MANTA RAY EARTH ANCHORS * HELICALS
18905 84TH AVENUE SOUTH, KENT, WA 98032 (425) 251-8535 FAX (425) 251-5940
Portland (503) 283-8920 Web: www.pileking.com

McDowell NW Pile King, Inc.
HELICAL PILE INSTALLATION RECORD

Customer:	Anderson Environmental Contracting (AEC)						**Soils Engineer:**		Amec, Foster, Wheeler	
Job Name:	PGE Beaver Tank Farm Underpin						**Helical Pile Capacity:**		10.5 Kips	
Date Completed:	See Remarks for Completion Dates						**Drill Motor Model:**		**6K5**	Eskridge
Piles installed by:	Terry, Don Jr., Jesse									***AREA D***
Anchor #	**Lead Shaft Diameter**	**Helix Config.**	**Extension Shaft Diameter**	**Lead + Extension Lengths**	**Overall Length**	**Length Less Cut Off**	**PSI Pin - Pout**	**Torque (ft-lbs) Approx.**	**Degree of Inclination**	**Remarks**
26	1.5"	6"x8"	2.875"	5+5+10	20	20	950	2432	0	9/16/16 Jesse
27	1.5"	6"x8"	2.875"	5+5+10	20	17	1100	2816	0	9/16/16 Jesse
28	1.5"	6"x8"	2.875"	5+5+10	20	17	1000	2560	0	9/16/16 Don Jr.
29	1.5"	6"x8"	2.875"	5+5+10	20	17	1050	2688	0	9/16/16 Don Jr.
30	1.5"	6"x8"	2.875"	5+5+10	20	19	1150	2944	0	9/20/16 Don Jr.
31	1.5"	6"x8"	2.875"	5+5+10	20	19	1150	2944	0	9/20/16 Don Jr.
32	1.5"	6"x8"	2.875"	5+5+10	20	17	1200	3072	0	9/12/16 Terry
33	1.5"	6"x8"	2.875"	5+5+10	20	16.5	1200	3072	0	9/12/16 Terry
34	1.5"	6"x8"	2.875"	5+5+10	20	18	1050	2688	0	9/21/16 Don Jr.
35	1.5"	6"x8"	2.875"	5+10+5	20	16	1100	2816	0	9/13/16 Terry
36	1.5"	6"x8"	2.875"	5+10+5	20	18	1050	2688	0	9/20/16 Don Jr.
37	1.5"	6"x8"	2.875"	5+10+5	20	15.5	1150	2944	0	9/13/16 Terry
38	1.5"	6"x8"	2.875"	5+10+5	20	16	1100	2816	0	9/12/16 Terry
39	1.5"	6"x8"	2.875"	5+10+5	20	15.5	1200	3072	0	9/12/16 Terry
40	1.5"	6"x8"	2.875"	5+5+5	15	13	1100	2816	0	9/13/16 Terry
41	1.5"	6"x8"	2.875"	5+5+5+5	20	15	1100	2816	0	9/13/16 Terry
42	1.5"	6"x8"	2.875"	5+5+10	20	16	1000	2560	0	9/20/16 Don Jr.
43	1.5"	6"x8"	2.875"	5+10+5	20	16	1100	2816	0	9/12/16 Terry
44	1.5"	6"x8"	2.875"	5+10+5	20	16	1100	2816	0	9/12/16 Terry
45	1.5"	6"x8"	2.875"	5+10+5	20	16	1100	2816	0	9/12/16 Terry
46	1.5"	6"x8"	2.875"	5+10+5	20	17	1100	2816	0	9/12/16 Terry
47	1.5"	6"x8"	2.875"	5+10+5	20	16.5	1100	2816	0	9/12/16 Terry
48	1.5"	6"x8"	2.875"	5+5+10+7	27	22	1150	2944	0	9/21/16 Don Jr.
49	1.5"	6"x8"	2.875"	5+10+5	20	16	1100	2816	0	9/13/16 Terry

Subtotal: Pile Footage Installed This Page 482 LF

PIN (PIPE) PILE FOUNDATION * RETAINING WALLS * MANTA RAY EARTH ANCHORS * HELICALS
18905 84TH AVENUE SOUTH, KENT, WA 98032 (425) 251-8535 FAX (425) 251-5940
Portland (503) 283-8920 Web: www.pileking.com

McDowell NW Pile King, Inc.
HELICAL PILE INSTALLATION RECORD

Customer:		Anderson Environmental Contracting (AEC)					**Soils Engineer:**		Amec, Foster, Wheeler	
Job Name:		PGE Beaver Tank Farm Underpin					**Helical Pile Capacity:**		10.5 Kips	
Date Completed:		See Remarks for Completion Dates					**Drill Motor Model:**		**6K5**	Eskridge
Piles installed by:		Terry, Don Jr., Jesse (See Remarks)								***AREA C***
Anchor #	**Lead Shaft Diameter**	**Helix Config.**	**Extension Shaft Diameter**	**Lead + Extension Lengths**	**Overall Length**	**Length Less Cut Off**	**PSI Pin - Pout**	**Torque (ft-lbs) Approx.**	**Degree of Inclination**	**Remarks**
50	1.5"	6"x8"	2.875"	5+5+10	20	20	1100	2816	0	9/22/16 Jesse
51	1.5"	6"x8"	2.875"	5+5+10	20	19.5	1050	2688	0	9/22/16 Jesse
52	1.5"	6"x8"	2.875"	5+5+10	20	20	1100	2816	0	9/22/16 Jesse
53	1.5"	6"x8"	2.875"	5+5+10	20	16.5	1100	2816	0	9/22/16 Jesse
54	1.5"	6"x8"	2.875"	5+5+10	20	18	1150	2944	0	9/22/16 Jesse
55	1.5"	6"x8"	2.875"	5+5+10	20	18	1150	2944	0	9/22/16 Jesse
56										eliminated
57	1.5"	6"x8"	2.875"	5+5+10	20	18	1100	2816	0	9/22/16 Jesse
58	1.5"	6"x8"	2.875"	5+5+10	20	18	1100	2816	0	9/22/16 Jesse
59	1.5"	6"x8"	2.875"	5+5+10	20	16	1150	2944	0	9/22/16 Jesse
60	1.5"	6"x8"	2.875"	5+10+5	20	16	1300	3328	0	9/14/16 Terry
61	1.5"	6"x8"	2.875"	5+10+5	20	15.5	1100	2816	0	9/13/16 Terry
62	1.5"	6"x8"	2.875"	5+10+5	20	16	1100	2816	0	9/14/16 Don Jr.
63	1.5"	6"x8"	2.875"	5+10+5	20	15.5	1200	3072	0	9/14/16 Don Jr.
64	1.5"	6"x8"	2.875"	5+10+5	20	16	1200	3072	0	9/14/16 Don Jr.
65										eliminated
66	1.5"	6"x8"	2.875"	5+10+5	20	16.5	1100	2816	0	9/13/16 Terry
67	1.5"	6"x8"	2.875"	5+10+5	20	15.5	1100	2816	0	9/13/16 Terry
68	1.5"	6"x8"	2.875"	5+10+5	20	17.5	1100	2816	0	9/13/16 Don Jr.
69	1.5"	6"x8"	2.875"	5+10+5	20	17	1150	2944	0	9/13/16 Terry
70	1.5"	6"x8"	2.875"	5+10+5	20	16	1200	3072	0	9/13/16 Don Jr.
71	1.5"	6"x8"	2.875"	5+10+5	20	16	1200	3072	0	9/13/16 Don Jr.
72	1.5"	6"x8"	2.875"	5+5+10+7	27	16	1100	2816	0	9/13/16 Terry
73	1.5"	6"x8"	2.875"	5+10+5	20	16	1200	3072	0	9/13/16 Terry

Subtotal: Pile Footage Installed This Page 447 LF

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Portland (503) 283-8920 Web: www.pileking.com

McDowell NW Pile King, Inc.
HELICAL PILE INSTALLATION RECORD

Customer:	Anderson Environmental Contracting (AEC)						**Soils Engineer:**		Amec, Foster, Wheeler	
Job Name:	PGE Beaver Tank Farm Underpin						**Helical Pile Capacity:**		10.5 Kips	
Date Completed:	See Remarks for Completion Dates						**Drill Motor Model:**		**6K5**	Eskridge
Piles installed by:	Jesse									***AREA B-2***
Anchor #	**Lead Shaft Diameter**	**Helix Config.**	**Extension Shaft Diameter**	**Lead + Extension Lengths**	**Overall Length**	**Length Less Cut Off**	**PSI Pin - Pout**	**Torque (ft-lbs) Approx.**	**Degree of Inclination**	**Remarks**
74										Eliminated
75										Eliminated
76	1.5"	6"x8"	2.875"	5+7+7	19	18	1150	2944	0	9/23/16 Jesse
77	1.5"	6"x8"	2.875"	5+5+7+5	22	20	1250	3200	0	9/23/16 Jesse
78	1.5"	6"x8"	2.875"	5+5+7	17	17	1150	2944	0	9/23/16 Jesse
79	1.5"	6"x8"	2.875"	5+5+10	20	20	1100	2816	0	9/23/16 Jesse
80	1.5"	6"x8"	2.875"	5+5+10+7	27	27	1200	3072	0	9/23/16 Jesse
81	1.5"	6"x8"	2.875"	5+5+10+7	27	24	1250	3200	0	9/23/16 Jesse
82	1.5"	6"x8"	2.875"	5+7+7	19	17.5	1100	2816	0	9/23/16 Jesse
83	1.5"	6"x8"	2.875"	5+7+7	19	16.5	1150	2944	0	9/23/16 Jesse
84	1.5"	6"x8"	2.875"	5+5+10	20	18	1100	2816	0	9/23/16 Jesse
85	1.5"	6"x8"	2.875"	5+5+10	20	17	1100	2816	0	9/22/16 Jesse
86	1.5"	6"x8"	2.875"	5+10+5	20	20	1150	2944	0	9/16/16 Jesse
87	1.5"	6"x8"	2.875"	5+10+5	20	17	1250	3200	0	9/16/16 Jesse
88	1.5"	6"x8"	2.875"	5+10+5	20	17	1150	2944	0	9/16/16 Jesse
89	1.5"	6"x8"	2.875"	5+10+5	20	17	1150	2944	0	9/16/16 Jesse
90	1.5"	6"x8"	2.875"	5+10+5	20	17	1250	3200	0	9/16/16 Jesse
91	1.5"	6"x8"	2.875"	5+10+5	20	17	1300	3328	0	9/16/16 Jesse

Subtotal: Pile Footage Installed This Page 330 LF

PIN (PIPE) PILE FOUNDATION * RETAINING WALLS * MANTA RAY EARTH ANCHORS * HELICALS
18905 84TH AVENUE SOUTH, KENT, WA 98032 (425) 251-8535 FAX (425) 251-5940
Portland (503) 283-8920 Web: www.pileking.com

Project: PGE Beaver - Tank Farm Soil Remediation
Project #: 6-61M-132960-04

Footing Elevation Survey Work

Area D

amec foster wheeler

Date: 10/26/2016
Start Time: 9:00
End Time: 10:30

Amec FW Personnel: Jason Gardner
Survey Team: Bill McFarland

Area D final survey				Area C final survey				Area B final survey			
Survey Location By Pile #	Initial Survey Elevation	10/26/2016 9:00	Deviation	Survey Location By Pile #	Initial Survey Elevation	10/26/2016 9:42	Deviation	Survey Location By Pile #	Initial Survey Elevation	10/26/2016 10:10	Deviation
P-1	13.46	NM	**NA**	P-50, 51	13.06	13.05	**0.01**	P-90-91	13.08	13.08	**0**
P-2	14.68	14.67	**0.01**	P-52	13.05	13.04	**0.01**	P-84	13.8	13.8	**0**
P-3	14.69	14.67	**0.02**	P-53, 54	13.03	13.03	**0**	P-88, 89	13.76	13.76	**0**
P-4, P-5	13.46	13.45	**0.01**	P-55, 56	15.56	15.56	**0**	P-77, 78	13.77	13.76	**0.01**
P-6, P-7	13.46	13.45	**0.01**	P-58	13.05	13.05	**0**	Bench	13.92	5.05	8.87
P-8, P-9	13.47	13.47	**0**	P-62, 63	13.08	13.08	**0**				
P-10	13.47	13.44	**0.03**	P-66, 67	13.04	13.04	**0**				
P-11	13.48	13.47	**0.01**	P-68	12.3	12.28	**0.02**				
P-12	13.45	13.43	**0.02**	P-69	12.36	12.35	**0.01**				
P-13	13.47	13.45	**0.02**	P-70	15.56	15.56	**0**				
P-14	14.71	14.69	**0.02**	P-71	15.58	15.58	**0**				
P-15	14.72	14.69	**0.03**	P-72	12.3	12.3	**0**				
P-16, P-17	13.43	13.42	**0.01**	P-73	12.31	12.31	**0**				
P-18, P-19	13.44	13.41	**0.03**	Bench	13.92	5.01	**8.91**				
P-20, P-21	13.46	13.44	**0.02**								
P-24, P-25	13.46	13.44	**0.02**								
P-40, P-41	13.45	13.44	**0.01**								
P-42, P-43	13.46	13.44	**0.02**								
P-44, P-45	13.45	13.44	**0.01**								
P-46, P-47	13.45	13.45	**0**								
P-48, P-49	13.47	13.44	**0.03**								
Bench	14.18	5.3	**8.88**								

Notes:

NM = Not measured. Piles and footings that have not been excavated adjacent to or close by.

APPENDIX F

Bioremediation Amendment Safety Data Sheets

3830 S Truman Rd. Bldg. 12
Washougal, Washington 98671
(971) 222-3903 Fax
www.etecllc.com

Safety Data Sheet

Revision Date: 05/19/2015

Section 1: Product and Company Identification

Product Name: **EZT-EA™**
MSDS Number: 016
Chemical Name: Mixture
Chemical Family: Ethoxylated surfactant mixture

Recommended Use: Biosurfactant
Restrictions on Use: No Data

Company: ETEC, LLC
3830 S Truman Rd. Bldg. 12
Washougal, WA 98671
USA

Telephone: (971) 222-3616

Emergency Telephone: (800) 535-5053
Medical Emergencies: (800) 301-7976
U.S. Coast Guard National Response Center: (800) 424-8802

Section 2: Hazards Identification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious Eye Damage	Category 1

Label Elements:

Signal Word: Danger

Hazard Statements:

Causes serious eye damage.

Precautionary Statements:

Wash face and hands thoroughly after handling.
Wear protective gloves/ eye protection/ face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/ physician.
Collect spillage.
Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS - none

Section 3: Composition/Information on Ingredients

Ingredients as defined by 29 CFR 1910.1200:

Chemical Ingredients:	CAS Number:	Percent Range:
Trade Secret	-	30-40%

The specific chemical identity and/or exact percentage of the composition has been withheld as Trade Secret in accordance with paragraph (i) of §1910.1200.

Section 4: First Aid Measures

Description of first aid measures:

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration.

Skin Contact: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water.

Most important symptoms and effects, both acute and delayed: See sections 2 and/or 11.

Indication of any immediate medical attention and special treatment needed: No data available.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media: Use any means suitable for extinguishing surrounding fire.

Unsuitable Extinguishing Media: No known information.

Specific Hazards Arising from the chemical/substance: Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products: Phosphorus oxides. Sodium oxides. Carbon Oxides.

Protective Equipment and Precautions for Fire-Fighters: As in any fire, wear self-contained breathing apparatus and full protective gear.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation. Do not breathe dust/fume/gas/mist/vapors/spray.

Environmental Precautions: Do not flush to surface water. See section 12 for further environmental data.

Methods for Containment/Cleaning Up: Soak up with non-combustible absorbent. Pick up and transfer to properly labeled containers. Ventilate area and wash spill site after material pickup is complete.

Section 7: Handling and Storage

Precautions for Safe Handling: Avoid breathing mists or vapors. Use only in a well-ventilated area. Wash thoroughly after handling. Keep out of reach of children. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities:

> **Storage:** Keep in tightly closed container, store in a cool, dry, ventilated place. Store at temperatures not exceeding 130°F (54°C).

Section 8: Exposure Controls/Personal Protection

Exposure Limits: There are no OSHA PEL's, NIOSH REL's, or ACGIH TLV's applicable to this material.

Engineering Controls: Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment:

> **Eye Protection:** Wear appropriate eye protection/face protection.
>
> **Hand Protection:** Wear appropriate protective gloves.
>
> **Skin and Body Protection:** Wear appropriate protective clothing to prevent skin exposure. Take off contaminated clothing and wash before reuse.
>
> **Respiratory Protection:** Use only in a well-ventilated area. Avoid breathing dust. Wear appropriate NIOSH approved respirator if exposure limits are exceeded or irritation occurs.

Hygiene Measures: Wash thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.

Section 9: Physical and Chemical Properties

Appearance/Physical State:	Liquid
Color:	Clear to slightly hazy tan color
Odor:	Slight to none
Odor Threshold:	Not Available
pH:	6.5
Melting/Freezing Point:	Not Available
Initial Boiling Point:	Not Available
Flash Point:	Not Available
Evaporation Rate:	1.20
Flammability (solid, gas):	Not Available
Lower Explosive Limit:	Not Available
Upper Explosive Limit:	Not Available
Vapor Pressure:	Not Available
Vapor Density:	Not Available
Relative Density:	1.00
Solubility:	Complete solubility in water
Partition Coefficient:	Not Available
Autoignition Temperature:	Not Available
Decomposition Temperature:	Not Available

Section 10: Stability and Reactivity

Reactivity: No information available.

Stability: Stable under ordinary conditions of use and storage.

Possibility of hazardous reactions: No information available.

Conditions to Avoid: Extremes in temperature and direct sunlight.

Incompatible Materials: Strong oxidizing agents, strong acids.

Hazardous Decomposition Products: Other decomposition products - No data available. In case of fire: see section 5.

Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

Information on Likely Routes of Exposure:

Inhalation: No information available.
Ingestion: No information available.
Skin Contact: No information available.
Eye Contact: Risk of serious damage to eyes.

Toxicity Data:

Chemical Name	LD50 ORAL	LD50 DERMAL	LC50 INHALATION
Trade Secret	No data	No data	No data

Symptoms: No information available.

Delayed and Immediate Effects, Chronic Effects from Short and Long Term Exposure:

Sensitization:	No information available.
Mutagenic Effects:	No information available.
Reproductive Toxicity:	No information available.
STOT – Single Exposure:	No information available.
STOT – Repeated Exposure:	No information available.
Aspiration Hazard:	No information available.
Chronic Exposure:	No information available.
Aggravation of Pre-existing Conditions:	No information available.

Carcinogenicity:

Component	CAS	NTP	IARC	OSHA
Trade Secret	N/A	Not listed	Not listed	Not listed

Additional Information: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Section 12: Ecological Information

Ecotoxicity:

This product is safe for the environment at the concentrations predicted under normal use conditions.

Persistance and Degradability: No information available.

Bioaccumulative Potential: No information available.

Mobility in Soil: No information available.

Other Adverse Effects: No information available.

Section 13: Disposal Considerations

Dispose of contents/container in accordance with all applicable local, state and federal regulations.

Section 14: Transport Information

For Transportation Emergencies Involving This Material, Call:
ChemTrec 1-800-424-9300 Company Code: E419

DOT (LAND): Not regulated.

Section 15: Regulatory Information

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Hazard Categories:

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

State Right-to-Know:

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Trade Secret	-	X	X	-	-

TSCA: Not Applicable

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16: Other Information

NFPA Rating:

Health Hazard:	1
Fire:	0
Reactivity Hazard:	0

Legend:

ACGIH: American Conference of Governmental & Industrial Hygienists
CAS: Chemical Abstract Service
CFR: Code of Federal Regulations
DOT: Department of Transportation
DSL/NDSL: Domestic Substances List/Non-Domestic Substances List
IARC: International Agency for the Research of Cancer
IATA: International Air Traffic Association
ICAO: International Civil Aviation Organization
IMDG: International Maritime Dangerous Goods
IMO: International Maritime Organizations
NFPA: National Fire Protection Association Health, Flammability & Reactivity; Hazard Scale 0 =minimal/none 4= significant
NTP: National Toxicology Program
OSHA: Occupational Safety & Health Administration
PEL: Permissible Exposure Limits
RCRA: Resource Conservation & Recovery Act
RQ: Reportable Quantity
RTK: Right-To-Know
SARA: Superfund Amendments & Reauthorization Act
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substances Control Act
TWA: Time Weighted Average

TCLP: Toxicity Characteristic Leaching Procedure
VOC: Volatile Organic Compounds

Disclaimer: The information contained in this SDS is presented in good faith and believed to be accurate based on the information provided. The SDS does not purport to be all inclusive, and shall be used only as a guide. While ETEC, LLC believes that the data contained herein comply with 29 CFR 1910.1200, they are not to be taken as a warranty or representation for which ETEC, LLC assumes legal responsibility. ETEC, LLC shall not be held liable or accountable for any loss or damage associated with the use of this material and information. The recommended industrial hygiene and safe use, handling, storage, and disposal procedures are believed to be generally applicable. However, since the use, handling, storage, and disposal are beyond ETEC, LLC control, it is the responsibility of the user both to determine safe conditions for use of this product and to assume liability of loss, damage, or expense arising out of the material's improper use.

3830 S. Truman St., Bldg 12
Washougal, WA 98671
(971) 222-3903 Fax
www.etecllc.com

Safety Data Sheet

Revision Date: 09/30/2013

Section 1: Product and Company Identification

Product Name: **CBN™ Custom-Blend Nutrients**
MSDS Number: 014
Chemical Name: Inorganic Nutrient Mixture
Chemical Family: Mixed Nutrient

Recommended Use: Microbial Nutrient
Restrictions on Use: No Data

Company: ETEC, LLC
3830 S. Truman St., Bldg. 12
Washougal, WA 98671
USA

Telephone: (971) 222-3616

Emergency Telephone: (800) 535-5053
Medical Emergencies: (800) 301-7976
U.S. Coast Guard National Response Center: (800) 424-8802

Section 2: Hazards Identification

Emergency Overview:

May cause fire or explosion; strong oxidizer. May be harmful if swallowed or inhaled. Causes skin irritation and eye irritation. May cause respiratory irritation.

NFPA Rating:

Health Hazard:	0
Fire:	0
Reactivity Hazard:	3
Other:	Oxidizer

Section 3: Composition/Information on Ingredients

Ingredients as defined by 29 CFR 1910.1200:

Chemical Ingredients:	CAS Number:	Percent Range:
Ammonium Nitrate	6484-52-2	60 – 80%
Phosphate Salt		20 – 30%
Non-hazardous Component		5%

Section 4: First Aid Measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Skin Contact: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion: Do NOT induce vomiting. Give large quantities of water to drink. Immediately call a poison center or doctor/physician.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media: Use flooding amounts of water in early stages of fire involving ammonium nitrate for extinction. Use any means suitable for extinguishing surrounding fire.

Specific Hazards in Case of Fire: May cause fire or explosion; strong oxidizer. May support combustion in an existing fire. Contact with oxidizable substances may cause extremely violent combustion. Sealed containers may rupture when heated. Sensitive to mechanical impact. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Special Protective Equipment for Fire-Fighters: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Section 6: Accidental Release Measures

Personal Precautions: Eliminate all ignition sources and heat sources if safe to do so.

Environmental Precautions: Prevent spill material from entering waterways and groundwater, if possible.

Methods for Containment/Cleaning Up: Collect spillage. Collected waste may be transferred to a closed, preferably metal container and sent to a RCRA approved waste disposal facility. Alternatively, sweep spill into noncombustible container and dissolve in large amount of water. Add soda ash. Mix and neutralize with 6M-HCl. Neutralized sludge may be sent to an approved waste disposal facility.

Section 7: Handling and Storage

Handling: Keep away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store away from clothing and other combustible materials. Store at temperatures not exceeding 130°F (54°C), preferably not exceeding 86°F (30°C).

Section 8: Exposure Controls/Personal Protection

Exposure Limits:

Chemical Ingredients:	CAS Number:	OSHA PEL	NIOSH REL	ACGIH TLV
Ammonium Nitrate	6484-52-2	None Established	None Established	None Established
Phosphate Salt		None Established	None Established	None Established
Non-hazardous Component		None Established	None Established	None Established

Engineering Controls: Use only outdoors or in a well-ventilated area.

Personal Protective Equipment:

Eye Protection: Wear eye protection/face protection.

Hand Protection: Wear protective gloves.

Skin and Body Protection: Wear impervious clothing, boots, gloves as appropriate to prevent skin contact.

Respiratory Protection: Avoid breathing dust. Use only outdoors or in a well-ventilated area. If exposure to dust is possible, use a NIOSH approved respirator.

Hygiene Measures: Keep away from clothing and other combustible materials. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling.

Section 9: Physical and Chemical Properties

Physical State: Crystals, granules
Color: White
Odor: Odorless
Odor Threshold: Not Available
pH: 7.0
Melting/Freezing Point: 338°F (170°C)
Initial Boiling Point: 410°F (210°C) Decomposes
Flash Point: Not Available
Evaporation Rate: Not Available
Flammability (solid, gas): Not Available
Lower Explosive Limit: Not Available

Upper Explosive Limit:	Not Available
Vapor Pressure:	Not Available
Vapor Density:	Not Available
Relative Density:	1.73 @ 77°F (23°C)
Solubility:	118 g/100 g water @ 32°F (0°C)
Partition Coefficient:	Not Available
Autoignition Temperature:	Not Available
Decomposition Temperature:	Not Available

Section 10: Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage. Hygroscopic.

Conditions to Avoid: Heat, flame, ignition sources, dusting and incompatibles. Moisture and combustible materials. Shock sensitive.

Incompatible Materials: Aluminum, antimony, chromium, copper, iron, lead, magnesium, manganese, nickel, zinc, brass, oil, charcoal, organic material, acetic acid, ammonium chloride, bismuth, cadmium, chlorides, cobalt, phosphorus, potassium and ammonium sulfate, sodium, sodium hypochlorite, sodium perchlorate, sodium-potassium alloy, and sulfides.

Hazardous Decomposition Products: Emits nitrous oxides when heated to decomposition. Liberates ammonia in reaction with strong alkalis.

Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

Inhalation: May cause respiratory irritation. At high temperatures, exposure to toxic nitrogen oxides decomposition products can quickly cause acute respiratory problems. Inhalation of large amounts causes systemic acidosis and abnormal hemoglobin.

Ingestion: Harmful if swallowed. Large oral doses of nitrates may cause dizziness, abdominal pain, vomiting, bloody diarrhea, weakness, convulsions, and collapse. May cause methemoglobinemia resulting in cyanosis.

Skin Contact: Causes skin irritation.

Eye Contact: Causes eye irritation.

Chronic Exposure: Small repeated oral doses of nitrates may cause weakness, depression, headache, and mental impairment.

Aggravation of Pre-existing Conditions: No information found.

Numerical Measures of Toxicity: Oral rat LD50: 2217 mg/kg (for ammonium nitrate)

Carcinogenicity: Not known to be as defined by OSHA, IARC or NTP (for ammonium nitrate).

Section 12: Ecological Information

Mobility in Soil: When released into soil, this material is expected to leach into groundwater. When released into the soil, this material is not expected to evaporate significantly.

Persistence: When released into water, this material is expected to readily biodegrade.

Section 13: Disposal Considerations

Dispose of contents/container in accordance with all applicable local, state and federal regulations.

Section 14: Transport Information

For Transportation Emergencies Involving This Material, Call:
ChemTrec 1-800-424-9300
Company Code: E249

DOT (LAND):

Proper Shipping Name:	AMMONIUM NITRATE
Hazard Class:	5.1
UN Number:	UN2067
Packing Group:	III
Placards:	Oxidizer
DOT Hazardous Substance RQ:	None/no reportable quantities
DOT Marine Pollutants:	None/no reportable quantities

Section 15: Regulatory Information

OSHA Hazards: Strong oxidizer, skin irritant, eye irritant, respiratory irritant

SARA 302: None/no reportable quantities.

SARA 311/312 Hazard Categories: Acute Health Hazard, Reactive Hazard

SARA 313: Nitrate compounds are subject to the reporting requirements of SARA 313. Additionally, water dissociable ammonia salts are subject to the reporting requirements of SARA 313 when placed in water.

TSCA: All substances in this product are listed on the TSCA inventory.

Section 16: Other Information

The information contained in this MSDS is presented in good faith and believed to be accurate based on the information provided. The MSDS does not purport to be all inclusive, and shall be used only as a guide. While ETEC, LLC believes that the data contained herein comply with 29 CFR 1910.1200, they are not to be taken as a warranty or representation for which ETEC, LLC assumes legal responsibility.

ETEC, LLC shall not be held liable or accountable for any loss or damage associated with the use of this material and information. The recommended industrial hygiene and safe use, handling, storage, and disposal procedures are believed to be generally applicable. However, since the use, handling, storage, and disposal are beyond ETEC, LLC control, it is the responsibility of the user both to determine safe conditions for use of this product and to assume liability of loss, damage, or expense arising out of the material's improper use.

Legend:

ACGIH: American Conference of Governmental & Industrial Hygienists
CAS: Chemical Abstract Service
CFR: Code of Federal Regulations
DOT: Department of Transportation
DSL/NDSL: Domestic Substances List/Non-Domestic Substances List
IARC: International Agency for the Research of Cancer
IATA: International Air Traffic Association
ICAO: International Civil Aviation Organization
IMDG: International Maritime Dangerous Goods
IMO: International Maritime Organizations
NFPA: National Fire Protection Association
Health, Flammability & Reactivity; Hazard Scale 0 =minimal/none 4= significant
NTP: National Toxicology Program
OSHA: Occupational Safety & Health Administration
PEL: Permissible Exposure Limits
RCRA: Resource Conservation & Recovery Act
RQ: Reportable Quantity
RTK: Right-To-Know
SARA: Superfund Amendments & Reauthorization Act
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substances Control Act
TWA: Time Weighted Average
TCLP: Toxicity Characteristic Leaching Procedure
VOC: Volatile Organic Compounds

3830 S Truman Rd. Bldg. 12
Washougal, WA 98671
(971) 222-3903 Fax
www.etecllc.com

Safety Data Sheet

Revision Date: 05/19/2015

Section 1: Product and Company Identification

Product Name:	**EZT-A2**
MSDS Number:	010
Chemical Name:	Not Applicable – Biological Material
Chemical Family:	Not Applicable – Biological Material
Recommended Use:	Petroleum Hydrocarbon Degradation
Restrictions on Use:	No Data
Company:	ETEC, LLC 3830 S Truman Rd. Bldg. 12 Washougal, WA 98671 USA
Telephone:	(971) 222-3616

Emergency Telephone:	(800) 535-5053
Medical Emergencies:	(800) 301-7976
U.S. Coast Guard National Response Center:	(800) 424-8802

Section 2: GHS Hazards Identification

This chemical is not *considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)*

Label Elements: Not a hazardous substance or mixture.

Hazards not otherwise classified (HNOC) or not covered by GHS - none

Section 3: Composition/Information on Ingredients

No ingredients are hazardous according to OSHA criteria.
No components need to be disclosed according to the applicable regulations.

Section 4: First Aid Measures

Description of first aid measures:

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. Call a poison center or doctor/physician if victim feels unwell.

Skin Contact: Wash skin with plenty of water.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water.

Most important symptoms and effects, both acute and delayed: See sections 2 and/or 11.

Indication of any immediate medical attention and special treatment needed: No data available.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media: Use extinguishing medium suitable for surrounding material.

Unsuitable Extinguishing Media: No known information.

Specific Hazards Arising from the chemical/substance: None known.

Hazardous Combustion Products: None known.

Protective Equipment and Precautions for Fire-Fighters: As in any fire, wear self-contained breathing apparatus and full protective gear.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation. Do not breathe dust/fume/gas/mist/vapors/spray.

Environmental Precautions: Do not flush into surface water. See section 12 for further environmental data.

Methods for Containment/Cleaning Up: Contain spillage and collect with non-combustible absorbent material. Pick up and transfer to properly labeled containers. Ventilate area and wash spill site after material pickup is complete.

Section 7: Handling and Storage

Precautions for Safe Handling: Do not breathe vapors/dust. Handle in accordance with good industrial hygiene and safety practice. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Keep out of reach of children.

Conditions for safe storage, including any incompatibilities:

Storage: Keep containers tightly closed in a dry, cool and well-ventilated place. Store at temperatures not exceeding 70°F (20°C).

Section 8: Exposure Controls/Personal Protection

Exposure Limits: There are no OSHA PEL's, NIOSH REL's, or ACGIH TLV's applicable to this material.

Engineering Controls: Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment:

Eye Protection: Wear appropriate eye protection/face protection.

Hand Protection: Wear appropriate protective gloves.

Skin and Body Protection: Wear appropriate protective clothing to prevent skin exposure. Take off contaminated clothing and wash before reuse.

Respiratory Protection: Use only in a well-ventilated area. Avoid breathing dust. Wear appropriate NIOSH approved respirator if exposure limits are exceeded or irritation occurs.

Hygiene Measures: Wash thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.

Section 9: Physical and Chemical Properties

Appearance/Physical State:	Liquid
Color:	Brown/Tan
Odor:	Slightly Sour Odor
Odor Threshold:	Not Available
pH:	Not Available
Melting/Freezing Point:	Not Available
Initial Boiling Point:	212°F (100°C)
Flash Point:	Not Available
Evaporation Rate:	1.00
Flammability (solid, gas):	Not Applicable
Lower Explosive Limit:	Not Available
Upper Explosive Limit:	Not Available
Vapor Pressure:	18 mm Hg at 75°F (24°C)
Vapor Density:	Not Available
Relative Density:	1.00
Solubility:	Completely soluble in water
Partition Coefficient:	Not Available
Autoignition Temperature:	Not Available
Decomposition Temperature:	Not Available

Section 10: Stability and Reactivity

Reactivity: No information available.

Stability: Stable under ordinary conditions of use and storage.

Conditions to Avoid: None identified.

Incompatible Materials: None identified.

Hazardous Decomposition Products: Other decomposition products – No data available. In case of fire: see section 5.

Hazardous Polymerization: Will Not Occur

Section 11: Toxicological Information

Information on Likely Routes of Exposure:

Inhalation: No information available.
Ingestion: No information available.
Skin Contact: No information available.
Eye Contact: No information available.

Toxicity Data:

Chemical Name	LD50 ORAL	LD50 DERMAL	LC50 INHALATION
Non-hazardous component	No data	No data	No data

Symptoms: No information available.

Delayed and Immediate Effects, Chronic Effects from Short and Long Term Exposure:

Sensitization: No information available.
Mutagenic Effects: No information available.
Reproductive Toxicity: No information available.
STOT – Single Exposure: No information available.
STOT – Repeated Exposure: No information available.
Aspiration Hazard: No information available.
Chronic Exposure: No information available.
Aggravation of Pre-existing Conditions: No information available.

Carcinogenicity:

Component	CAS	NTP	IARC	OSHA
Non-hazardous component	N/A	Not listed	Not listed	Not listed

Additional Information: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Section 12: Ecological Information

Ecotoxicity:

This product is safe for the environment at the concentrations predicted under normal use conditions.

Persistence and Degradability: No information available.

Bioaccumulative Potential: No information available.

Mobility in Soil: No information available.

Other Adverse Effects: No information available.

Section 13: Disposal Considerations

Dispose of contents/container in accordance with all applicable local, state and federal regulations.

Section 14: Transport Information

For Transportation Emergencies Involving This Material, Call:
ChemTrec 1-800-424-9300 Company Code: E419

DOT (LAND): Not regulated

Section 15: Regulatory Information

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Hazard Categories:

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

State Right-to-Know:

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Non-hazardous Component	-	-	-	-	-

TSCA: Not Applicable

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16: Other Information

NFPA Rating:

Health Hazard: 1
Fire: 0
Reactivity Hazard: 0

Legend:

ACGIH: American Conference of Governmental & Industrial Hygienists
CAS: Chemical Abstract Service
CFR: Code of Federal Regulations
DOT: Department of Transportation
DSL/NDSL: Domestic Substances List/Non-Domestic Substances List
IARC: International Agency for the Research of Cancer
IATA: International Air Traffic Association
ICAO: International Civil Aviation Organization
IMDG: International Maritime Dangerous Goods
IMO: International Maritime Organizations
NFPA: National Fire Protection Association Health, Flammability & Reactivity; Hazard Scale 0 =minimal/none 4= significant
NTP: National Toxicology Program
OSHA: Occupational Safety & Health Administration
PEL: Permissible Exposure Limits
RCRA: Resource Conservation & Recovery Act
RQ: Reportable Quantity
RTK: Right-To-Know
SARA: Superfund Amendments & Reauthorization Act
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substances Control Act
TWA: Time Weighted Average
TCLP: Toxicity Characteristic Leaching Procedure
VOC: Volatile Organic Compounds

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APPENDIX G

Restoration Documentation

BENTOMAT® ST

GEOSYNTHETIC CLAY LINER

BENTOMAT ST CERTIFIED PROPERTIES			
MATERIAL PROPERTY	TEST METHOD	TEST FREQUENCY $ft^2(m^2)$	REQUIRED VALUES
Bentonite Swell Index[1]	ASTM D 5890	1 per 50 tonnes	24 ml/2g min.
Bentonite Fluid Loss[1]	ASTM D 5891	1 per 50 tonnes	18 ml max.
Bentonite Mass/Area[2]	ASTM D 5993	40,000 ft^2 (4,000 m^2)	0.75 lb/ft^2 (3.6 kg/m^2) min
GCL Grab Strength[3]	ASTM D 6768	200,000 ft^2 (20,000 m^2)	30 lbs/in (53 N/cm) MARV
GCL Peel Strength[3]	ASTM D 6496	40,000 ft^2 (4,000 m^2)	3.5 lbs/in (6.1 N/cm) min
GCL Index Flux[4]	ASTM D 5887	Weekly	1 x 10^{-8} m^3/m^2/sec max
GCL Hydraulic Conductivity[4]	ASTM D 5887	Weekly	5 x 10^{-9} cm/sec max
GCL Hydrated Internal Shear Strength[5]	ASTM D 5321 ASTM D 6243	Periodic	500 psf (24 kPa) typ @ 200 psf

Bentomat ST is a reinforced GCL consisting of a layer of sodium bentonite between a woven and a nonwoven geotextiles, which are needlepunched together.

Notes

[1] Bentonite property tests performed at a bentonite processing facility before shipment to CETCO's GCL production facilities.

[2] Bentonite mass/area reported at 0 percent moisture content.

[3] All tensile strength testing is performed in the machine direction using ASTM D 6768. All peel strength testing is performed using ASTM D 6496. Upon request, tensile and peel results can be reported per modified ASTM D 4632 using 4 inch grips.

[4] Index flux and permeability testing with deaired distilled/deionized water at 80 psi (551kPa) cell pressure, 77 psi (531 kPa) headwater pressure and 75 psi (517 kPa) tailwater pressure. Reported value is equivalent to 925 gal/acre/day. This flux value is equivalent to a permeability of 5x10^{-9} cm/sec for typical GCL thickness. Actual flux values vary with field condition pressures. The last 20 weekly values prior the end of the production date of the supplied GCL may be provided.

[5] Peak values measured at 200 psf (10 kPa) normal stress for a specimen hydrated for 48 hours. Site-specific materials, GCL products, and test conditions must be used to verify internal and interface strength of the proposed design.

CETCO has developed an edge enhancement system that eliminates the need to use additional granular sodium bentonite within the overlap area of the seams. We call this edge enhancement, SuperGroove™, and it comes standard on both longitudinal edges of Bentomat® ST. It should be noted that SuperGroove™ does not appear on the end-of-roll overlaps and recommend the continued use of supplemental bentonite for all end-of-roll seams.

TR 401-BMST 5/07

North America: 847.851.1800 | 800.527.9948 | www.CETCO.com

TDS_BENTOMATST_AM_EN_201402_v1

PGE Beaver
Material Import - Dietrich

Date	Ticket #	Truck Number	Tonage	Column1	Column2	Column3
9/20/2016	5050078		30.51	RIP RAP		
9/27/2016	149974	8526	32.00	Sand	Dietrich	Kynsi Pit
9/27/2016	149014	8533	32.00	Sand	Dietrich	Kynsi Pit
9/27/2016	148061	8507	32.00	Sand	Dietrich	Kynsi Pit
9/28/2016	149015	8533	32.00	Sand	Dietrich	Kynsi Pit
9/28/2019	148062	8507	32.00	Sand	Dietrich	Kynsi Pit
9/28/2016	149975	8526	32.00	Sand	Dietrich	Kynsi Pit
9/28/2016	149975	8526	32.00	Sand	Dietrich	Kynsi Pit
9/29/2016	149016	8533	37.98	Sand	Dietrich	Kynsi Pit
9/29/2016	148063	8507	32.00	Sand	Dietrich	Kynsi Pit
9/29/2016	149976	8526	32.00	Sand	Dietrich	Kynsi Pit
9/30/2016	149977	8526	33.50	Sand	Dietrich	Kynsi Pit
9/30/2016	148064	8507	31.00	Sand	Dietrich	Kynsi Pit
9/30/2016	149017	8533	33.82	Sand	Dietrich	Kynsi Pit
10/6/2016	149419	8534	27.40	Sand	Dietrich	Kynsi Pit
10/6/2016	149419	8534	31.65	Sand	Dietrich	Kynsi Pit
10/6/2016	149419	8534	31.85	Sand	Dietrich	Kynsi Pit
10/6/2016	148068	8507	31.00	Sand	Dietrich	Kynsi pit
10/6/2016	148068	8507	31.50	Sand	Dietrich	Kynsi Pit
10/6/2016	148068	8507	30.75	Sand	Dietrich	Kynsi Pit
10/6/2016	148068	8507	31.75	Sand	Dietrich	Kynsi Pit
10/10/2016	120374	6 AEC	20.17	3/4" BF	Teevin Bros	
10/10/2016	120376	6AEC	19.93	3/4" BF	Teevin Bros	
10/10/2016	221	8527	31.80	Sand	Dietrich	Kynsi Pit
10/10/2016	221	8902	33.00	Sand	Dietrich	Kynsi Pit
10/10/2016	223	8533	32.30	Sand	Dietrich	Kynsi Pit
10/10/2016	224	8533	34.60	Sand	Dietrich	Kynsi Pit
10/10/2016	222	727	32.00	Sand	Dietrich	Kynsi Pit
10/10/2016	222	727	32.00	Sand	Dietrich	Kynsi Pit
10/11/2016	226		31.25	Sand		Kynsi Pit
10/11/2016	225	8727	32.00	Sand	Dietrich	Kynsi Pit
10/11/2016	227	8533	31.85	Sand	Dietrich	Kynsi Pit
10/12/2016	149298	8727	32.00	Sand	Dietrich	Kynsi Pit
10/12/2016	149298	8727	32.00	Sand	Dietrich	Kynsi Pit
10/12/2016	149298	8727	32.00	Sand	Dietrich	Kynsi Pit
10/12/2016	149298	8727	31.21	3/4" Rock	Dietrich	
10/12/2016	149804	8532	31.67	Sand	Dietrich	Kynsi Pit
10/12/2016	149804	8532	31.80	Sand	Dietrich	Kynsi Pit
10/12/2016	149804	8532	32.00	Sand	Dietrich	Kynsi Pit
10/12/2016	149804	8532	32.02	5/8" Rock	Dietrich	
10/12/2016	439902		31.21	5/8 Rock	JL Storedahl	
10/12/2016	439904		32.02	5/8 Rock	JL Storedahl	
10/13/2016	439932	26	29.44	5/8" Rock	JL Storedahl	
10/13/2016	439943	26	29.76	1/2-3/4"	JL Storedahl	
10/13/2016	439955	26	30.47	1/2-3/4"	JL Storedahl	
10/13/2016	439961	26	30.43	1/2-3/4"	JL Storedahl	
10/13/2016	439963		33.10	1/2-3/4"	JL Storedahl	
10/13/2016	439931		32.54	1/2-3/4"	JL Storedahl	
10/13/2016	439953		32.56	1/2-3/4"	JL Storedahl	
10/13/2016	439942	60	32.52	1/2-3/4"	JL Storedahl	
10/13/2016	439958		33.01	1/2-3/4"	JL Storedahl	
10/13/2016	154456	8527	32.00	Sand	Dietrich	Kynsi Pit
10/13/2016	149299	8727	32.00	Sand	Dietrich	Kynsi Pit
10/14/2016	439985	26	29.01	1/2-3/4" BF	JL Storedahl	
10/14/2016	439971	26	30.03	1/2-3/4" BF	JL Storedahl	
10/14/2016	439994	26	30.36	1/2-3/4" BF	JL Storedahl	
10/17/2016	154460	8527	32.00	Sand	Dietrich	Kynsi Pit
10/17/2016	154460	8527	32.00	Sand	Dietrich	Kynsi Pit
10/17/2016	154460	8527	32.00	Sand	Dietrich	Kynsi Pit
10/17/2016	154460	8527	32.00	Sand	Dietrich	Kynsi Pit
10/17/2016	154460	8527	32.00	Sand	Dietrich	Kynsi Pit
10/17/2016	155102	8727	32.50	Sand	Dietrich	Kynsi Pit
10/17/2016	155102	8727	31.80	Sand	Dietrich	Kynsi Pit
10/17/2016	155102	8727	33.00	Sand	Dietrich	Kynsi Pit
10/17/2016	155102	8727	32.00	Sand	Dietrich	Kynsi Pit
10/17/2016	155102	8727	32.00	Sand	Dietrich	Kynsi Pit
10/18/2016	155103	8727	32.00	Sand	Dietrich	Kynsi Pit
10/18/2016	235	8527	32.00	Sand	Dietrich	Kynsi Pit
10/18/2016	1095184		15.00	Backfill Imp		CalPDX
10/18/2016	1095205		15.00	Backfill Imp		CalPDX
10/26/2016	149028	8533	35.30	Sand	Dietrich	Kynsi Pit
10/26/2016	149028	8533	31.45	Sand	Dietrich	Kynsi Pit
10/26/2016	149028	8533	34.50	Sand	Dietrich	Kynsi Pit
10/26/2016	149028	8533	30.20	Sand	Dietrich	Kynsi Pit
10/26/2016		8527	34.50	Sand	Dietrich	Kynsi Pit
10/26/2016		8527	31.54	Sand	Dietrich	Kynsi Pit
10/26/2016		8527	31.00	Sand	Dietrich	Kynsi Pit
10/26/2016		8527	31.80	Sand	Dietrich	Kynsi Pit
10/26/2016		8527	30.09	Sand	Dietrich	Kynsi Pit
10/26/2016	154266	8532	29.48	Sand	Dietrich	Kynsi Pit
10/26/2016	154266	8532	29.68	Sand	Dietrich	Kynsi Pit
10/26/2016	154266	8532	33.53	Sand	Dietrich	Kynsi Pit

10/26/2016	154266	8532	31.63	Sand	Dietrich	Kynsi Pit
10/26/2016	154266	8532	31.43	Sand	Dietrich	Kynsi Pit
10/27/2016		8527	34.25	Sand	Dietrich	Kynsi Pit
10/27/2016		8527	31.07	Sand	Dietrich	Kynsi Pit
10/27/2016		8532	32.68	Sand	Dietrich	Kynsi Pit
10/27/2016		8532	31.18	Sand	Dietrich	Kynsi Pit
10/27/2016		8532	32.43	Sand	Dietrich	Kynsi Pit
10/27/2016		8532	32.43	Sand	Dietrich	Kynsi Pit
10/27/2016		8532	31.18	Sand	Dietrich	Kynsi Pit
11/1/2016	154475	8527	31.30	Sand	Dietrich	Kynsi Pit
10/17/2016	440010	60	32.13	1/2-3/4"	JL Storedahl	
10/17/2016	440017	60	32.66	1/2-3/4"	JL Storedahl	
10/17/2016	440031	60	31.37	1/2-3/4"	JL Storedahl	
10/17/2016	440042	60	31.55	1/2-3/4	JL Storedahl	
10/17/2016	440054	60	32.72	1/2-3/4	JL Storedahl	
10/18/2016	440058	60	32.43	1/2-3/4"	JL Storedahl	
10/18/2016	440063	60	32.91	1/2-3/4"	JL Storedahl	
10/18/2016	440074	60	32.27	1/2-3/4"	JL Storedahl	
10/18/2016	440088	60	31.76	1/2-3/4"	JL Storedahl	
10/26/2016	440523	60	33.56	1/2-3/4"	JL Storedahl	
10/26/2016	440534	60	34.04	1/2-3/4"	JL Storedahl	
10/26/2016	440547	60	34.12	1/2-3/4"	JL Storedahl	
10/26/2016	440559	60	33.70	1/2-3/4"	JL Storedahl	
10/27/2016	440572	60	32.38	1/2-3/4"	JL Storedahl	
10/27/2016	440582	60	32.86	1/2-3/4"	JL Storedahl	
10/27/2016	440600	60	31.93	1/2-3/4"	JL Storedahl	
10/27/2016	440610	60	31.81	1/2-3/4"	JL Storedahl	
10/28/2016	440623	60	33.22	1/2-3/4"	JL Storedahl	
10/28/2016	440642	60	33.60	1/2-3/4"	JL Storedahl	
10/28/2016	440661	60	33.43	1/2-3/4"	JL Storedahl	
10/28/2016	440688	60	33.99	1/2-3/4"	JL Storedahl	
10/31/2016	440744	60	32.45	1/2-3/4"	JL Storedahl	
10/31/2016	440728	60	32.10	1/2-3/4"	JL Storedahl	
10/31/2016	440715	60	32.50	1/2-3/4"	JL Storedahl	
10/31/2016	440706	60	32.66	1/2-3/4"	JL Storedahl	
11/3/2016	440845	60	32.56	1/2-3/4"	JL Storedahl	
11/3/2016	44860	60	32.52	1/2-3/4"	JL Storedahl	
11/3/2016	440873	60	32.16	1/2-3/4"	JL Storedahl	

RECEIVED SEP 29 201

J.L. Storedahl & SONS

Invoice 196056

2233 Talley Way Kelso, WA 98626 (360) 636-2420
Rock Products, Grading & Excavating

Bill To:	Ship To:
ANDERSON ENVIRONMENTAL CO, LLC 705 COLORADO STREET KELSO, WA 98626-2311	ANDERSON ENVIRONMENTAL CO, LLC 705 COLORADO STREET KELSO, WA 98626-2311

Invoice #:	196056 Invoice date: 09/20/16	P.O.#:	PGE Clatsk
Payment terms:	NET 30 DAYS	Ship via:	
Customer code:	157	Salesperson:	

Remarks:

Quantity	U/M	Part Number	Description	Unit Cost	Extension
30.51	TN	67	3"-8"Crushed	14.000	427.14
5050078					
				Total:	**427.14**

Job #: 16-078	PM: KK
GL Code: 5320	Approved
Cost Type:	Date
Voucher: 42223	

Print Date: 09/29/16

J. L. Storedahl & Sons, Inc.

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE	TIME	TICKET NO.
9/20/2017	7:00:06 AM	5050078

CUSTOMER:	JOB:	TRUCK NO.	Type
15 Anderson Environmental Co LLC 705 Colorado St Kelso, WA 98626		1065DP	TT
		LICENSE: Dietrich 0507	

P.O. NO.	ZONE:	HAULED BY:
PGE Clatskanie		

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
67	3" 8" Crushed Freight	30.51 Ton	4.00 0.00	122.04 0.00

Loads:	Accum. Amount			
1	Ton	30.51	Gross: 41.01 Ton Tare: 20.50 Ton Net: 30.51 Ton	Subtotal 122.04 Tax 0.00 Total 122.04

LOCATION WHERE WEIGHED:	CARDINAL
WEIGHMASTER	Michael

RECEIVED BY: X

DRIVER ON: DRIVER OFF:

...ON 98661
...) 892-3881
Fax (360) 883-1898

Customer Acct No. 1660863 | Phone | Date 9/27/16

Sold To AEC / ~~CLAT~~ PGE

Address CLATSKANIE TO MCMINNVILLE

City

Driver ERIC | Truck & Trailer 8526 / 8903

Qty.	Description	Price	Amount
31.62	TONS CONT DIET # 1095042 P/L		
30.89	" " " # 1095283		
32 ton/L	LOAD SAND C 24 yds		
	1.75 HRS TRUCK/PUP TIME		
	9:30 - 11:15		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Rec'd By

Tax	
Total	

248115 / 4055211

149974

Thank You

...UCKING, LLC
...211-A NE 43rd Ave.
...ANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

...tomer's Order No. J060863
Phone
Date 9-27-16
Sold To Riverbend Landfill Job
Address PGE. - Beaver Plant
City

Driver Ron Maxam 8110
Truck & Trailer 8533-8910

Qty.	Description	Price	Amount
30.28	Sand T# 1095043		
31.22	Sand T# 1095308		
24 yrds	Sand From Kynsi Pit To PGE.		
32 tons	930-11 = 1.50 hours		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Rec'd By

Tax	
Total	

248115 / 4055211

149014

Thank You

- TRUCKING, LLC
7211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No. 160863
Sold To AEC - PGE Clatskanie Ore.
Phone
Address
Date 9-27-16
City Riverbend - McMinnville Ore. / Knzi Sand - Westport Ore.
Driver Rod Cox
Truck & Trailer 8507 - 8907

Qty.	Description	Price	Amount
31.66	Ton Cont. Soil Tick# 1095046		
31.16	Ton Cont. Soil Tick# 1095306		
24 yd 32 tons	Sand - Knzi Sand pit to PGE Stockpile 1015-1130 = 1.25		
	>		
	Not Responsible for Damage Behind Curb Line		
	Tax		
	Total		

All claims and returned goods MUST be accompanied by this bill.

Rec'd By

1115 / 4055211

148061

Thank You

CKING, LLC

-A NE 43rd Ave.
NCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No. 1160863

Sold To River bend Landfill Job#

Phone

Address

City

Date 9-28-16

PGE-Beaver Plant

Driver Ron Maxam 8110

Truck & Trailer 8533-8910

Qty.	Description	Price	Amount
30.07	Sand T#1095499		
24 yrds	Sand From Kynsi Pit		
32 tons	To PGE		
	2-300 = 1hr		
	>		

Not Responsible for Damage Behind Curb Line

All claims and returned goods MUST be accompanied by this bill.

Rec'd By

248115 / 4055211

149015

Tax	
Total	

Thank You

.ING, LLC
-.1-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No.	Phone	Date
1 Q68803		9/28/16

Sold To: AEC / PGE

Address: CLATSKANIE TO MCMINNVILLE

City: SAND FROM WESTPORT TO CLATSKANIE

Driver	Truck & Trailer
ERIC	8526 / 8903

Qty.	Description	Price	Amount
31.96	TONS CONT. DIRT # 1095183		
	2 LOADS SAND C 24yds		
	1:15 - 4:15 = 3		
	12 tons each		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Tax		
Total		

Rec'd By

248115 / 4055211

149975

Thank You

-CKING, LLC
·211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No. 1166863
Phone
Sold To AEC - PGE - Clatskanie area
Date 9-28-12
Address
City Riverbend - McMinnville area / Kuzi Sandpit - Westport area.
Driver Rod Cox
Truck & Trailer 8507 - 8407

Qty.	Description	Price	Amount
32.09	Ton Cont. Soil		
	Tic# 1095495		
24 yds	Sand - Kuzi Sand		
32 tons	To PGE Stockpile		
	245-400: 1.25		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Rec'd By

Tax

Total

248115 / 4055211

148062

Thank You

Fax (360) 883-1898

Customer's Order No. 1668863 | Phone

Sold To Riverbend Landfill Job | Date 9-29-16

Address PGE. - Beaver

City

Driver Ron Maxam 8110 | Truck & Trailer 8533-8910

Qty.	Description	Price	Amount
30.97	Sand T# 1095673		
32.44	Sand T# 1095914		
37.98	Sand From Kynsi Pit		
	To PGE.		
	10-1165- 1.25		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Rec'd By

Tax	
Total	

248115 / 4055211

149016

Thank You

...ve.
...ASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

No. 1668863

Sold To: AEC - PGE

Phone:

Date: 9-29-14

Address: Clackamas Ore.

City: Riverbend - McMinnville Ore / Kynsi Sand - Westport Ore.

Driver: Rod Cox

Truck & Trailer: 8907 - 8907

Qty.	Description	Price	Amount
31.08	Ton Cont. Soil		
	Tic# 1095669		
30.96	Ton Cont. Soil		
	Tic# 1095924		
32.00	Ton Sand - Kynsi Sandpit		
	To PGE		
	10-11: 155 1.25		
	>		
	Not Responsible for Damage Behind Curb Line		
	Claims and returned goods MUST be accompanied by this bill.		
		Tax	
		Total	

3063

Thank You

, LLC

TON 98661

-581

(360) 883-1898

Sold To 1008863 AEC / PGE

Phone

Address CLATSKANIE

City TO WILLAMINA / WESTPORT TO CLATSKANIE

Date 9/29/16

Driver ERIC

Truck & Trailer 8526 / 8903

Qty.	Description	Price	Amount
33.54	TONS CONT. DIRT # 1095664 P/L		
32.46	" " " # 1095866		
32.00	TONS SAND HAULED IN FROM WESTPORT 915-1015 = 1hr		

Not Responsible for Damage Behind Curb Line

All claims and returned goods MUST be accompanied by this bill.

Rec'd By

Tax

Total

248115 / 4055211

149976

Thank You

(360) 892-3881
Fax (360) 883-1898

Customer's Order No.	Phone	Date
1668863		9/30/16

Sold To: AEC / PGE

Address: CLATSKANIE TO MCMINNVILLE / WESTPORT TO CLATSKANIE

City:

Driver: ERIC

Truck & Trailer: 8526 / 8903

Qty.	Description	Price	Amount	
32.51	TONS CONT. DIRT			
	# 1096091			
33.50	TONS SAND			
	2-315 : 1.25			
	>			
	Not Responsible for Damage Behind Curb Line			

All claims and returned goods MUST be accompanied by this bill.

Tax			
Total			

Rec'd By

248115 / 4055211

149977

Thank You

...KING, LLC
...211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No. 160863
Phone
Date 9-30-16
Sold To AEC - PGE Clackamas Co.
Address
City Powerbeat - Milwaukie Ore. / Kypsi Sand - Westfarer Ore.

Driver Ted Cox
Truck & Trailer 8507 - 8907

Qty.	Description	Price	Amount
31.56	Ton Cont. Soil		
	Ticket 1096090		
31.00	Ton Sand - Kypsi Sand for		
	to PGE		
	230-4:00 = 1.5		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Rec'd By

Tax	
Total	

248115 / 4055211

148064

Thank You

DIETRICH TRUCKING, LLC
7211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

1660863	Phone	Date 9-30-16
Riverbend Landfill Job		PGE-Beaver

Driver	Truck & Trailer
Ron Maxam 8110	8533-8910

Qty.	Description	Price	Amount
32.67	Sand T# 1096121		
33.82	Sand From Kynsi Pit		
	To PGE		
	245-345= 1		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Tax		
Total		

Rec'd By

248115 / 4055211

149017

Thank You

No Lunch
Yard
DOT Log
CONTRACTING
DRIVE

...OKING, LLC

7211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No.	Phone	Date
166863		10-6-16

Sold To: ROBERSON ENVIRONMENTAL

Address: 8877 Kullunk Rd

City: CLATSKANIE, OR

Driver: MIKE BISHOP

Truck & Trailer: 8534. 8534

Qty.	Description	Price	Amount
	Sand From Kyngi Pit		
	to Roberson Environmental		
	1	27.40	tons
	2	31.65	tons
	3	31.85	tons
	10:15 – 6:15 = 8		
	-1/2 lunch		
	7.5		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Rec'd By

Tax	
Total	

248115 / 4055211

149419

Thank You

...ING, LLC

...-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No. 1668863	Phone	Date 10-6-16
Sold To AEC - PGE Clatskanie Okr.		
Address		
City Kynsi Sand — Westport Okr.		

Driver Rod Cox	Truck & Trailer 8507 - 8907

Qty.	Description	Price	Amount
31.00	Ton Sand - Kynsi	7.50	
31.50	Ton " "	10.25	
30.75	Ton " "	12.48	
31.75	Ton " "	3.10	
	Load at Kynsi Sand pit		
	Dump in hole at PGE		
	715 - 615 = 11		
	-½ lunch		
	10.50		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Rec'd By

Tax	
Total	

248115 / 4055211

148068

Thank You

16-078

Teevin Bros. Land & Timber Co.

42894 Old Hwy. 30
Astoria, OR 97103
Office (503) 458-6671
Fax (503) 458-6106

TEEVIN BROS. LAND & TIMBER LLC
42894 Old Hwy 30
Astoria, OR 97103
Phone: (503) 458-6671
Fax: (503) 458-6106

TICKET NO. : 120374
Date : 10/10/2016
Time : 09:09 AM

CUSTOMER:
Anderson Environmental

HAULER:
Anderson Environmental
Truck No. : 6

JOB INFORMATION:
Job No. :
Description:
Material : 3/4"-0 (0915) TFQ

JOB INFORMATION
Loads Today: 0
Qty. Today : 0

Gross	82360 lbs	41.18 Tons
Tare	42020 lbs	21.01 Tons
Net	40340 lbs	20.17 Tons

NOTES: 6028

Weighed by David

16-078

Teevin Bros. Land & Timber Co.

42894 Old Hwy. 30
Astoria, OR 97103
Office (503) 458-6671
Fax (503) 458-6106

TEEVIN BROS. LAND & TIMBER LLC
42894 Old Hwy 30
Astoria, OR 97103
Phone: (503) 458-6671
Fax: (503) 458-6106

TICKET NO. : 120376
Date : 10/10/2016
Time : 11:10 AM

CUSTOMER:
Anderson Environmental

HAULER:
Anderson Environmental
Truck No. : 6

JOB INFORMATION:
Job No. :
Description:
Material : 3/4"-0 (0915) TFQ

JOB INFORMATION
Loads Today: 0
Qty. Today : 0

Gross	81880 lbs	40.94 Tons
Tare	42020 lbs	21.01 Tons
Net	39860 lbs	19.93 Tons

NOTES: 6030

Weighed by David

KYNSI CONSTRUCTION, INC.

P O Box 836
14193 Midland District Road
Clatskanie, Oregon 97016
503-728-3251

CUSTOMER'S ORDER NO.	PHONE	DATE
		10-10-16

NAME
Dietrich / AEC

ADDRESS
Vancouver wa / Clatskanie OR

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT

QTY.	DESCRIPTION	PRICE	AMOUNT
31.80	Sand To PGE		
33.00	Beaver Plant		
	Dietrich		
	852J-890Z		
		TAX	
RECEIVED BY		TOTAL	

All claims and returned goods MUST be accompanied by this bill.

0221

THANK YOU

KYNSI CONSTRUCTION, INC.
P O Box 836
14193 Midland District Road
Clatskanie, Oregon 97016
503-728-3251

CUSTOMER'S ORDER NO.	PHONE	DATE 10-10-16

NAME PGE-Beaver Plant

ADDRESS

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT

QTY.	DESCRIPTION	PRICE	AMOUNT
	~~Sand~~		
32.30	Sand To PGE-Beaver Plant		
	Dietrich Trucking		
	8533-8910		
		TAX	
		TOTAL	

RECEIVED BY

All claims and returned goods MUST be accompanied by this bill.

0223

THANK YOU

KYNSI CONSTRUCTION, INC.
P O Box 836
14193 Midland District Road
Clatskanie, Oregon 97016
503-728-3251

CUSTOMER'S ORDER NO.	PHONE	DATE 10-10-16

NAME PGE-Beaver Plant-AEC

ADDRESS

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT

QTY.	DESCRIPTION	PRICE	AMOUNT
34.60	Tons Sand To PGE.		
	Dietrich Trucking		
	8533-8910		
		TAX	
		TOTAL	

RECEIVED BY

All claims and returned goods MUST be accompanied by this bill.

0224

THANK YOU

10 8-9 16

KYNSI CONSTRUCTION, INC.

P O Box 836
14193 Midland District Road
Clatskanie, Oregon 97016
503-728-3251

CUSTOMER'S ORDER NO.	PHONE	DATE
		10/10/16

NAME: Anderson Envirecmental

ADDRESS:

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT

QTY.	DESCRIPTION	PRICE	AMOUNT
32-T	Sand		
32-T	Sand		
	Truck & PP 0727-0817		
		TAX	
		TOTAL	

RECEIVED BY

All claims and returned goods MUST be accompanied by this bill.

0222

THANK YOU

KYNSI CONSTRUCTION, INC.

P O Box 836
14193 Midland District Road
Clatskanie, Oregon 97016
503-728-3251

CUSTOMER'S ORDER NO.	PHONE	DATE
		10-11-16

NAME AEC / ~~PGE~~

ADDRESS Clatskanie OR

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT

QTY.	DESCRIPTION	PRICE	AMOUNT
	Sand To PGE Plant		
31.25			
		TAX	
RECEIVED BY		TOTAL	

All claims and returned goods MUST be accompanied by this bill.

0226

THANK YOU

KYNSI CONSTRUCTION, INC.

P O Box 836
14193 Midland District Road
Clatskanie, Oregon 97016
503-728-3251

CUSTOMER'S ORDER NO.	PHONE	DATE
		10/11/16

NAME: Anderson Environmental

ADDRESS: PGE Beaver Generating Plant
Truck 8222 / 8910

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT

QTY.	DESCRIPTION	PRICE	AMOUNT
32.00	Sand		
		TAX	
		TOTAL	

RECEIVED BY

All claims and returned goods MUST be accompanied by this bill.

0225

THANK YOU

KYNSI CONSTRUCTION, INC.

P O Box 836
14193 Midland District Road
Clatskanie, Oregon 97016
503-728-3251

CUSTOMER'S ORDER NO.	PHONE	DATE 10-11-16

NAME PGE - Beaver Plant

ADDRESS

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT	

QTY.	DESCRIPTION	PRICE	AMOUNT
31.85	Sand To PGE Beaver		
	For AEC		
	Dietrick Trucking		
	8533-8910		
		TAX	
RECEIVED BY		TOTAL	

All claims and returned goods MUST be accompanied by this bill.

0227

THANK YOU

DIETRICH TRUCKING, LLC

7211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No.	Phone	Date 10-12-16
Sold To	Anderson Environmental	
Address	PGE Beaver Generating Plant	
City		

Driver	Truck & Trailer
Hank Hilton	8727-8917

Qty.	Description	Price	Amount	
32-T	Sand - 0228			
32-T	Sand - 0228			
32-T	Sand - 0228			
3/4"	3/4" - 439902			
31.21				
	>			
	Not Responsible for Damage Behind Curb Line			

All claims and returned goods MUST be accompanied by this bill.

Rec'd By	Tax		
	Total		

248115 / 4055211

149298

Thank You

DIETRICH TRUCKING, LLC

7211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No.	Phone	Date 10-12-16

Sold To: Anderson Enviromental

Address:

City: Kynsi Pit to PGE Clatskanie

Driver: Tim Harvey

Truck & Trailer: 8532 - 8841

Qty.	Description	Price	Amount
31.67	tons of Sand		
31.80			
32			
	Kynsi #0229		
	Ocean Beach Pit to PGE		
32.02	tons of 5/8		
	#439904		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Rec'd By

Tax	
Total	

248115 / 4055211

149804

Thank You

J. L. Storedahl & Sons, Inc.

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE	TICKET NO.
10/13/2016	439932
TIME 7:07:36 AM	

CUSTOMER: 157	JOB: 75107	TRUCK NO.	Type
Anderson Environmental Co LLC 705 Colorado St Kelso, WA 98626	Beaver PGE Project PGE Port Westward Clatskanie, OR	AES26	TT
		LICENSE: AES #26	

P.O. NO.	ZONE:	HAULED BY:
16-078		

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
12	5/8"-0 Crushed	29.44 Ton	10.00	294.40
	Freight		7.00	206.08

Loads:	Accum. Amount			
2	Ton 61.98	Gross: 48.66 Tons	Subtotal	500.48
LOCATION WHERE WEIGHED: LONGVIEW		Tare: 19.22 Tons	Tax	0.00
WEIGHMASTER Sherry		Net: 29.44 Tons	Total	500.48

RECEIVED BY: X

DRIVER ON: DRIVER OFF:

J. L. Storedahl & Sons, Inc.

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE 10/13/2016

TIME 9:25:24 AM

TICKET NO. 439943

CUSTOMER: 157
Anderson Environmental Co LLC
705 Colorado St
Kelso, WA 98626

JOB: 75107
Beaver PGE Project
PGE Port Westward
Clatskanie, OR

TRUCK NO. AES26

Type TT

LICENSE: AES #26

P.O. NO. 16-078

ZONE:

HAULED BY:

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
60	1 1/2"-3/4" Crushed	29.76 Ton	12.00	357.12
	Freight		7.00	208.32

Loads: 2

Accum. Amount Ton 62.28

LOCATION WHERE WEIGHED: LONGVIEW

WEIGHMASTER Sherry

Gross:	48.98 Tons	Subtotal	565.44
Tare:	19.22 Tons	Tax	0.00
Net:	29.76 Tons	Total	565.44

RECEIVED BY: X

DRIVER ON:

DRIVER OFF:

J. L. Storedahl & Sons, Inc.

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE 10/13/2016

TIME 11:23:57 AM

TICKET NO. 439955

CUSTOMER: 157
Anderson Environmental Co LLC
705 Colorado St
Kelso, WA 98626

JOB: 75107
Beaver PGE Project
PGE Port Westward
Clatskanie, OR

TRUCK NO. AES26

Type TT

LICENSE: AES #26

P.O. NO. 16-078

ZONE:

HAULED BY:

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
60	1 1/2"-3/4" Crushed	30.47 Ton	12.00	365.64
	Freight		7.00	213.29

Loads: 4

Accum. Amount Ton 125.31

LOCATION WHERE WEIGHED: LONGVIEW

WEIGHMASTER Sherry

Gross: 49.69 Tons
Tare: 19.22 Tons
Net: 30.47 Tons

Subtotal 578.93
Tax 0.00
Total 578.93

RECEIVED BY: X

DRIVER ON:

DRIVER OFF:

J. L. Storedahl & Sons, Inc.

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE 10/13/2016

TIME 1:13:53 PM

TICKET NO. 439961

CUSTOMER: 157
Anderson Environmental Co LLC
705 Colorado St
Kelso, WA 98626

JOB: 75107
Beaver PGE Project
PGE Port Westward
Clatskanie, OR

TRUCK NO. AES26

Type TT

LICENSE: AES #26

P.O. NO. 16-078

ZONE:

HAULED BY:

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
60	1 1/2"-3/4" Crushed	30.43 Ton	12.00	365.16
	Freight		7.00	213.01

Loads: 6

Accum. Amount Ton 188.75

LOCATION WHERE WEIGHED: LONGVIEW

WEIGHMASTER Sherry

Gross:	49.61 Tons	Subtotal	578.17
Tare:	19.18 Tons	Tax	0.00
Net:	30.43 Tons	Total	578.17

RECEIVED BY: X

DRIVER ON:

DRIVER OFF:

J. L. Storedahl & Sons, Inc.

16-078

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE: 10/13/2016
TIME: 2:32:32 PM

TICKET NO.: 439963

CUSTOMER: 157
Anderson Environmental Co LLC
705 Colorado St
Kelso, WA 98626

JOB: 75107
Beaver PGE Project
PGE Port Westward
Clatskanie, OR

TRUCK NO.: JLS14
Type: TT
LICENSE: 16 078

P.O. NO.: 16-078
ZONE:
HAULED BY: 16

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
60	1 1/2"-3/4" Crushed	33.10 Ton	12.00	397.20
	Freight		7.00	231.70

Loads: 7
Accum. Amount: Ton 221.85

LOCATION WHERE WEIGHED: LONGVIEW

WEIGHMASTER: Sherry

Gross: 52.64 Tons
Tare: 19.54 Tons
Net: 33.10 Tons

Subtotal: 628.90
Tax: 0.00
Total: 628.90

RECEIVED BY: X

DRIVER ON:
DRIVER OFF:

J. L. Storedahl & Sons, Inc.

16-078

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE: 10/13/2016
TIME: 7:06:41 AM

TICKET NO.: 439931

CUSTOMER: 157
Anderson Environmental Co LLC
705 Colorado St
Kelso, WA 98626

JOB: 75107
Beaver PGE Project
PGE Port Westward
Clatskanie, OR

TRUCK NO.: JLS14
Type: TT 16
LICENSE: 16 078

P.O. NO.: 16-078
ZONE:
HAULED BY: 16

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
12	5/8"-0 Crushed	32.54 Ton	10.00	325.40
	Freight		7.00	227.78

Loads: 1
Accum. Amount: Ton 32.54

LOCATION WHERE WEIGHED: LONGVIEW

WEIGHMASTER: Sherry

Gross: 52.78 Tons
Tare: 20.24 Tons
Net: 32.54 Tons

Subtotal: 553.18
Tax: 0.00
Total: 553.18

RECEIVED BY: X

DRIVER ON:
DRIVER OFF:

J. L. Storedahl & Sons, Inc.

16-078

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE: 10/13/2016
TIME: 11:05:37 AM
TICKET NO.: 439953

CUSTOMER: 157
Anderson Environmental Co LLC
705 Colorado St
Kelso, WA 98626

JOB: 75107
Beaver PGE Project
PGE Port Westward
Clatskanie, OR

TRUCK NO.: JLS14
Type: TT
LICENSE:

P.O. NO.: 16-078
ZONE:
HAULED BY:

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
60	1 1/2"-3/4" Crushed	32.56 Ton	12.00	390.72
	Freight		7.00	227.92

Loads: 3
Accum. Amount: Ton 94.84

LOCATION WHERE WEIGHED: LONGVIEW

WEIGHMASTER: Sherry

Gross: 52.80 Tons
Tare: 20.24 Tons
Net: 32.56 Tons

Subtotal: 618.64
Tax: 0.00
Total: 618.64

RECEIVED BY: X

DRIVER ON:
DRIVER OFF:

J. L. Storedahl & Sons, Inc.

16-078

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE: 10/13/2016
TIME: 12:48:07 PM
TICKET NO.: 439958

CUSTOMER: 157
Anderson Environmental Co LLC
705 Colorado St
Kelso, WA 98626

JOB: 75107
Beaver PGE Project
PGE Port Westward
Clatskanie, OR

TRUCK NO.: JLS14
Type: TT
LICENSE: 16-078

P.O. NO.: 16-078
ZONE:
HAULED BY:

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
60	1 1/2"-3/4" Crushed	33.01 Ton	12.00	396.12
	Freight		7.00	231.07

Loads: 5
Accum. Amount: Ton 158.32

LOCATION WHERE WEIGHED: LONGVIEW

WEIGHMASTER: Sherry

Gross: 52.55 Tons
Tare: 19.54 Tons
Net: 33.01 Tons

Subtotal: 627.19
Tax: 0.00
Total: 627.19

RECEIVED BY: X

DRIVER ON:
DRIVER OFF:

J. L. Storedahl & Sons, Inc.

16-078

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE: 10/13/2016

TIME: 9:21:32 AM

TICKET NO.: 439942

CUSTOMER: 157
Anderson Environmental Co LLC
705 Colorado St
Kelso, WA 98626

JOB: 75107
Beaver PGE Project
PGE Port Westward
Clatskanie, OR

TRUCK NO.: JLS14

Type: TT

LICENSE:

P.O. NO.: 16-078

ZONE:

HAULED BY:

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
60	1 1/2"-3/4" Crushed	32.52 Ton	12.00	390.24
	Freight		7.00	227.64

Loads: 1

Accum. Amount: Ton 32.52

LOCATION WHERE WEIGHED: LONGVIEW

WEIGHMASTER: Sherry

Gross: 52.76 Tons
Tare: 20.24 Tons
Net: 32.52 Tons

Subtotal 617.88
Tax 0.00
Total 617.88

RECEIVED BY: X

DRIVER ON:

DRIVER OFF:

DIETRICH TRUCKING, LLC

7211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No.	Phone	Date 10-13-16
Sold To AEC		
Address		
City Clatskanie OR		

Driver Holloway	Truck & Trailer 8527-8902

Qty.	Description	Price	Amount
	Sand from Kinzi		
	To AEC		
32T	Kinzi #0232		
	7-10=3		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Rec'd By	Tax	
	Total	

248115 / 4055211

154456

Thank You

DIETRICH TRUCKING, LLC

7211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No.	Phone	Date 10-13-16
Sold To	Anderson Environmental	
Address	PGE Tank Farm, Beaver Creek	
City		

Driver	Truck & Trailer
ELTON H. HILTON	5727-59D

Qty.	Description	Price	Amount
32	Sand Kynsi-0231		
	[redacted]		
	7-10=3		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Rec'd By

Tax	
Total	

246115 / 4055211

149299

Thank You

16-076-078

J. L. Storedahl & Sons, Inc.

16-078

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE: 10/14/2016
TIME: 10:41:00 AM
TICKET NO.: 439985

CUSTOMER: 157
Anderson Environmental Co LLC
705 Colorado St
Kelso, WA 98626

JOB: 75107
Beaver PGE Project
PGE Port Westward
Clatskanie, OR

TRUCK NO.: AES26 Type: TT
LICENSE: AES #26

P.O. NO.: 16-078
ZONE:
HAULED BY:

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
60	1 1/2"-3/4" Crushed	29.01 Ton	12.00	348.12
	Freight		7.00	203.07

Loads: 2
Accum. Amount: Ton 59.04

Gross: 49.01 Tons
Tare: 20.00 Tons
Net: 29.01 Tons

Subtotal 551.19
Tax 0.00
Total 551.19

LOCATION WHERE WEIGHED: LONGVIEW
WEIGHMASTER: Sherry
RECEIVED BY: X
DRIVER ON:
DRIVER OFF:

J. L. Storedahl & Sons, Inc.

16-078

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE: 10/13/2016
TIME: 9:21:32 AM
TICKET NO.: 439942

CUSTOMER: 157
Anderson Environmental Co LLC
705 Colorado St
Kelso, WA 98626

JOB: 75107
Beaver PGE Project
PGE Port Westward
Clatskanie, OR

TRUCK NO.: JLS14 Type: TT
LICENSE:

P.O. NO.: 16-078
ZONE:
HAULED BY:

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
60	1 1/2"-3/4" Crushed	32.52 Ton	12.00	390.24
	Freight		7.00	227.64

Loads: 1
Accum. Amount: Ton 32.52

Gross: 52.76 Tons
Tare: 20.24 Tons
Net: 32.52 Tons

Subtotal 617.88
Tax 0.00
Total 617.88

LOCATION WHERE WEIGHED: LONGVIEW
WEIGHMASTER: Sherry
RECEIVED BY: X
DRIVER ON:
DRIVER OFF:

J. L. Storedahl & Sons, Inc.

16-078

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE: 10/14/2016
TIME: 7:58:57 AM
TICKET NO.: 439971

CUSTOMER: 157
Anderson Environmental Co LLC
705 Colorado St
Kelso, WA 98626

JOB: 75107
Beaver PGE Project
PGE Port Westward
Clatskanie, OR

TRUCK NO.: AES26
Type: TT
LICENSE: AES #26

P.O. NO.: 16-078
ZONE:
HAULED BY:

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
60	1 1/2"-3/4" Crushed	30.03 Ton	12.00	360.36
	Freight		7.00	210.21

Loads: 1
Accum. Amount: Ton 30.03

Gross: 50.03 Tons
Tare: 20.00 Tons
Net: 30.03 Tons

Subtotal: 570.57
Tax: 0.00
Total: 570.57

LOCATION WHERE WEIGHED: LONGVIEW

WEIGHMASTER: Sherry

RECEIVED BY: X

DRIVER ON:
DRIVER OFF:

J. L. Storedahl & Sons, Inc.

16-078

2233 TALLEY WAY • KELSO, WASHINGTON 98626
360 636-2420

J.L. Storedahl & Sons, Inc. is not responsible for damages incurred from the delivery of products due to soft ground, misdirection by customer or representatives thereof, or general conditions unsuitable for truck traffic.

DATE: 10/14/2016
TIME: 1:17:53 PM
TICKET NO.: 439994

CUSTOMER: 157
Anderson Environmental Co LLC
705 Colorado St
Kelso, WA 98626

JOB: 75107
Beaver PGE Project
PGE Port Westward
Clatskanie, OR

TRUCK NO.: AES26
Type: TT
LICENSE: AES #26

P.O. NO.: 16-078
ZONE:
HAULED BY:

PRODUCT CODE	PRODUCT	AMOUNT	UNIT PRICE	EXTENSION
60	1 1/2"-3/4" Crushed	30.36 Ton	12.00	364.32
	Freight		7.00	212.52

Loads: 3
Accum. Amount: Ton 89.40

Gross: 49.45 Tons
Tare: 19.09 Tons
Net: 30.36 Tons

Subtotal: 576.84
Tax: 0.00
Total: 576.84

LOCATION WHERE WEIGHED: LONGVIEW

WEIGHMASTER: Sherry

RECEIVED BY: X

DRIVER ON:
DRIVER OFF:

DIETRICH TRUCKING, LLC

7211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No.	Phone	Date 10/18/15
Sold To Anderson Environmental		
Address		
City		

Driver Hank Hilton	Truck & Trailer 8727 · 8917			
Qty.	Description	Price	Amount	
32 T	Sand - From Kynsi			
	Pit To PGE Site			
	0237			
	715-830 = 1.25			
	>			
	Not Responsible for Damage Behind Curb Line			
All claims and returned goods MUST be accompanied by this bill.		Tax		
Rec'd By		Total		

248115 / 4055211

155103

Thank You

KYNSI CONSTRUCTION, INC.

P O Box 836
14193 Midland District Road
Clatskanie, Oregon 97016
503-728-3251

CUSTOMER'S ORDER NO.	PHONE	DATE
		10-18-16

NAME AEC

ADDRESS Clatskanie OR

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT

QTY.	DESCRIPTION	PRICE	AMOUNT
1	~~32~~ Sand from Kinzi		
	To AEC		
32T			
	Dietrich		
	8527-8902		
	7:00-15:00 = 1 hr		
		TAX	
RECEIVED BY		TOTAL	

All claims and returned goods MUST be accompanied by this bill.

0235

THANK YOU

DIETRICH TRUCKING, LLC

7211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No.	Phone	Date 10-17-16
Sold To AEC		
Address		
City Clatskanie OR		

Driver Holloway	Truck & Trailer 8527-8902			
Qty.	Description	Price	Amount	
5	Sand from Kinzi			
	To AEC			
32T				
32T				
32T				
32T				
32T				
	7-445: 9.75			
	>			
	Not Responsible for Damage Behind Curb Line			
All claims and returned goods MUST be accompanied by this bill.		Tax		
Rec'd By		Total		

248115 / 4055211

154460

Thank You

DIETRICH TRUCKING, LLC

7211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No.	Phone	Date 10-17-16
Sold To	Anderson Enviromental	
Address		
City		

Driver	Truck & Trailer
Hank Hilton	8227-8917

Qty.	Description	Price	Amount
32.50	Sand From Kinzi		
31.80	Pit to PGE		
33.00	Jobsite		
32.00	"0233"		
32.00	"		
	7-430: 9.50		
	>		
	Not Responsible for Damage Behind Curb Line		

All claims and returned goods MUST be accompanied by this bill.

Tax		
Total		

Rec'd By

248115 / 4055211

155102

Thank You

DIETRICH TRUCKING, LLC

7211-A NE 43rd Ave.
VANCOUVER, WASHINGTON 98661
(360) 892-3881
Fax (360) 883-1898

Customer's Order No.	Phone	Date 10-26-16
Sold To AEC.-PGE	Job#	Kznsi Pit
Address		
City		

Driver Ron Maxam 8110		Truck & Trailer 8533-8910		
Qty.	Description	Price	Amount	
35.30	Sand From Kznsi Pit			
	To PGE			
31.45	Sand			
34.50	Sand			
30.20	Sand			
	T# 0240			
	715-445= 9.50			
	>			
	Not Responsible for Damage Behind Curb Line			
All claims and returned goods MUST be accompanied by this bill.		Tax		
Rec'd By		Total		

248115 / 4055211

149028

Thank You

KYNSI CONSTRUCTION, INC.

P O Box 836
14193 Midland District Road
Clatskanie, Oregon 97016
503-728-3251

CUSTOMER'S ORDER NO.	PHONE	DATE
		10-26-16

NAME AEC

ADDRESS

Dietrich

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT	8527-8902

QTY.	DESCRIPTION	PRICE	AMOUNT
5	Sand for AEC		
34.5			
31.54			
31.00			
31.80			
30.09			
		TAX	
RECEIVED BY		TOTAL	

All claims and returned goods MUST be accompanied by this bill.

0238

THANK YOU

KYNSI CONSTRUCTION, INC.

P O Box 836
14193 Midland District Road
Clatskanie, Oregon 97016
503-728-3251

CUSTOMER'S ORDER NO.	PHONE	DATE
		10-26-16

NAME: Anderson Environmental

ADDRESS: PGE Generating Plant

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT	Dietrich Truck 8537

QTY.	DESCRIPTION	PRICE	AMOUNT
29.48	tons of fill sand 7.40		
29.68	9.50		
33.53	11.39		
31.63	1.18		
31.43	2.52		
	Tim H		
		TAX	
		TOTAL	

RECEIVED BY

All claims and returned goods MUST be accompanied by this bill.

0239

THANK YOU

KYNSI CONSTRUCTION, INC.

P O Box 836
14193 Midland District Road
Clatskanie, Oregon 97016
503-728-3251

CUSTOMER'S ORDER NO.	PHONE	DATE
		10-27-16

NAME AEC

ADDRESS Clatskanie OR

Dietrich

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT
						8527-8902

QTY.	DESCRIPTION	PRICE	AMOUNT
	Sand from Kynsi		
	To AEC / PGE		
34.25			
31.07			
		TAX	
		TOTAL	

RECEIVED BY

All claims and returned goods MUST be accompanied by this bill.

0241

THANK YOU

KYNSI CONSTRUCTION, INC.

P O Box 836
14193 Midland District Road
Clatskanie, Oregon 97016
503-728-3251

CUSTOMER'S ORDER NO.	PHONE	DATE
		10/27/16

NAME: AEC

ADDRESS: Clatskanie OR

Dietrich

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT

8532-8911

QTY.	DESCRIPTION	PRICE	AMOUNT
~~32.68~~	Fill Sand 1 yrs		
	To AEC/PGE		
32.68	8:00AM		
31.15	9:41AM		
32.48	11:30AM		
32.48	1:16PM		
31.18	3:04PM		
		TAX	
		TOTAL	

RECEIVED BY

0242

All claims and returned goods MUST be accompanied by this bill.

THANK YOU

078 PGE Backfill / import

125 YEARS OF EXCELLENCE
1891 2016
CALPORTLAND®
EXPECT MORE ... WE DELIVER!®

Phone: (800)469-8010
E-mail: cust_service@calportland.com

Customer #	Sold To
1004553	1004553
Ship To	Bill To
	1004553

ENERGY STAR AWARD 2016
PARTNER OF THE YEAR
Sustained Excellence

INVOICE

Invoice No: 93033730
Invoice Date: 10/18/2016
Invoice Amt: 2,621.00
Invoice Due: 11/17/2016

Bill to:
ANDERSON ENVIRONMENTAL CONST
705 COLORADO ST
KELSO WA 98626-5506
USA

Ship to:
ANDERSON ENVIRONMENTAL CONTRNG
80997 KALLUNKI RD
CLATSKANIE OR 97016-2209

Customer P.O.	Cust Order #	Project/Order #	Shipped Via	Terms	Due Date
16078	134		Delivery	Net due 30 days	11/17/2016

Ship Date	Ticket Number	Plant	Prod Num	Description	UOM	Quantity Shipped	Unit Price	Tax	Gross Price
10/18/2016	1095184	550R	0565	TANK FILL	CY	10.000	112.00	N	1,120.00
				10CY X1.5 = 15TN Per Load Ticket					
10/18/2016	1095184	550R	9950	ZONE CHARGE	LD	2	60.00	N	120.00
10/18/2016	1095205	550R	0565FS	TANK FILL	CY	10.000	112.00	N	1,120.00
10/18/2016	1095205	550R	9950	ZONE CHARGE	LD	2	60.00	N	120.00
10/18/2016	1095205	550R	STAND_BY	STAND BY CHARGE	MIN	44.000	1.50	N	66.00
				ENVIRONMENTAL FEE	CY	20.000	3.00	N	60.00
				FUEL SURCHARGE	LD	2.000	7.50	N	15.00

Job #: 16.078
GL Code: 5320.00
Cost Type: m
Voucher:
PM: KK
Approved
Date

10 · 1.5 did conversion

Clear Clear

Please include invoice number on checks & copy of invoices with adjustments

Total Quantity: 20.000

State & Local Taxes 0.00 %

SUBTOTAL: 2,621.00
Tax : 0.00
Total : 2,621.00

REMIT TO:
CALPORTLAND COMPANY
P O BOX 3601
SEATTLE WA 98124-3601
USA

Thank you for your business!

ORIGINAL