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May 23, 2018 Project No. 9085.10.07

Matt Graves, LG Port of Vancouver 3103 Northwest Lower River Road Vancouver, Washington 98660

Re: Block A Phase II Environmental Assessment—Port of Vancouver USA Terminal 1

Dear Mr. Graves:

On behalf of the Port of Vancouver USA (Port), Maul Foster & Alongi, Inc. (MFA) completed an investigation to assess soil and groundwater for possible impacts related to historical activities at the Terminal 1 Block A property located at 200 Columbia Street in Vancouver, Washington (Block A; see Figure 1). Previous investigations of Block A conducted in 2009, 2015, and 2016 identified soil and groundwater impacts. A test pit investigation conducted by MFA in 2017 north of Block A identified soil impacts and perched groundwater with a sheen. Since these investigations did not include the area now covered by a road in the northern portion of Block A, environmental conditions in that area were a data gap. The purpose of this investigation was to address this data gap and assess whether impacts to soil and groundwater extend into the northern portion of Block A.

EXECUTIVE SUMMARY

The Block A Phase II environmental assessment included collection and laboratory analysis of seven soil samples from three borings, and one groundwater sample from one boring (see Figure 2). Soil sample depths ranged from 2 to 14 feet below ground surface (bgs), and the groundwater sample was collected from 20 to 30 feet bgs.

Soil samples were analyzed for arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver; gasoline-, diesel-, and oil-range total petroleum hydrocarbons (TPH); polychlorinated biphenyls (PCBs); and polycyclic aromatic hydrocarbons (PAHs). The groundwater sample was analyzed for the same constituents, except that analysis was not conducted for PCBs but was conducted for volatile organic compounds (VOCs).

No indicators of contamination (e.g., petroleum-hydrocarbon-like odors, staining) were observed in the soil borings. The only Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup level (CUL) exceedance for soil was the 1,160 milligrams per kilogram (mg/kg) lead concentration at boring GP-1 at 11 feet bgs, which exceeds the MTCA Method A CUL of 250 mg/kg (see Table 1). Because of the sample's potential to exceed the toxicity characteristic leaching procedure (TCLP) for lead, it was

analyzed for TCLP lead. The lead TCLP analysis concentration was 0.654 milligram per liter (mg/L), below the U.S. Environmental Protection Agency (USEPA) hazardous waste regulatory level of 5 mg/L. In addition, soil at boring GP-1 at 7 feet bgs was analyzed for lead, to assess the vertical extent of lead impacts. The lead concentration was 46 mg/kg, indicating that the vertical extent of the elevated lead concentration in GP-1 at 11 feet bgs does not exist at shallower depths.

Analysis of the groundwater constituents did not detect Method A CUL exceedances.

Should future development of Block A require excavation of soil at GP-1 at 11 feet bgs, further assessment of the extent of lead in soil is recommended.

FIELDWORK

A scope of work for this assessment was provided to the Port in June 2017¹ and the fieldwork was performed on January 30, 2018. The investigation conducted was consistent with the scope of work, the requirements put forth in Ecology's Guidance on Sampling and Data Analysis Methods,² and Ecology's MTCA (Washington Administrative Code [WAC] 173-340).

Prior to the investigation activities, MFA notified the Underground Utility Notification Center and retained a private underground utility-locating contractor (Applied Professional Services, Inc.) to check the proposed boring locations for underground utilities.

Pacific Soil and Water LLC, from Tualatin, Oregon, conducted the drilling, using a truckmounted GeoprobeTM 6600 drill rig. Three borings (GP-1 through GP-3) were advanced under the observation of an MFA geologist at the locations shown in Figure 2. These locations were selected to provide representative coverage of the northern portion of Block A. MFA collected soil samples, described soil types, and used a photoionization detector (PID) to assess representative soil samples for organic vapors. Observations and sample collection information were recorded on the boring logs provided in Attachment A.

Borings GP-1 and GP-3 were advanced to 15 feet bgs, and GP-2 was advanced to 30 feet bgs for groundwater sample collection. During borehole advancement, continuous soil core was retrieved in 5-foot-long intervals to assess conditions of the excavation depth anticipated for future development and to assess baseline conditions in soil below the future excavation depth. Three soil samples were collected from each boring for potential laboratory analysis, for a total of nine samples. The soil sample depths were selected as described in the scope of work and

¹ MFA. MFA work order authorization for Terminal I Block A Phase II environmental site assessment. Maul Foster & Alongi, Inc., June 23, 2017.

² Ecology. Guidance on sampling and data analysis methods. Publication No. 94-49. Washington State Department of Ecology Toxics Cleanup Program, January 1995.

based on field observations, site history, professional judgment, and ability to provide sample material representative of each soil stratigraphic unit encountered in the boring.

Wood fragments having the appearance of manufactured wood chips were observed at approximately 6.5 to 7 feet bgs and scattered throughout 10.8 to 12.2 bgs at boring GP-3. These had no noticeable odor and the PID reading was 0.0 part per million (ppm). GP-1 was the only boring with a PID reading above 0.0 ppm; at 2 feet bgs, the PID reading was 0.3 ppm. Evidence of contamination (hydrocarbon-like odor and staining) was not observed in the soil recovered from the borings of Block A.

GP-2 was selected for reconnaissance groundwater sample collection because of its central location relative to the three borings in Block A. The drilling rig retrieved additional soil core from the 15- to 25-foot depth interval and then pushed without soil collection to 30 feet bgs. A 10-foot-long, temporary polyvinyl chloride, non-pre-packed well screen was placed at the 20- to 30-foot depth interval to facilitate groundwater sample collection. Groundwater was encountered at approximately 21 feet bgs at GP-2. The temporary well was purged of groundwater, using a peristaltic pump. Readings of the purged water quality were recorded during purging, using a water-quality meter to facilitate collection of a sample representative of groundwater and to reduce turbidity caused by drilling and insertion of the screen into the soil. The water quality readings are provided as Attachment B.

Investigation-derived waste generated during the assessment activities included approximately 5 gallons of water and 10 gallons of soil. The water was placed in the Port's holding tank for future disposal. The soil was placed in a labeled, steel, 55-gallon drum near the Block A and Block C parcel boundary.

SITE GEOLOGY AND HYDROGEOLOGY

Consistent with previous investigations at Terminal 1, geologic units encountered in the soil borings consisted of gravelly and sandy fill overlying sandy and silty soil units. Typically, gravelly silt and silty gravel fill was observed from the surface to approximately 8 feet bgs. Fill consisting of sand with silt was generally observed from approximately 8 feet bgs to 25 feet bgs, the maximum depth explored. Silt and sandy silt were observed beneath the sandy fill in two borings (GP-2 and GP-3) at approximately 11 feet bgs. These finer-grained silty units were interpreted to be native soil units.

Groundwater was encountered at approximately 21 feet bgs. Based on groundwater monitoring conducted at Terminal 1, groundwater is inferred to flow to the north and northwest, away from the Columbia River, approximately 400 feet southwest of Block A.

Project No. 9085.10.07

Matt Graves, LG May 23, 2018 Page 4

ANALYTICAL METHODS

Of the nine soil samples collected for potential laboratory analysis, six were initially selected (two from each boring) to represent the stratigraphic units encountered in the borings at depths that may require excavation (assumed to be 14 feet or less) during future development of Block B. The soil samples, together with the one groundwater sample, were submitted under chain-of-custody protocols to Apex Laboratories, LLC, in Portland, Oregon.

The six soil samples were initially analyzed for the following constituents:

- Diesel- and oil-range TPH by method Northwest Total Petroleum Hydrocarbons (NWTPH)-Dx
- Gasoline-range TPH by method NWTPH-Gx
- Total metals by USEPA Method 6020 for arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver
- PCBs by USEPA Method 8082A

Initial analysis of two samples (GP-1 at 2 feet and 11 feet bgs) detected diesel- and oil-range TPH in soil. These two samples were subsequently analyzed for PAHs by USEPA Method 8270D.

Initial analysis of sample GP-1 at 11 feet bgs resulted in a lead concentration in exceedance of the MTCA Method A CUL and with the potential to exceed the TCLP criterion for lead. This sample was subsequently analyzed for TCLP lead by USEPA Method 6020. Additionally, a sample from GP-1 at 7 feet bgs was analyzed for total lead by USEPA Method 6020 to assess the vertical extent of the elevated lead concentration found in sample GP-1 at 11 feet bgs.

The groundwater sample was analyzed for the following constituents:

- Diesel- and oil-range TPH by method NWTPH-Dx
- Gasoline-range TPH by method NWTPH-Gx
- Total metals by USEPA Method 6020 for arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver
- VOCs by USEPA Method 8260B
- PAHs by USEPA Method 8270D

See Attachment C for the laboratory analytical reports and Attachment D for the data validation memorandum. The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

Consistent with WAC 173-340-708(8), mixtures of carcinogenic PAHs (cPAHs) are considered as single hazardous substances in the evaluation of compliance with MTCA CULs, such that the toxicity of a particular congener is expressed relative to the most toxic congener (benzo(a)pyrene). The toxicity of cPAHs as a group was assessed using a toxic equivalency approach. Each congener in the group is assigned a toxic equivalency factor (TEF) corresponding to the toxicity of that congener relative to the toxicity of benzo(a)pyrene. For example, a congener that is equal in toxicity to benzo(a)pyrene would have a TEF of 1. Similarly, a congener that is half as toxic as benzo(a)pyrene would have a TEF of 0.5, and so on. Multiplying the concentration of a congener by its TEF produces the concentration for that congener that is equivalent in toxicity to the benzo(a)pyrene concentration, known as the toxicity equivalent concentration (TEC). Computing the TEC for each congener (Ci in the equation below) in a sample, followed by summing all TEC values, results in a single cPAH total TEC (i.e., cPAH TTEC) that can be compared to the MTCA CUL. The following formula represents the summation approach:

cPAH TTEC = $\sum_{i=1}^{k} Ci \times TEFi$

Naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene were summed to compare to the MTCA Method A CUL for naphthalenes. Consistent with Ecology's Implementation Memorandum No. 4,³ the diesel- and oil-range TPH results were summed for a total detection value and were calculated as follows:

• Diesel and oil results qualified as non-detect and flagged with a "U" are used in the total calculation at one-half the associated value.

RESULTS

The sections below summarize the soil and groundwater analytical results and screening against MTCA CULs presented in Tables 1 and 2. MTCA Method A CULs are for unrestricted land use, as noted on Tables 1 and 2. Results are screened against MTCA Method B CULs only when MTCA Method A CULs are not available.

³ Ecology. Memorandum (re: determining compliance with Method A cleanup levels for diesel and heavy oil) to file. Implementation memorandum no. 4. Prepared by T. Nord, Washington State Department of Ecology, June 2004.

Soil

The following metals were detected in one or more soil samples: arsenic, barium, cadmium, chromium, lead, mercury, and silver. Of these, only lead in one sample—from GP-1 at 11 feet bgs—exceeded the MTCA Method A CUL of 250 mg/kg, with a concentration of 1,160 mg/kg. The lead TCLP analysis concentration for GP-1 at 11 feet bgs was 0.654 mg/L, below the USEPA hazardous waste regulatory level of 5 mg/L for lead. The concentration for total lead from GP-1 at 7 feet bgs was 46 mg/kg, indicating that the vertical extent of the elevated lead concentration in sample GP-1 at 11 feet bgs does not exist at shallower depths.

Each soil sample was analyzed for PCBs; there were no detections.

Gasoline-range TPH were not detected in any of the samples.

Diesel-range TPH was detected only in sample GP-1 at 11 feet bgs (68 mg/kg). Oil-range TPH was detected only in sample GP-1 at 2 feet bgs (90.6 mg/kg). The individual results and the calculated diesel + oil TPH results for these two samples were below the MTCA Method A CUL of 2,000 mg/kg.

The two soil samples with detections of TPH (GP-1 at 2 feet and 11 feet bgs) were also analyzed for PAHs. Several PAHs were detected in each sample, but these detections did not exceed the MTCA Method A and B CULs, and the cPAH TTEC did not exceed MTCA Method A CULs.

Groundwater

The following total metals were detected in the groundwater sample from GP-2: arsenic, barium, chromium, lead, and selenium. None of these exceeded the MTCA Method A CULs.

Gasoline-range TPH, diesel-range TPH, oil-range TPH, and VOCs were not detected in the groundwater sample.

Multiple PAHs were detected in the groundwater sample, but none of the detections exceeded the MTCA Method A CULs or the Method B CULs used when a Method A CUL was not available.

CONCLUSIONS

The Phase II environmental assessment of Block A resulted in the following conclusions:

• No major indicators of contamination (petroleum hydrocarbon-like odors, staining) were observed in the soil borings. Wood fragments were observed in GP-3, but there were no hydrocarbon-like odors or elevated PID readings associated with the wood.

- The MTCA Method A CUL exceedance for lead in soil sample GP-1 at 11 feet bgs is limited in vertical extent, since lead did not exceed the CUL in the shallower samples at 2 feet and 7 feet bgs. In addition, the lead TCLP analysis concentration for GP-1 at 11 feet bgs was below the USEPA hazardous waste regulatory level.
- Groundwater was present at approximately 21 feet bgs.
- Analysis of the groundwater constituents did not detect Method A CUL exceedances.
- Overall, widespread contamination with the potential to impact future redevelopment was not encountered during the assessment.

RECOMMENDATIONS

The results of the Block A Phase II environmental assessment provide the basis for the following recommendations:

- Further assessment of the extent of lead in soil should future development of Block A require excavation of soil at GP-1 at 11 feet bgs.
- No additional groundwater sampling in Block A.

Sincerely,

Maul Foster & Alongi, Inc.

David Weatherby, LG Senior Geologist

Loy Iding

Cody Schweitzer Staff Geologist

Attachments: Limitations Tables Figures A—Boring Logs B—Groundwater Field Sampling Data Sheet C—Laboratory Analytical Report D—Data Validation Memorandum The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

TABLES



Table 1 Summary of Block A Soil Analytical Results Port of Vancouver Vancouver, Washington

Location:			TCLP	GP1			G	P2	GP3	
Sample Name:			Pogulatory	GP1-S-2.0	GP1-S-7.0	GP1-S-11.0	GP2-S-2.5	GP2-S-13.0	GP3-S-4.0	GP3-S-14.0
Collection Date:	MICAA	IVII CA B	Limita	01/30/2018	01/30/2018	01/30/2018	01/30/2018	01/30/2018	01/30/2018	01/30/2018
Collection Depth (ft bgs):			Limit	2.0	7.0	11.0	2.5	13.0	4.0	14.0
Metals (mg/kg)										
Arsenic	20	0.667	NV	2.34		17	1.86	4.81	1.67	6.68
Barium	NV	16000	NV	130		654	176	187	63.8	205
Cadmium	2	80	NV	0.232		2.26	0.45	0.456	0.25	0.406
Chromium	2000 ^b	120000 ^b	NV	11.8		26.3	8.64	22.5	4.7	29.7
Lead	250	NV	NV	68	46	1160	7.82	33.8	4.53	11.6
Mercury	2	NV	NV	0.0884 U		0.118	0.0973 U	0.112	0.0869 U	0.116 U
Selenium	NV	400	NV	1.11 U		1.28 U	1.22 U	1.38 U	1.09 U	1.45 U
Silver	NV	400	NV	0.221 U		2.41	0.243 U	0.277 U	0.217 U	0.29 U
TCLP Metals (mg/L)										
Lead	NV	NV	5			0.654				
PCB Aroclors (mg/kg)										
Aroclor 1016	NV	5.6	NV	0.0101 U		0.0119 U	0.011 U	0.0129 U	0.0103 U	0.0125 U
Aroclor 1221	NV	NV	NV	0.0101 U		0.0119 U	0.011 U	0.0129 U	0.0103 U	0.0125 U
Aroclor 1232	NV	NV	NV	0.0101 U		0.0119 U	0.011 U	0.0129 U	0.0103 U	0.0125 U
Aroclor 1242	NV	NV	NV	0.0101 U		0.0119 U	0.011 U	0.0129 U	0.0103 U	0.0125 U
Aroclor 1248	NV	NV	NV	0.0101 U		0.0119 U	0.011 U	0.0129 U	0.0103 U	0.0125 U
Aroclor 1254	NV	0.5	NV	0.0101 U		0.0119 U	0.011 U	0.0129 U	0.0103 U	0.0125 U
Aroclor 1260	NV	0.5	NV	0.0101 U		0.0119 U	0.011 U	0.0129 U	0.0103 U	0.0125 U
Total PCBs	1.0	0.5	NV	0.0101 U		0.0119 U	0.011 U	0.0129 U	0.0103 U	0.0125 U

Table 1Summary of Block A Soil Analytical ResultsPort of VancouverVancouver, Washington

Location:			TCLP		GP1		G	P2	GP3	
Sample Name:			Pequilatory	GP1-S-2.0	GP1-S-7.0	GP1-S-11.0	GP2-S-2.5	GP2-S-13.0	GP3-S-4.0	GP3-S-14.0
Collection Date:	MICAA	IVII CA B	Limita	01/30/2018	01/30/2018	01/30/2018	01/30/2018	01/30/2018	01/30/2018	01/30/2018
Collection Depth (ft bgs):			LITTIL	2.0	7.0	11.0	2.5	13.0	4.0	14.0
PAHs (mg/kg)										
1-Methylnaphthalene	NV	34.5	NV	0.0552 U		0.00608 U				
2-Methylnaphthalene	NV	320	NV	0.0552 U		0.00608 U				
Acenaphthene	NV	4800	NV	0.0277 U		0.00304 U				
Acenaphthylene	NV	NV	NV	0.0277 U		0.00304 U				
Anthracene	NV	24000	NV	0.0277 U		0.00304 U				
Benzo(a)anthracene	NV	1.37	NV	0.0392 J		0.00541 J				
Benzo(a)pyrene	0.1	0.137	NV	0.0585		0.00766				
Benzo(b)fluoranthene	NV	1.37	NV	0.0535 J		0.0089 J				
Benzo(ghi)perylene	NV	NV	NV	0.0392		0.00696				
Benzo(k)fluoranthene	NV	13.7	NV	0.0414 U		0.00456 U				
Carbazole	NV	NV	NV	0.0414 U		0.00456 U				
Chrysene	NV	137	NV	0.0564 J		0.00633 J				
Dibenzo(a,h)anthracene	NV	0.137	NV	0.0277 U		0.00304 U				
Dibenzofuran	NV	80	NV	0.0277 U		0.00399 U				
Fluoranthene	NV	3200	NV	0.079		0.00863				
Fluorene	NV	3200	NV	0.0277 U		0.00304 U				
Indeno(1,2,3-cd)pyrene	NV	1.37	NV	0.0414		0.00681				
Naphthalene	5	1600	NV	0.0552 U		0.00608 U				
Phenanthrene	NV	NV	NV	0.031		0.0103				
Pyrene	NV	2400	NV	0.0751		0.00978				
Naphthalenes ^c	NV	1600	NV	0.0828 U		0.00912 U				
cPAH TTEC (ND=0.5)	0.1	NV	NV	0.0759 J		0.0102 J				
TPH (mg/kg)										
Gasoline-range	100 ^d	NV	NV	4.93 U		5.96 U	5.44 U	6.85 U	7.09 U	7.18 U
Diesel-range	2000	NV	NV	25 U		68	25 U	25.4 U	25 U	26.6 U
Oil-range	2000	NV	NV	90.6		50 U	50 U	50.8 U	50 U	53.2 U
Diesel + Oil ^e	2000	NV	NV	103.1		93	ND	ND	ND	ND

Table 1Summary of Block A Soil Analytical ResultsPort of VancouverVancouver, Washington

NOTES:

Calculated sums use the highest non-detect value when all constituents are non-detect. When detect and non-detect values are summed, one-half the non-detect value is used. Where all results are non-detect, the highest non-detect value is used.

Detected results are indicated by bold font.

Results that exceed cleanup levels are shaded. Non-detect results are not evaluated against cleanup criteria. Results are evaluated against MTCA B cleanup levels only when MTCA A levels are not available.

-- = not analyzed.

cPAH TTEC = carcinogenic PAH total toxic equivalent concentration. Non-detect results treated as one-half according to Washington State Department of Ecology Implementation Memorandum #10 (Evaluating the Human Health Toxicity of Carcinogenic PAHs (cPAHs) Using Toxicity Equivalency Factors (TEFs). April 20, 2015.

ft bgs = feet below ground surface.

J = result is an estimated value.

mg/kg = milligrams per kilogram.

mg/L = milligrams per liter.

MTCA A = Model Toxics Control Act Method A, unrestricted land use.

MTCA B = Model Toxics Control Act Method B, lower of carcinogen or noncarcinogen value.

ND = not detected.

NV = no value.

PAH = polycyclic aromatic hydrocarbon.

PCB = polychlorinated biphenyl.

TCLP = Toxicity Characteristic Leaching Procedure.

TPH = total petroleum hydrocarbons.

U = result is non-detect at the method reporting limit.

^aTCLP maximum concentration for toxicity characteristic, 40 CFR 261.24.

^bValue is for chromium III.

^cThe sum of naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene. One half of the method reporting limit used for non-detect results.

^dMTCA cleanup level is for gasoline-range organics with no detectable benzene present.

^eDiesel + Oil = sum of diesel-range hydrocarbons and oil-range hydrocarbons; half of the method reporting limit is used when results are not detected.

Table 2Summary of Block A Groundwater Analytical ResultsPort of VancouverVancouver, Washington

		Location:	GP2
		Sample Name:	GP2-W-26.0
	(Collection Date:	01/30/2018
	Collectior	n Depth (ft bgs):	26
Analyte	MTCA A	MTCA B	
Total Metals (ug/L)	·		
Arsenic	5	0.0583	2.62
Barium	NV	3200	221
Cadmium	5	8	0.2 U
Chromium	50	24000 ^a	10.5
lead	15	NV	6.91
Mercury	2	NV	0.08.U
Selenium	NV	80	1 78
Silver	NV	80	0.2.11
VOCs (ug/l)	14.0	00	0.2 0
1 1 1 2-Tetrachloroethane	NV	1.68	0411
	200	16000	0.4 U
	200	0.210	0.4 0
1,1,2,2-Tetrachioroethane		0.219	0.5 0
		7.40	0.5 0
		7.00	0.4 0
		400	0.4 0
1,2,3-IIIChloropenzene		IN V	2 U
1,2,3-Inchloropropane	IN V	0.00140	10
	NV NV	1.51	20
	NV NV	NV	
1,2-Dibromo-3-chloropropane	NV	0.0547	5 U
	0.01	0.0219	0.5 U
	NV –	/20	0.5 U
1,2-Dichloroethane	5	0.481	0.4 U
1,2-Dichloropropane	NV	1.22	0.5 U
1,3,5-Irimethylbenzene	NV	80	10
1,3-Dichlorobenzene	NV	NV	0.5 U
1,3-Dichloropropane	NV	NV	10
1,4-Dichlorobenzene	NV	8.1	0.5 U
2,2-Dichloropropane	NV	NV	10
2-Butanone	NV	4800	10 U
2-Chlorotoluene	NV	160	1 U
2-Hexanone	NV	NV	10 U
4-Chlorotoluene	NV	NV	1 U
4-Isopropyltoluene	NV	NV	10
4-Methyl-2-pentanone	NV	640	10 U
Acetone	NV	7200	20 U
Acrylonitrile	NV	0.081	2 U
Benzene	5	0.795	0.2 U
Bromobenzene	NV	NV	0.5 U
Bromodichloromethane	NV	0.706	1 U
Bromoform	NV	5.54	1 U
Bromomethane	NV	11.2	5 U
Carbon disulfide	NV	800	10 U
Carbon tetrachloride	NV	0.625	1 U

Table 2Summary of Block A Groundwater Analytical ResultsPort of VancouverVancouver, Washington

		Location:	GP2
		Sample Name:	GP2-W-26.0
	(Collection Date:	01/30/2018
	Collection	n Depth (ft bgs):	26
Analyte	MTCA A	MTCA B	
Total Metals (ug/L)	•		
Arsenic	5	0.0583	2.62
Chlorobenzene	NV	160	0.5 U
Chlorobromomethane	NV	NV	1 U
Chloroethane	NV	NV	10 U
Chloroform	NV	1.41	1 U
Chloromethane	NV	NV	5 U
cis-1,2-Dichloroethene	NV	16	0.4 U
cis-1.3-Dichloropropene	NV	NV	1 U
Dibromochloromethane	NV	0.521	1 U
Dibromomethane	NV	80	1 U
Dichlorodifluoromethane (Freon 12)	NV	1600	1 U
Ethylbenzene	700	800	0.5 U
Hexachlorobutadiene	NV	0.561	5 U
Isopropylbenzene	NV	800	1 U
m.p.Xvlene	1000	1600	1 U
Methyl tert-butyl ether	20	24.3	1 U
Methylene chloride	5	21.9	3 U
Naphthalene	160	160	2 U
n-Butvlbenzene	NV	400	1 U
n-Propylbenzene	NV	800	0.5 U
o-Xvlene	NV	1600	0.5 U
sec-Butylbenzene	NV	800	1 U
Styrene	NV	1600	1 U
tert-Butylbenzene	NV	800	1 U
Tetrachloroethene	5	20.8	0.4 U
Toluene	1000	640	1 U
trans-1,2-dichloroethene	NV	160	0.4 U
trans-1,3-Dichloropropene	NV	NV	1 U
Trichloroethene	5	0.54	0.4 U
Trichlorofluoromethane (Freon 11)	NV	2400	2 U
Vinyl chloride	0.2	24	0.4 U
PAHs (ug/L)			
1-Methylnaphthalene	NV	1.51	0.04 U
2-Methylnaphthalene	NV	32	0.04 U
Acenaphthene	NV	960	0.02 U
Acenaphthylene	NV	NV	0.02 U
Anthracene	NV	4800	0.02 U
Benzo(a)anthracene	NV	0.12	0.0338 J
Benzo(a)pyrene	0.1	0.012	0.0674
Benzo(b)fluoranthene	NV	0.12	0.0778 J
Benzo(ghi)perylene	NV	NV	0.0411
Benzo(k)fluoranthene	NV	1.2	0.0367 J
Carbazole	NV	NV	0.03 U
Chrysene	NV	12	0.0437 J
Dibenzo(a,h)anthracene	NV	0.012	0.02 U

Table 2Summary of Block A Groundwater Analytical ResultsPort of VancouverVancouver, Washington

		Location:	GP2
		Sample Name:	GP2-W-26.0
	C	Collection Date:	01/30/2018
	Collection	n Depth (ft bgs):	26
Analyte	MTCA A	MTCA B	
Total Metals (ug/L)			-
Arsenic	5	0.0583	2.62
Dibenzofuran	NV	16	0.02 U
Fluoranthene	NV	640	0.0986
Fluorene	NV	640	0.02 U
Indeno(1,2,3-cd)pyrene	NV	0.12	0.0482
Naphthalene	160	160	0.04 U
Phenanthrene	NV	NV 100	0.0782
Pyrene	NV	480	0.0804
Naphthalenes	160	160	0.06 0
CPAH TIEC (ND=0.5)	0.1	NV	0.0885 J
	<u></u>		100 11
Gasoline-range	1000°	IN V	100 0
Diesei-range	500	NV NV	200 U
Oll-range	500	NV NV	400 U
Diesel + Oil ^a	500	IN V	300 0
Detected results are indicated by bold font. Results that exceed cleanup levels are shaded criteria. Results are evaluated against MTCA B cPAH TTEC = carcinogenic PAH total toxic eqi according to Washington State Department of Human Health Toxicity of Carcinogenic PAHs (ft bgs = feet below ground surface. J = result is an estimated value. MTCA A = Model Toxics Control Act Method A MTCA B = Model Toxics Control Act Method B, ND = not detected. NV = no value. PAH = polycyclic aromatic hydrocarbon. TPH = total petroleum hydrocarbon. U = result is non-detect at the method reporting ug/L = micrograms per liter. VOC = volatile organic compound. ^a Value is for chromium III. ^b The sum of naphthalene, 1-methylnaphthaler	d. Non-detect results are not cleanup levels only when M uivalent concentration. Non of Ecology Implementation M (cPAHs) Using Toxicity Equiva (. lower of carcinogen or non ng limit.	evaluated against TCA A levels are no -detect results treate lemorandum #10 (E lency Factors (TEFs). carcinogen value.	cleanup t available. ed as one-half valuating the April 20, 2015.
^c MTCA cleanup level is for gasoline-range org	anics with no detectable be	enzene present.	
^d Diesel + Oil = sum of diesel-range hydrocarbo limit is used when results are not detected.	ons and oil-range hydrocarb	ons; half of the meth	nod reporting

FIGURES









Figure 1 Site Location

Port of Vancouver Terminal 1, Block A Vancouver, Washington

```
2,000
           1.000
C
           Feet
```



Site Address: 200 Columbia Street, Vancouver,

Washington Source: Taxlots obtained from Clark County GIS,

Section DLC51, Township 2 North, Range 1 East

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

MAUL FOSTER ALONGI p. 971 544 2139 | www.maulfoster.com

US Geological Survey (1990) 7.5-minute topographic quadrangle: Portland



Source: Aerial photograph and tax lots (2016) obtained from Clark County GIS; historical sample point locations obtained from Ecology & Environment, Inc. and HAI. Lateral extent of soil (created by HAI, digitized by MFA) for MTCA Method A exceedances. NOTES: Historical sample point locations are approximate. HAI = Hahn and Associates, Inc. MTCA = Model Toxics Control Act



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Blocks

Lateral Extent of MTCA Method A Soil Exceedances

Terminal 1 Site

Tax Lot

City of Vancouver Property Boundary in Terminal 1

Legend

Previous Sample Locations

- ✤ Soil Boring (2009 Ecology & Environment, Inc.)
- Monitoring Well (2015 HAI)
- Soil Boring (2015 HAI)
- Soil Boring (2016 HAI)
- Soil Gas Boring (2016 HAI)
- Test Pit (2017 MFA)

2018 MFA Sample Locations

- Soil Boring
- Soil and Reconnaissance Groundwater Boring

Figure 2 Sample Locations Port of Vancouver

Port of Vancouver Terminal 1, Block A Vancouver, Washington





ATTACHMENT A

BORING LOGS



							G	eologic	Borehole Log/Well Construction			
Mau	I Foster &	Alo	ngi, I	Inc.		Project I 9085.	Numbo 10.07	er	Well Number GP-1	Sheet 1 of 1		
Proj Proj Star Drill Geo San	Project NamePort of VancourProject LocationBlock A, TerminStart/End Date1/30/2018 to 1/3Driller/EquipmentPacific Soil andGeologist/EngineerCody SchweitzerSample MethodMacrocore				er al 1, V V2018 Water r/Emil	′ancouver, V ;; C. Watson/ y Hess	Vashii /GeoF	ngton Probe 6600	TOC Elevation (feet) Surface Elevation (feet) Northing Easting Hole Depth 12.0-feet Outer Hole Diam			
h BGS)	Well Details	/al	ent very	ction od SS	ample	Data	s/6"	logic mn	Soil Descriptio	n		
Dept. (feet,		Inter	Perce Recc	Colle Meth	Num	Name (Type)	Blow	Litho Colui				
1			40	GP	ŀ	GP1-S-2.0 PID = 0.3 ppr	n		0.0 to 0.5 feet: ASPHALT; black. 0.5 to 2.0 feet: GRAVELLY/SILTY SA fines; 50% sand, fine to coarse; rock fragments; moist. @ 1.5 feet: Brick fragment. 2.0 to 5.0 feet: No recovery.	AND (SP); grayish brown; 20% 30% gravel, fine to coarse; trace		
4 5 6 7 8			- 40	GP	ŀ	GP1-S-7.0 PID = 0.0 ppr	n		5.0 to 7.0 feet: SILTY/GRAVELLY SA 50% sand, fine to coarse; 20% g fragments; moist. 7.0 to 10.0 feet: No recovery.	AND (SM); brown; 30% fines; ravel, fine to coarse; trace rock		
9 10 11 12	Ī	<u>_</u>	- 50	GP	ŀ	GP1-S-11.0 PID = 0.0 ppr	n		10.0 to 11.0 feet: SANDY GRAVEL V 10% fines; 20% sand; 70% grave 11.0 to 12.0 feet: No recovery. @ 12.0 feet: Refusal.	VITH SILT (GP); blackish brown; al, fine to coarse; wet.		
									Total Depth = 12.0 feet bgs. Borehole Details:			
									Description Details: 0.0 to 12.0 feet bgs: 2.25-inch boreho Borehole Abandonment Details: 0.0 to 0.4 feet bgs: Asphalt. 0.4 to 1.0 feet bgs: Pea gravel. 1.0 to 1.5 feet bgs: Concrete. 1.5 to 12.0 feet bgs: Bentonite chips	ble. hydrated with potable water.		
NOTE	5 : 1. bgs = belo 5. PID = phot	w grou toioniza	ınd surfa ation det	ce. 2. (ector, s	GP = G oil hea	Geoprobe macr d space readir	o-core ng in p	sampler. 3. om.	Depths are approximate and relative to fee	et bgs. 4. ppm = parts per million.		

			Seologic	c Borehole Log/Well Construction			
/laul ⊢oster &	Alongi, Inc.	Project Num 9085.10.0	ber 7	Well Number GP-2	Sheet 1 of 2		
Project Name Project Location Start/End Date Driller/Equipment Geologist/Engineer Sample Method	Port of Vancouv Block A, Termir 1/30/2018 to 1/3 Pacific Soil and Cody Schweitze Macrocore	ver pal 1, Vancouver, Wash 0/2018 Water; C. Watson/Geo pr/Emily Hess	nington Probe 6600	TOC Elevation (feet) Surface Elevation (feet) Northing Easting Hole Depth 30.0- Outer Hole Diam 2.25-			
S Well	<u>ر ج</u> ۲	ample Data	0	Soil Descriptior	1		
Details (feet: BG (feet: BC)	Interval Percent Recovery Collection Method	Name (Type)	Lithologic Column				
	50 GP			0.0 to 0.5 feet: ASPHALT; black.			
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		GP2-S-2.5 PID = 0.0 ppm	0000 0000 0000 0000 0000	0.0 to 2.5 feet: SANDY/SILTY GRAVE fines; 30% sand, medium to coars fragments; moist.	L (GP); grayish brown; 20% e; 50% gravel; trace rock		
3				2.5 to 5.0 feet: No recovery.			
6	75 GP		00000	5.0 to 6.2 feet: SANDY GRAVEL WITH brown; 10% fines; 30% sand, fine coarse, subangular; trace rock fra	H SILT (GP); dark gray to to medium; 60% gravel, fine t gments; moist to wet.		
8		GP2-S-8.0 PID = 0.0 ppm		6.2 to 8.5 feet: GRAVELLY/SANDY SI fines; 20% sand, fine to medium; 2	LT (ML); blackish brown; 60% 20% gravel, coarse; moist.		
9				8.5 to 10.0 feet: No recovery.			
10	- 80 GP			10.0 to 14.0 feet: SILT (ML); dark gray	; 100% fines; moist		
12		GP2-S-13.0 PID = 0.0 ppm		@ 12.0 feet: Brown with orange mottlin	ng.		
4				14.0 to 15.0 feet: No recovery.			
16	100 GP			15.0 to 20.0: SILT (ML); brown; 100%	fines; moist.		
17		PID = 0.0 ppm					
19							

					G	eologic	Borehole Log/Well Construction				
Mau	I Foster & A	lo	ngi, I	Inc.		Project I	Numb	er	Well Number	Sheet	
			0 /		9085.10.07 GP-2 2 of					2 of 2	
(S)	Well		<u> </u>	Sample Data					Soil Description		
th BG	Details	val	ent over	ectio	ber		/s/6"	ologi mn			
Dep (feet		Intei	Perc Rec	Coll	Nun	Name (Type)	Blov	Lithc Colu			
	×××××××××××				1	-					
21			50	GW GP				0000	20.0 to 22.5 feet: SILTY/SANDY GRA 20% sand; 50% gravel, fine to co	VEL (GM); brown; 30% fines; arse; trace cobble; moist to wet.	
E	\rightarrow					PID = 0.0 ppr	n	0000			
22								0000		-	
Ē								Leper.	22.5 to 25.0 feat: No recovery		
E_ 23									22.3 to 23.0 leet. No recovery.	-	
E a											
E_ 24										-	
25											
Ē				GP					25.0 to 30.0 feet: No recovery; advan	ce drill rig without soil collection.	
26											
E						GP2-W-26.0					
27										-	
Ē											
E 28										_	
E 29											
<u> </u>										-	
Ē 30											

Total Depth = 30.0 feet bgs.

Borehole Details: 0.0 to 30.0 feet bgs: 2.25-inch borehole.

Borehole Abandonment Details:

0.0 to 0.4 feet bgs: Asphalt. 0.4 to 1.0 feet bgs: Pea gravel.

1.0 to 1.5 feet bgs: Concrete. 1.5 to 30.0 feet bgs: Bentonite chips hydrated with potable water.

NOTES: 1. bgs = below ground surface. 2. GP = Geoprobe macro-core sampler. 3. Depths are approximate and relative to feet bgs. 4. ppm = parts per million. 5. PID = photoionization detector, soil head space reading in ppm. 6. GW = groundwater sample; dashed graphic indicates screened interval. Temporary polyvinyl chloride screen from 20.0 to 30.0 feet bgs.

						Ge	eologic	Borehole Log/Well Construction			
	Mau	I Foster &	Alongi, l	nc.	Project 9085 .	Numbe 10.07	er	Well Number GP-3	Sheet 1 of 1		
	Proje Proje Start Drille Geol Sam	ect Name ect Location t/End Date er/Equipment logist/Engineer ple Method	Port of Van Block A, Te 1/30/2018 to Pacific Soil Cody Schw Macrocore	couve ermina o 1/30, and V reitzer	er al 1, Vancouver, V /2018 Water; C. Watson /Emily Hess	Vashir /GeoP	ngton Probe 6600	TOC Elevation (fee Surface Elevation (Northing Easting Hole Depth Outer Hole Diam	t) feet) 15.0-feet 2.25-inch		
	(SS	Well	~	s Sa	mple Data	,	U.	Soil Description	1		
	Depth (feet, BC	Details	Interval Percent Recover	Collectic Method	Name (Type)	Blows/6	Lithologi Column				
Ē			80	GP				0.0 to 0.5 feet: ASPHALT; black.			
	1 2 3				GP3-S-4.0 PID = 0.0 pp	m		0.5 to 1.0 feet: GRAVEL WITH SAND sand; 80% gravel; trace rock fragr 1.0 to 4.0 feet: SAND (SW); reddish gi sand, medium to coarse; moist. M	(GP); dark gray; 5% fines; 15% nents; wet. ay to black; 5% fines; 95% etal in shoe.		
	4							4.0 to 5.0 feet: No recovery.			
	5		40	GP				5.0 to 6.0 feet: SAND (SW); reddish qr	ay to black; 5% fines; 95%		
	6				GP3-S-6.5 PID = 0.0 pp	m	0 0 0	sand, medium to coarse; moist.	, , ,		
	7				PID = 0.0 pp.	m		6.0 to 6.5 feet: SANDY GRAVEL WITH 	H SILT (GP-GM); reddish brown; ; moist h brown; 70% organics, wood		
	9 10 11 12 13		- 80	GP	PID = 0.0 pp GP3-S-14.0 PID = 0.0 pp	m		 10.0 to 10.8 feet: SAND (SW); dark gr. sand, medium to very coarse; 109 10.8 to 12.2 feet: SANDY SILT (SW-S, fines; 50% sand, fine to medium; t 2.2 feet: Brick fragments. 12.2 to 14.0 feet: SILT (ML); dark gray wet. 0.13.4 feet: Brown with orange motili 	ay to brown; 5% fines; 85% 6 gravel; moist. M); brown to dark gray; 50% race wood splinters; moist. ; 100% fines; very stiff; moist to		
1/18	_ 14								19. 		
4/1	-							14.0 to 15.0 feet: No recovery.			
LOCK A.GPJ	_ 15							Total Depth = 15.0 feet bgs.			
10.07 B								Borehole Details: 0.0 to 15.0 feet bgs: 2.25-inch borehole	e.		
9085.								Borehole Abandonment Details:			
PROJECTS/9085.10/								0.0 to 0.4 feet bgs: Asphalt. 0.4 to 1.0 feet bgs: Pea gravel. 1.0 to 1.5 feet bgs: Concrete. 1.5 to 15.0 feet bgs: Bentonite chips hy	ydrated with potable water.		
INTWF											
3BLWC W:\GINT\GI	NOTE	S: 1. bgs = belov 5. PID = photo	v ground surfac pionization dete	e. 2. (ector, se	GP = Geoprobe mac. oil head space readi.	ro-core ng in pp	sampler. 3. om.	Depths are approximate and relative to feet	bgs. 4. ppm = parts per million.		

ATTACHMENT B

GROUNDWATER FIELD SAMPLING DATA SHEET



Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	Port of Vancouver	Sample Location	GP-2		
Project #	9085.10.07	Sampler	Emily Hess/Cody Schweitzer		
Project Name	Block A - Terminal 1	Sampling Date	1/30/2018		
Sampling Event	January 2018	Sample Name	GP2-W-26.0		
Sub Area		Sample Depth	29.5		
FSDS QA:	Emily Hess, 2/5/18	Easting	Northing		

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW	Pore Volume
1/30/2018	10:35	30		21.2		8.8	1.43

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate l/min	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity
(2) Peristaltic Pump	10:45:00 AM	0.5	0.22	6.42	14.3	407.4	2.35	133.1	731.3
	10:50:00 AM	1	0.2	6.4	14.2	390	2.26	113.7	447.1
	10:55:00 AM	1.5	0.2	6.39	14.1	381.1	2.25	99.3	291.1
Final Field Parameters	11:00:00 AM	2	0.2	6.41	14.2	385	2.19	84.4	272.1

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water (Quality	Observations:	Cloudy; slight yellow tint.
---------	---------	----------------------	-----------------------------

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
(2) Peristaltic Pump	Groundwater	11:00:00 AM	VOA-Glass	3	No
			Amber Glass	2	No
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly	1	No
			Red Dissolved Poly	1	Yes
			Total Bottles	7	

General Sampling Comments

Began purging at 10:40 AM. Field filtered for dissoved metals.

Signature

ATTACHMENT C

LABORATORY ANALYTICAL REPORT





12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 EPA ID: OR01039

AMENDED REPORT

Tuesday, May 8, 2018

David Weatherby Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

RE: A8A0991 - 9085.10.07

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

Enclosed are the results of analyses for work order A8A0991, which was received by the laboratory on 1/31/2018 at 10:37:00AM.

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

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

7

Maul Foster & Alongi, INC.	Project: POV-Block A	
2001 NW 19th Ave, STE 200	Project Number: 9085.10.07	Report ID:
Portland, OR 97209	Project Manager: David Weatherby	A8A0991 - 050818 0340

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION								
Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received				
GP1-S-2.0	A8A0991-01	Soil	01/30/18 08:30	01/31/18 10:37				
GP1-S-7.0	A8A0991-02	Soil	01/30/18 08:40	01/31/18 10:37				
GP1-S-11.0	A8A0991-03	Soil	01/30/18 08:45	01/31/18 10:37				
GP2-S-2.5	A8A0991-04	Soil	01/30/18 09:49	01/31/18 10:37				
GP2-S-13.0	A8A0991-06	Soil	01/30/18 10:10	01/31/18 10:37				
GP2-W-26.0	A8A0991-07	Water	01/30/18 11:00	01/31/18 10:37				
GP3-S-4.0	A8A0991-08	Soil	01/30/18 09:03	01/31/18 10:37				
GP3-S-14.0	A8A0991-10	Soil	01/30/18 09:30	01/31/18 10:37				

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC.Project:POV-Block A2001 NW 19th Ave, STE 200Project Number:9085.10.07Report ID:Portland, OR 97209Project Manager:David WeatherbyA8A0991 - 050818 0340

ANALYTICAL CASE NARRATIVE

Work Order: A8A0991

Amended Report Revision 1:

This report supersedes all previous reports.

Analysis of TCLP lead on GP1-S-11.0 and total lead on GP1-S-7.0 were added after the previous report version had been completed.

Philip Nerenberg Lab Director 5/8/18

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

Γ

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

	Die	esel and/or Oil	Hydrocarb	ons by NWTF	PH-Dx			
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP1-S-2.0 (A8A0991-01)		Matrix: S	Soil	E	Batch: 8020)433		
Diesel	ND		25.0	mg/kg dry	1	02/06/18	NWTPH-Dx	
Oil	90.6		50.0	mg/kg dry	1	02/06/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recovery: 96 %	Limits:	50-150 %	I	02/06/18	NWTPH-Dx	
GP1-S-11.0 (A8A0991-03)		Matrix: S	Soil	E	Batch: 8020)433		
Diesel	68.0		25.0	mg/kg dry	1	02/06/18	NWTPH-Dx	F-1
Oil	ND		50.0	mg/kg dry	1	02/06/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recovery: 90 %	Limits:	50-150 %	1	02/06/18	NWTPH-Dx	
GP2-S-2.5 (A8A0991-04)		Matrix: S	Soil	Batch: 8020433				
Diesel	ND		25.0	mg/kg dry	1	02/06/18	NWTPH-Dx	
Oil	ND		50.0	mg/kg dry	1	02/06/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recovery: 92 %	Limits:	50-150 %	1	02/06/18	NWTPH-Dx	
GP2-S-13.0 (A8A0991-06)		Matrix: S	Soil	Batch: 8020433)433		
Diesel	ND		25.4	mg/kg dry	1	02/07/18	NWTPH-Dx	
Oil	ND		50.8	mg/kg dry	1	02/07/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recovery: 68 %	Limits:	50-150 %	1	02/07/18	NWTPH-Dx	
GP2-W-26.0 (A8A0991-07)		Matrix: V	Vater	E	Batch: 8020338			
Diesel	ND		0.200	mg/L	1	02/03/18	NWTPH-Dx	
Oil	ND		0.400	mg/L	1	02/03/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recovery: 91 %	Limits:	50-150 %	1	02/03/18	NWTPH-Dx	
GP3-S-4.0 (A8A0991-08)		Matrix: Soil		Batch: 8020433)433		
Diesel	ND		25.0	mg/kg dry	1	02/07/18	NWTPH-Dx	
Oil	ND		50.0	mg/kg dry	1	02/07/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		Recovery: 90 %	Limits:	50-150 %	1	02/07/18	NWTPH-Dx	

Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx									
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
GP3-S-14.0 (A8A0991-10)		Matrix: Soil		Batch: 8020433					
Diesel	ND		26.6	mg/kg dry	1	02/07/18	NWTPH-Dx		
Oil	ND		53.2	mg/kg dry	1	02/07/18	NWTPH-Dx		
Surrogate: o-Terphenyl (Surr)		Recovery: 81 %	Limits:	50-150 %	1	02/07/18	NWTPH-Dx		

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

F

AMENDED REPORT

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

Gasol	Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx										
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes			
GP1-S-2.0 (A8A0991-01)		Matrix:	Soil	E	Batch: 8011	213					
Gasoline Range Organics	ND		4.93	mg/kg dry	50	01/31/18	NWTPH-Gx (MS)				
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 101	% Limits:	50-150 %	1	01/31/18	NWTPH-Gx (MS)				
1,4-Difluorobenzene (Sur)		95	%	50-150 %	1	01/31/18	NWTPH-Gx (MS)				
GP1-S-11.0 (A8A0991-03)		Matrix:	Soil	E	Batch: 8011	213					
Gasoline Range Organics	ND		5.96	mg/kg dry	50	01/31/18	NWTPH-Gx (MS)				
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 105	% Limits:	50-150 %	1	01/31/18	NWTPH-Gx (MS)				
1,4-Difluorobenzene (Sur)		96	%	50-150 %	1	01/31/18	NWTPH-Gx (MS)				
GP2-S-2.5 (A8A0991-04)		Matrix:	Soil	E	Batch: 8020)286					
Gasoline Range Organics	ND		5.44	mg/kg dry	50	02/01/18	NWTPH-Gx (MS)				
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 98	% Limits:	50-150 %	1	02/01/18	NWTPH-Gx (MS)				
1,4-Difluorobenzene (Sur)		90	%	50-150 %	1	02/01/18	NWTPH-Gx (MS)				
GP2-S-13.0 (A8A0991-06)		Matrix: Soil		Batch: 8011213							
Gasoline Range Organics	ND		6.85	mg/kg dry	50	01/31/18	NWTPH-Gx (MS)				
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 101	% Limits:	50-150 %	1	01/31/18	NWTPH-Gx (MS)				
1,4-Difluorobenzene (Sur)		94	%	50-150 %	1	01/31/18	NWTPH-Gx (MS)				
GP2-W-26.0 (A8A0991-07)		Matrix: Water		Batch: 8011218							
Gasoline Range Organics	ND		0.100	mg/L	1	01/31/18	NWTPH-Gx (MS)				
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 110	% Limits:	50-150 %	1	01/31/18	NWTPH-Gx (MS)				
1,4-Difluorobenzene (Sur)		115	%	50-150 %	1	01/31/18	NWTPH-Gx (MS)				
GP3-S-4.0 (A8A0991-08)		Matrix:	Soil	E	Batch: 8011	213					
Gasoline Range Organics	ND		7.09	mg/kg dry	50	01/31/18	NWTPH-Gx (MS)				
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 99	% Limits:	50-150 %	1	01/31/18	NWTPH-Gx (MS)				
1,4-Difluorobenzene (Sur)		95	%	50-150 %	1	01/31/18	NWTPH-Gx (MS)				

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

<u>Maul Foster & Alongi, INC.</u> 2001 NW 19th Ave, STE 200 Portland, OR 97209 AMENDED REPORT

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx									
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
GP3-S-14.0 (A8A0991-10)		Matrix:	E	Batch: 8011	213				
Gasoline Range Organics	ND		7.18	mg/kg dry	50	01/31/18	NWTPH-Gx (MS)		
Surrogate: 4-Bromofluorobenzene (Sur)		Recovery: 101	% Limits:	50-150 %	1	01/31/18	NWTPH-Gx (MS)		
1,4-Difluorobenzene (Sur)		96	%	50-150 %	1	01/31/18	NWTPH-Gx (MS)		

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

<u>Maul Foster & Alongi, INC.</u>	Project: POV-Block A	
2001 NW 19th Ave, STE 200	Project Number: 9085.10.07	Report ID:
Portland, OR 97209	Project Manager: David Weatherby	A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C								
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP2-W-26.0 (A8A0991-07)		Matrix: Water		Batch: 8011218				
Acetone	ND		20.0	ug/L	1	01/31/18	EPA 8260C	
Acrylonitrile	ND		2.00	ug/L	1	01/31/18	EPA 8260C	
Benzene	ND		0.200	ug/L	1	01/31/18	EPA 8260C	
Bromobenzene	ND		0.500	ug/L	1	01/31/18	EPA 8260C	
Bromochloromethane	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
Bromodichloromethane	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
Bromoform	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
Bromomethane	ND		5.00	ug/L	1	01/31/18	EPA 8260C	
2-Butanone (MEK)	ND		10.0	ug/L	1	01/31/18	EPA 8260C	
n-Butylbenzene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
sec-Butylbenzene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
tert-Butylbenzene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
Carbon disulfide	ND		10.0	ug/L	1	01/31/18	EPA 8260C	
Carbon tetrachloride	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
Chlorobenzene	ND		0.500	ug/L	1	01/31/18	EPA 8260C	
Chloroethane	ND		10.0	ug/L	1	01/31/18	EPA 8260C	
Chloroform	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
Chloromethane	ND		5.00	ug/L	1	01/31/18	EPA 8260C	
2-Chlorotoluene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
4-Chlorotoluene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
Dibromochloromethane	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	01/31/18	EPA 8260C	
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1	01/31/18	EPA 8260C	
Dibromomethane	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
1,2-Dichlorobenzene	ND		0.500	ug/L	1	01/31/18	EPA 8260C	
1,3-Dichlorobenzene	ND		0.500	ug/L	1	01/31/18	EPA 8260C	
1,4-Dichlorobenzene	ND		0.500	ug/L	1	01/31/18	EPA 8260C	
Dichlorodifluoromethane	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
1,1-Dichloroethane	ND		0.400	ug/L	1	01/31/18	EPA 8260C	
1,2-Dichloroethane (EDC)	ND		0.400	ug/L	1	01/31/18	EPA 8260C	

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC.	Project: POV-Block A	
2001 NW 19th Ave, STE 200	Project Number: 9085.10.07	Report ID:
Portland, OR 97209	Project Manager: David Weatherby	A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C								
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP2-W-26.0 (A8A0991-07)		Matrix: Water			Batch: 8011	218		
1,1-Dichloroethene	ND		0.400	ug/L	1	01/31/18	EPA 8260C	
cis-1,2-Dichloroethene	ND		0.400	ug/L	1	01/31/18	EPA 8260C	
trans-1,2-Dichloroethene	ND		0.400	ug/L	1	01/31/18	EPA 8260C	
1,2-Dichloropropane	ND		0.500	ug/L	1	01/31/18	EPA 8260C	
1,3-Dichloropropane	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
2,2-Dichloropropane	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
1,1-Dichloropropene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
cis-1,3-Dichloropropene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
trans-1,3-Dichloropropene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
Ethylbenzene	ND		0.500	ug/L	1	01/31/18	EPA 8260C	
Hexachlorobutadiene	ND		5.00	ug/L	1	01/31/18	EPA 8260C	
2-Hexanone	ND		10.0	ug/L	1	01/31/18	EPA 8260C	
Isopropylbenzene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
4-Isopropyltoluene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
Methylene chloride	ND		3.00	ug/L	1	01/31/18	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1	01/31/18	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
Naphthalene	ND		2.00	ug/L	1	01/31/18	EPA 8260C	
n-Propylbenzene	ND		0.500	ug/L	1	01/31/18	EPA 8260C	
Styrene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND		0.400	ug/L	1	01/31/18	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1	01/31/18	EPA 8260C	
Tetrachloroethene (PCE)	ND		0.400	ug/L	1	01/31/18	EPA 8260C	
Toluene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
1,2,3-Trichlorobenzene	ND		2.00	ug/L	1	01/31/18	EPA 8260C	
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1	01/31/18	EPA 8260C	
1,1,1-Trichloroethane	ND		0.400	ug/L	1	01/31/18	EPA 8260C	
1,1,2-Trichloroethane	ND		0.500	ug/L	1	01/31/18	EPA 8260C	
Trichloroethene (TCE)	ND		0.400	ug/L	1	01/31/18	EPA 8260C	
Trichlorofluoromethane	ND		2.00	ug/L	1	01/31/18	EPA 8260C	

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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

 Maul Foster & Alongi, INC.
 Project:
 POV-Block A

 2001 NW 19th Ave, STE 200
 Project Number:
 9085.10.07
 Report ID:

 Portland, OR 97209
 Project Manager:
 David Weatherby
 A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C								
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP2-W-26.0 (A8A0991-07)		Matrix:	Water		Batch: 8011	218		
1,2,3-Trichloropropane	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
Vinyl chloride	ND		0.400	ug/L	1	01/31/18	EPA 8260C	
m,p-Xylene	ND		1.00	ug/L	1	01/31/18	EPA 8260C	
o-Xylene	ND		0.500	ug/L	1	01/31/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery: 114 %	6 Limits:	80-120 %	1	01/31/18	EPA 8260C	
Toluene-d8 (Surr)		98 %	6	80-120 %	1	01/31/18	EPA 8260C	
4-Bromofluorobenzene (Surr)		100 %	6	80-120 %	1	01/31/18	EPA 8260C	

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Philip Nevenberg

Philip Nerenberg, Lab Director


12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC.Project:POV-Block A2001 NW 19th Ave, STE 200Project Number:9085.10.07Report ID:Portland, OR 97209Project Manager:David WeatherbyA8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A									
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
GP1-S-2.0 (A8A0991-01)		Matrix: Soil		Batch: 8020280				C-07	
Aroclor 1016	ND		10.1	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1221	ND		10.1	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1232	ND		10.1	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1242	ND		10.1	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1248	ND		10.1	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1254	ND		10.1	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1260	ND		10.1	ug/kg dry	1	02/02/18	EPA 8082A		
Surrogate: Decachlorobiphenyl (Surr)		Recovery: 87 %	Limits:	72-126 %	1	02/02/18	EPA 8082A		

GP1-S-11.0 (A8A0991-03)		Matrix: So	Batch: 8020280				C-07	
Aroclor 1016	ND		11.9	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1221	ND		11.9	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1232	ND		11.9	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1242	ND		11.9	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1248	ND		11.9	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1254	ND		11.9	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1260	ND		11.9	ug/kg dry	1	02/02/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		Recovery: 83 %	Limits:	72-126 %	1	02/02/18	EPA 8082A	

GP2-S-2.5 (A8A0991-04)		Matrix: Soi	Batch: 8020280			0280		C-07
Aroclor 1016	ND		11.0	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1221	ND		11.0	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1232	ND		11.0	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1242	ND		11.0	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1248	ND		11.0	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1254	ND		11.0	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1260	ND		11.0	ug/kg dry	1	02/02/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		Recovery: 92 %	Limits:	72-126 %	1	02/02/18	EPA 8082A	

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC.Project:POV-Block A2001 NW 19th Ave, STE 200Project Number:9085.10.07Report ID:Portland, OR 97209Project Manager:David WeatherbyA8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A									
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
GP2-S-13.0 (A8A0991-06)		Matrix: Soil		Batch: 8020280				C-07	
Aroclor 1016	ND		12.9	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1221	ND		12.9	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1232	ND		12.9	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1242	ND		12.9	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1248	ND		12.9	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1254	ND		12.9	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1260	ND		12.9	ug/kg dry	1	02/02/18	EPA 8082A		
Surrogate: Decachlorobiphenyl (Surr)		Recovery: 73 %	Limits:	72-126 %	1	02/02/18	EPA 8082A		

GP3-S-4.0 (A8A0991-08)		Matrix: So	I Batch: 8020280			20280)		
Aroclor 1016	ND		10.3	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1221	ND		10.3	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1232	ND		10.3	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1242	ND		10.3	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1248	ND		10.3	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1254	ND		10.3	ug/kg dry	1	02/02/18	EPA 8082A		
Aroclor 1260	ND		10.3	ug/kg dry	1	02/02/18	EPA 8082A		
Surrogate: Decachlorobiphenyl (Surr)		Recovery: 92 %	Limits:	72-126 %	1	02/02/18	EPA 8082A		

GP3-S-14.0 (A8A0991-10)		Matrix: Soil		Ba	tch: 802	0280		
Aroclor 1016	ND		12.5	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1221	ND		12.5	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1232	ND		12.5	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1242	ND		12.5	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1248	ND		12.5	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1254	ND		12.5	ug/kg dry	1	02/02/18	EPA 8082A	
Aroclor 1260	ND		12.5	ug/kg dry	1	02/02/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		Recovery: 79 %	Limits:	72-126 %	1	02/02/18	EPA 8082A	

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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 EPA ID: OR01039

<u>Maul Foster & Alongi, INC.</u>	Project: POV-Block A	
2001 NW 19th Ave, STE 200	Project Number: 9085.10.07	Report ID:
Portland, OR 97209	Project Manager: David Weatherby	A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D									
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
GP1-S-2.0 (A8A0991-01RE1)		Matrix	: Soil	E	Batch: 8020	0650			
Acenaphthene	ND		27.7	ug/kg dry	10	02/14/18	EPA 8270D		
Acenaphthylene	ND		27.7	ug/kg dry	10	02/14/18	EPA 8270D		
Anthracene	ND		27.7	ug/kg dry	10	02/14/18	EPA 8270D		
Benz(a)anthracene	39.2		27.7	ug/kg dry	10	02/14/18	EPA 8270D	M-05, Q-42	
Benzo(a)pyrene	58.5		41.4	ug/kg dry	10	02/14/18	EPA 8270D		
Benzo(b)fluoranthene	53.5		41.4	ug/kg dry	10	02/14/18	EPA 8270D	M-05, Q-42	
Benzo(k)fluoranthene	ND		41.4	ug/kg dry	10	02/14/18	EPA 8270D	Q-42	
Benzo(g,h,i)perylene	39.2		27.7	ug/kg dry	10	02/14/18	EPA 8270D		
Chrysene	56.4		27.7	ug/kg dry	10	02/14/18	EPA 8270D	M-05, Q-42	
Dibenz(a,h)anthracene	ND		27.7	ug/kg dry	10	02/14/18	EPA 8270D		
Fluoranthene	79.0		27.7	ug/kg dry	10	02/14/18	EPA 8270D	Q-42	
Fluorene	ND		27.7	ug/kg dry	10	02/14/18	EPA 8270D		
Indeno(1,2,3-cd)pyrene	41.4		27.7	ug/kg dry	10	02/14/18	EPA 8270D		
1-Methylnaphthalene	ND		55.2	ug/kg dry	10	02/14/18	EPA 8270D		
2-Methylnaphthalene	ND		55.2	ug/kg dry	10	02/14/18	EPA 8270D		
Naphthalene	ND		55.2	ug/kg dry	10	02/14/18	EPA 8270D		
Phenanthrene	31.0		27.7	ug/kg dry	10	02/14/18	EPA 8270D	Q-42	
Pyrene	75.1		27.7	ug/kg dry	10	02/14/18	EPA 8270D	Q-42	
Carbazole	ND		41.4	ug/kg dry	10	02/14/18	EPA 8270D		
Dibenzofuran	ND		27.7	ug/kg dry	10	02/14/18	EPA 8270D		
Surrogate: Nitrobenzene-d5 (Surr)		Recovery: 8	4 % Limits:	37-122 %	10	02/14/18	EPA 8270D		
2-Fluorobiphenyl (Surr)		8	2 %	44-115 %	10	02/14/18	EPA 8270D		
Phenol-d6 (Surr)		9	4 %	33-122 %	10	02/14/18	EPA 8270D		
p-Terphenyl-d14 (Surr)		9	3 %	54-127 %	10	02/14/18	EPA 8270D		
2-Fluorophenol (Surr)		9	7 %	35-115 %	10	02/14/18	EPA 8270D		
2,4,6-Tribromophenol (Surr)		8	6 %	39-132 %	10	02/14/18	EPA 8270D		
GP1-S-11.0 (A8A0991-03)		Matrix	: Soil	E	Batch: 8020	0650			
Acenaphthene	ND		3.04	ug/kg dry	1	02/14/18	EPA 8270D		

3.04

ug/kg dry

ND

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Acenaphthylene

Philip Nevenberg

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.

02/14/18

EPA 8270D

1



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC.	Project: POV-Block A	
2001 NW 19th Ave, STE 200	Project Number: 9085.10.07	Report ID:
Portland, OR 97209	Project Manager: David Weatherby	A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

		D ()	D (D.		
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref	Notes
								1.000
GP1-S-11.0 (A8A0991-03)		Matrix	Soil	E	Batch: 8020	650		
Anthracene	ND		3.04	ug/kg dry	1	02/14/18	EPA 8270D	
Benz(a)anthracene	5.41		3.04	ug/kg dry	1	02/14/18	EPA 8270D	M-05
Benzo(a)pyrene	7.66		4.56	ug/kg dry	1	02/14/18	EPA 8270D	
Benzo(b)fluoranthene	8.90		4.56	ug/kg dry	1	02/14/18	EPA 8270D	M-05
Benzo(k)fluoranthene	ND		4.56	ug/kg dry	1	02/14/18	EPA 8270D	
Benzo(g,h,i)perylene	6.96		3.04	ug/kg dry	1	02/14/18	EPA 8270D	
Chrysene	6.33		3.04	ug/kg dry	1	02/14/18	EPA 8270D	M-05
Dibenz(a,h)anthracene	ND		3.04	ug/kg dry	1	02/14/18	EPA 8270D	
Fluoranthene	8.63		3.04	ug/kg dry	1	02/14/18	EPA 8270D	
Fluorene	ND		3.04	ug/kg dry	1	02/14/18	EPA 8270D	
Indeno(1,2,3-cd)pyrene	6.81		3.04	ug/kg dry	1	02/14/18	EPA 8270D	
1-Methylnaphthalene	ND		6.08	ug/kg dry	1	02/14/18	EPA 8270D	
2-Methylnaphthalene	ND		6.08	ug/kg dry	1	02/14/18	EPA 8270D	
Naphthalene	ND		6.08	ug/kg dry	1	02/14/18	EPA 8270D	
Phenanthrene	10.3		3.04	ug/kg dry	1	02/14/18	EPA 8270D	
Pyrene	9.78		3.04	ug/kg dry	1	02/14/18	EPA 8270D	
Carbazole	ND		4.56	ug/kg dry	1	02/14/18	EPA 8270D	
Dibenzofuran	ND		3.99	ug/kg dry	1	02/14/18	EPA 8270D	R-02
Surrogate: Nitrobenzene-d5 (Surr)		Recovery: 76	% Limits:	37-122 %	I	02/14/18	EPA 8270D	
2-Fluorobiphenyl (Surr)		73	%	44-115 %	1	02/14/18	EPA 8270D	
Phenol-d6 (Surr)		83	%	33-122 %	1	02/14/18	EPA 8270D	
p-Terphenyl-d14 (Surr)		90	%	54-127 %	1	02/14/18	EPA 8270D	
2-Fluorophenol (Surr)		72	%	35-115 %	1	02/14/18	EPA 8270D	
2,4,6-Tribromophenol (Surr)		98	%	39-132 %	1	02/14/18	EPA 8270D	

GP2-W-26.0 (A8A0991-07RE2)		Matrix: Water			20372		
ND		0.0200	ug/L	1	02/05/18	EPA 8270D	
ND		0.0200	ug/L	1	02/05/18	EPA 8270D	
ND		0.0200	ug/L	1	02/05/18	EPA 8270D	
0.0338		0.0200	ug/L	1	02/05/18	EPA 8270D	M-05
	ND ND ND 0.0338	Matrix: ND ND ND 0.0338	Matrix: Water ND 0.0200 ND 0.0200 ND 0.0200 ND 0.0200 0.0338 0.0200	Matrix: Water B ND 0.0200 ug/L ND 0.0200 ug/L ND 0.0200 ug/L 0.0338 0.0200 ug/L	Matrix: Water Batch: 802 ND 0.0200 ug/L 1 ND 0.0200 ug/L 1 ND 0.0200 ug/L 1 ND 0.0200 ug/L 1 0.0338 0.0200 ug/L 1	Matrix: Water Batch: 8020372 ND 0.0200 ug/L 1 02/05/18 0.0338 0.0200 ug/L 1 02/05/18	Matrix: Water Batch: 8020372 ND 0.0200 ug/L 1 02/05/18 EPA 8270D 0.0338 0.0200 ug/L 1 02/05/18 EPA 8270D

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC.Project:POV-Block A2001 NW 19th Ave, STE 200Project Number:9085.10.07Report ID:Portland, OR 97209Project Manager:David WeatherbyA8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D								
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP2-W-26.0 (A8A0991-07RE2)		Matrix:	Water		Batch: 8020)372		
Benzo(a)pyrene	0.0674		0.0300	ug/L	1	02/05/18	EPA 8270D	
Benzo(b)fluoranthene	0.0778		0.0300	ug/L	1	02/05/18	EPA 8270D	M-05
Benzo(k)fluoranthene	0.0367		0.0300	ug/L	1	02/05/18	EPA 8270D	M-05
Benzo(g,h,i)perylene	0.0411		0.0200	ug/L	1	02/05/18	EPA 8270D	
Chrysene	0.0437		0.0200	ug/L	1	02/05/18	EPA 8270D	M-05
Dibenz(a,h)anthracene	ND		0.0200	ug/L	1	02/05/18	EPA 8270D	
Fluoranthene	0.0986		0.0200	ug/L	1	02/05/18	EPA 8270D	
Fluorene	ND		0.0200	ug/L	1	02/05/18	EPA 8270D	
Indeno(1,2,3-cd)pyrene	0.0482		0.0200	ug/L	1	02/05/18	EPA 8270D	
1-Methylnaphthalene	ND		0.0400	ug/L	1	02/05/18	EPA 8270D	
2-Methylnaphthalene	ND		0.0400	ug/L	1	02/05/18	EPA 8270D	
Naphthalene	ND		0.0400	ug/L	1	02/05/18	EPA 8270D	
Phenanthrene	0.0782		0.0200	ug/L	1	02/05/18	EPA 8270D	
Pyrene	0.0804		0.0200	ug/L	1	02/05/18	EPA 8270D	
Carbazole	ND		0.0300	ug/L	1	02/05/18	EPA 8270D	
Dibenzofuran	ND		0.0200	ug/L	1	02/05/18	EPA 8270D	
Surrogate: Nitrobenzene-d5 (Surr)		Recovery: 36	% Limits:	44-120 %	1	02/05/18	EPA 8270D	S-06
2-Fluorobiphenyl (Surr)		39	%	44-120 %	1	02/05/18	EPA 8270D	S-06
Phenol-d6 (Surr)		13	%	10-120 %	1	02/05/18	EPA 8270D	
p-Terphenyl-d14 (Surr)		62	. %	50-133 %	1	02/05/18	EPA 8270D	
2-Fluorophenol (Surr)		20	%	19-120 %	1	02/05/18	EPA 8270D	
2,4,6-Tribromophenol (Surr)		77	%	43-140 %	1	02/05/18	EPA 8270D	

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC.	Project:	POV-Block A	
2001 NW 19th Ave, STE 200	Project Number:	9085.10.07	Report ID:
Portland, OR 97209	Project Manager:	David Weatherby	A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

		Total Met	als by EPA 60	020 (ICPMS)				
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP1-S-2.0 (A8A0991-01)		Matrix	: Soil					
Batch: 8020624								
Barium	130		1.11	mg/kg dry	10	02/13/18	EPA 6020A	
Cadmium	0.232		0.221	mg/kg dry	10	02/13/18	EPA 6020A	
Chromium	11.8		2.21	mg/kg dry	10	02/13/18	EPA 6020A	
Lead	68.0		0.221	mg/kg dry	10	02/13/18	EPA 6020A	
Mercury	ND		0.0884	mg/kg dry	10	02/13/18	EPA 6020A	
Selenium	ND		1.11	mg/kg dry	10	02/13/18	EPA 6020A	
Silver	ND		0.221	mg/kg dry	10	02/13/18	EPA 6020A	
GP1-S-2.0 (A8A0991-01RE1)		Matrix	: Soil					
Batch: 8020624								
Arsenic	2.34		1.11	mg/kg dry	10	02/14/18	EPA 6020A	
GP1-S-7.0 (A8A0991-02)		Matrix	: Soil					
Batch: 8041245								
Lead	46.0		0.218	mg/kg dry	10	04/30/18	EPA 6020A	
GP1-S-11.0 (A8A0991-03)		Matrix	: Soil					
Batch: 8020624								
Arsenic	17.0		2.56	mg/kg dry	10	02/13/18	EPA 6020A	
Barium	654		1.28	mg/kg dry	10	02/13/18	EPA 6020A	
Cadmium	2.26		0.256	mg/kg dry	10	02/13/18	EPA 6020A	
Chromium	26.3		2.56	mg/kg dry	10	02/13/18	EPA 6020A	
Lead	1160		0.256	mg/kg dry	10	02/13/18	EPA 6020A	
Mercury	0.118		0.102	mg/kg dry	10	02/13/18	EPA 6020A	
Selenium	ND		1.28	mg/kg dry	10	02/13/18	EPA 6020A	
Silver	2.41		0.256	mg/kg dry	10	02/13/18	EPA 6020A	
GP2-S-2.5 (A8A0991-04)		Matrix	: Soil					
Batch: 8020624								
Barium	176		1.22	mg/kg dry	10	02/13/18	EPA 6020A	

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Maul Foster & Alongi, INC.

2001 NW 19th Ave, STE 200

Portland, OR 97209

Apex Laboratories, LLC

12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Report ID:

A8A0991 - 050818 0340

Project Number: 9085.10.07

Project: POV-Block A

Project Manager: David Weatherby

ANALYTICAL SAMPLE RESULTS									
Total Metals by EPA 6020 (ICPMS)									
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
GP2-S-2.5 (A8A0991-04)		Matrix	Soil						
Cadmium	0.450		0.243	mg/kg dry	10	02/13/18	EPA 6020A		
Chromium	8.64		2.43	mg/kg dry	10	02/13/18	EPA 6020A		
Lead	7.82		0.243	mg/kg dry	10	02/13/18	EPA 6020A		
Mercury	ND		0.0973	mg/kg dry	10	02/13/18	EPA 6020A		
Selenium	ND		1.22	mg/kg dry	10	02/13/18	EPA 6020A		
Silver	ND		0.243	mg/kg dry	10	02/13/18	EPA 6020A		
GP2-S-2.5 (A8A0991-04RE1)		Matrix	Soil						
Batch: 8020624 Arsenic	1.86		1.22	mg/kg dry	10	02/14/18	EPA 6020A		
GP2-S-13.0 (A8A0991-06)		Matrix	Soil						
Batch: 8020624									
Arsenic	4.81		2.77	mg/kg dry	10	02/13/18	EPA 6020A		
Barium	187		1.38	mg/kg dry	10	02/13/18	EPA 6020A		
Cadmium	0.456		0.277	mg/kg dry	10	02/13/18	EPA 6020A		
Chromium	22.5		2.77	mg/kg dry	10	02/13/18	EPA 6020A		
Lead	33.8		0.277	mg/kg dry	10	02/13/18	EPA 6020A		
Mercury	0.112		0.111	mg/kg dry	10	02/13/18	EPA 6020A		
Selenium	ND		1.38	mg/kg dry	10	02/13/18	EPA 6020A		
Silver	ND		0.277	mg/kg dry	10	02/13/18	EPA 6020A		
GP2-W-26.0 (A8A0991-07)		Matrix	Water						
Batch: 8020573									
Arsenic	2.62		1.00	ug/L	1	02/10/18	EPA 6020A		
Barium	221		1.00	ug/L	1	02/10/18	EPA 6020A		
Cadmium	ND		0.200	ug/L	1	02/10/18	EPA 6020A		
Chromium	10.5		1.00	ug/L	1	02/10/18	EPA 6020A		
Lead	6.91		0.200	ug/L	1	02/10/18	EPA 6020A		
Mercury	ND		0.0800	ug/L	1	02/10/18	EPA 6020A		

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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

l	Maul Foster & Alongi, INC.	Project: <u>POV-Block A</u>	
	2001 NW 19th Ave, STE 200	Project Number: 9085.10.07	Report ID:
	Portland, OR 97209	Project Manager: David Weatherby	A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

		Total Met	als by EPA 60	020 (ICPMS)				
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP2-W-26.0 (A8A0991-07)		Matrix	Water					
Silver	ND		0.200	ug/L	1	02/10/18	EPA 6020A	
GP2-W-26.0 (A8A0991-07RE1)		Matrix	Water					
Batch: 8020573								
Selenium	1.78		1.00	ug/L	1	02/12/18	EPA 6020A	
GP3-S-4.0 (A8A0991-08)		Matrix	Soil					
Batch: 8020624								
Barium	63.8		1.09	mg/kg dry	10	02/14/18	EPA 6020A	
Cadmium	0.250		0.217	mg/kg dry	10	02/14/18	EPA 6020A	
Chromium	4.70		2.17	mg/kg dry	10	02/14/18	EPA 6020A	
Lead	4.53		0.217	mg/kg dry	10	02/14/18	EPA 6020A	
Mercury	ND		0.0869	mg/kg dry	10	02/14/18	EPA 6020A	
Selenium	ND		1.09	mg/kg dry	10	02/14/18	EPA 6020A	
Silver	ND		0.217	mg/kg dry	10	02/14/18	EPA 6020A	
GP3-S-4.0 (A8A0991-08RE1)		Matrix	Soil					
Batch: 8020624								
Arsenic	1.67		1.09	mg/kg dry	10	02/14/18	EPA 6020A	
GP3-S-14.0 (A8A0991-10)		Matrix	Soil					
Batch: 8020624								
Arsenic	6.68		2.90	mg/kg dry	10	02/14/18	EPA 6020A	
Barium	205		1.45	mg/kg dry	10	02/14/18	EPA 6020A	
Cadmium	0.406		0.290	mg/kg dry	10	02/14/18	EPA 6020A	
Chromium	29.7		2.90	mg/kg dry	10	02/14/18	EPA 6020A	
Lead	11.6		0.290	mg/kg dry	10	02/14/18	EPA 6020A	
Mercury	ND		0.116	mg/kg dry	10	02/14/18	EPA 6020A	
Selenium	ND		1.45	mg/kg dry	10	02/14/18	EPA 6020A	
Silver	ND		0.290	mg/kg dry	10	02/14/18	EPA 6020A	

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC.	Project: <u>POV-Block A</u>	
2001 NW 19th Ave, STE 200	Project Number: 9085.10.07	Report ID:
Portland, OR 97209	Project Manager: David Weatherby	A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)												
	Sample	Detection	Reporting	porting Date								
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Notes				

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

I	Maul Foster & Alongi, INC.	Project: POV-Block A
I	2001 NW 19th Ave, STE 200	Project Number: 9085.10.07
	Portland, OR 97209	Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

	TCLP Metals by EPA 6020 (ICPMS)												
SampleDetectionReportingDateAnalyteResultLimitLimitUnitsDilutionAnalyzedMethod Ref.Notes													
GP1-S-11.0 (A8A0991-03)		Matrix:	Soil										
Batch: 8050440 Lead	0.654		0.0500	mg/L	5	05/03/18	1311/6020A						

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

ANALYTICAL SAMPLE RESULTS

		Pe	ercent Dry W	eight				
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP1-S-2.0 (A8A0991-01)		Matrix:	Soil	В	atch: 8020	0346		
% Solids	93.1		1.00	% by Weight	1	02/05/18	EPA 8000C	
GP1-S-7.0 (A8A0991-02)		Matrix:	Soil	В	atch: 8041	1235		
% Solids	95.2		1.00	% by Weight	1	05/01/18	EPA 8000C	
GP1-S-11.0 (A8A0991-03)		Matrix:	Soil	В	atch: 8020)346		
% Solids	83.5		1.00	% by Weight	1	02/05/18	EPA 8000C	
GP2-S-2.5 (A8A0991-04)		Matrix:	Soil	В	atch: 8020)346		
% Solids	88.4		1.00	% by Weight	1	02/05/18	EPA 8000C	
GP2-S-13.0 (A8A0991-06)		Matrix:	Soil	В	atch: 8020)346		
% Solids	74.7		1.00	% by Weight	1	02/05/18	EPA 8000C	
GP3-S-4.0 (A8A0991-08)		Matrix:	Soil	В	atch: 8020)346		
% Solids	93.4		1.00	% by Weight	1	02/05/18	EPA 8000C	
GP3-S-14.0 (A8A0991-10)		Matrix:	Soil	В	atch: 8020)346		
% Solids	74.4		1.00	% by Weight	1	02/05/18	EPA 8000C	

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

Analyte Result Detection Limit Reporting Limit Spike Units Spike Amount Source Result % REC MEC Limits RP Batch 8020338 - EPA 3510C (Fuels/Acid Ext.) Water Water Mater Mater Blank (8020338 - EPA 3510C (Fuels/Acid Ext.) Prepared: 02/02/18 10:26 Analyzed: 02/02/18 21:21 Water NWTPH-Dx Diesel ND 0.182 mg/L 1 <th< th=""><th>RPD D Limit</th><th></th></th<>	RPD D Limit	
Water Batch 8020338 - EPA 3510C (Fuels/Acid Ext.) Water Blank (8020338-BLK1) Prepared: 02/02/18 10:26 Analyzed: 02/02/18 21:21 NUTPH-DX Diesel ND 0.182 mg/L 1 0.182 mg/L 1 0.182 mg/L 1 0.182 mg/L 1 0.364 mg/L 1 0.364 mg/L 1		Notes
Blank (8020338-BLK1) Prepared: 02/02/18 10:26 Analyzed: 02/02/18 21:21 NWTPH-Dx Diesel ND 0.182 mg/L 1 0.182 mg/L 1 0.182 mg/L 1 0.364 mg/L 1 0.364 mg/L 1 1.12 0.200 20/202/18 21:43 ND ND 0.200 1.12 89 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: Ix ND ND <td></td> <td></td>		
NWTPH-Dx Diesel ND 0.182 mg/L 1 0.364 mg/L 1 0.364 mg/L 1 0.364 mg/L 1 0.364 mg/L 1 0.364 mg/L 1 1.5		
Diesel ND 0.182 mg/L 1 0.364 mg/L 1 1.5 Dilution: Ix NTPH-Dx Diseel 1.12 0.200 mg/L 1 1.25 89 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: Ix		
Oil ND 0.364 mg/L 1 0.200 Issue is 02/02/18 21:43 Issue is 02/02/18 22:06 Issu		
Surr: o-Terphenyl (Surr) Recovery: 92 % Limits: 50-150 % Dilution: 1x LCS (8020338-BS1) Prepared: 02/02/18 10:26 Analyzed: 02/02/18 21:43 NWTPH-Dx Diesel 1.12 0.200 mg/L 1 1.25 89 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x LCS Dup (8020338-BSD1) Prepared: 02/02/18 10:26 Analyzed: 02/02/18 22:06 NWTPH-Dx Diesel 1.09 0.200 mg/L 1 1.25 87 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x		
LCS (8020338-BS1) Prepared: 02/02/18 10:26 Analyzed: 02/02/18 21:43 NWTPH-Dx Diesel 1.12 0.200 mg/L 1 1.25 89 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x LCS Dup (8020338-BSD1) Prepared: 02/02/18 10:26 Analyzed: 02/02/18 22:06 NWTPH-Dx Diesel 1.09 0.200 mg/L 1 1.25 87 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: Ix		
NWTPH-Dx Diesel 1.12 0.200 mg/L 1 1.25 89 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x LCS Dup (8020338-BSD1) Prepared: 02/02/18 10:26 Analyzed: 02/02/18 22:06 NWTPH-Dx Diesel 1.09 0.200 mg/L 1 1.25 87 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x		
Diesel 1.12 0.200 mg/L 1 1.25 89 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x LCS Dup (8020338-BSD1) Prepared: 02/02/18 10:26 Analyzed: 02/02/18 22:06 WTPH-Dx Diesel 1.09 0.200 mg/L 1 1.25 87 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x		
Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x LCS Dup (8020338-BSD1) Prepared: 02/02/18 10:26 Analyzed: 02/02/18 22:06 NWTPH-Dx Diesel 1.09 0.200 mg/L 1 1.25 87 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x		
LCS Dup (8020338-BSD1) Prepared: 02/02/18 10:26 Analyzed: 02/02/18 22:06 NWTPH-Dx Diesel 1.09 0.200 mg/L 1 1.25 87 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x Dilution: 1x 1x		
NWTPH-Dx Diesel 1.09 0.200 mg/L 1 1.25 87 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x		Q-19
Diesel 1.09 0.200 mg/L 1 1.25 87 58-115% Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x		
Surr: o-Terphenyl (Surr) Recovery: 98 % Limits: 50-150 % Dilution: 1x	2 20%	
Batch 8020433 - EPA 3546 (Fuels) Soil		
Blank (8020433-BLK1) Prepared: 02/06/18 13:39 Analyzed: 02/06/18 20:50		
NWTPH-Dx		
Diesel ND 25.0 mg/kg wet 1		
Oil ND 50.0 mg/kg wet 1		
Mineral Oil ND 36.4 mg/kg wet 1		
Surr: o-Terphenyl (Surr) Recovery: 96% Limits: 50-150% Dilution: 1x		
LCS (8020433-BS1) Prepared: 02/06/18 13:39 Analyzed: 02/06/18 21:11		
NWTPH-Dx		
Diesel 110 25.0 mg/kg wet 1 125 88 76-115%		
Surr: o-Terphenyl (Surr) Recovery: 95% Limits: 50-150% Dilution: 1x		
Duplicate (8020433-DUP2) Prepared: 02/06/18 13:39 Analyzed: 02/07/18 05:14		
QC Source Sample: Non-SDG (A8B0137-02)		
<u>NWTPH-Dx</u>		
Diesel ND 25.6 mg/kg dry 1 ND		

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

	Diesel and/or Oil Hydrocarbons by NWTPH-Dx												
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 8020433 - EPA 3546 (F	uels)						Soil						
Duplicate (8020433-DUP2)		Prepared	: 02/06/18 13:	39 Analyz	ed: 02/07/1	8 05:14							
QC Source Sample: Non-SDG (A	<u>8B0137-02)</u>												
Oil	ND		51.2	mg/kg dr	y 1		ND				30%		
Mineral Oil	ND		51.2	mg/kg dr	y 1		ND				30%		
Surr: o-Terphenyl (Surr)		Rece	overy: 69 %	Limits: 50	150 %	Dilt	ution: 1x						
Duplicate (8020433-DUP3)		Prepared	: 02/06/18 13:	39 Analyz	ed: 02/07/1	8 10:52							
QC Source Sample: Non-SDG (A	8A0975-01R	E1)											
<u>NWTPH-Dx</u>													
Diesel	6540		262	mg/kg dr	y 10		8090			21	30%		
Oil	ND		524	mg/kg dr	y 10		ND				30%		
Surr: o-Terphenyl (Surr)		Reco	very: 100 %	Limits: 50	150 %	Dili	ution: 10x					S-0	

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 AMENDED REPORT

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasoli	ne Range I	lydrocarbo	ons (Ben	zene thro	ugh Naph	thalene)	by NWTF	PH-Gx			
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8011213 - EPA 5035A							Soil					
Blank (8011213-BLK1)		Prepared	: 01/31/18 09	:00 Analy	zed: 01/31/1	8 10:18						
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND		3.33	mg/kg v	vet 50							
Surr: 4-Bromofluorobenzene (Sur)		Rec	overy: 98 %	Limits: 5	0-150 %	Dil	ution: 1x					
1,4-Difluorobenzene (Sur)			95 %	5	0-150 %		"					
LCS (8011213-BS2)		Prepared	: 01/31/18 09	:00 Analy	zed: 01/31/1	8 09:51						
NWTPH-Gx (MS)												
Gasoline Range Organics	26.2		5.00	mg/kg v	vet 50	25.0		105	80-120%			
Surr: 4-Bromofluorobenzene (Sur)		Rec	overy: 97 %	Limits: 5	0-150 %	Dil	ution: 1x					
1,4-Difluorobenzene (Sur)			95 %	5	0-150 %		"					
Duplicate (8011213-DUP1)		Prepared	: 01/25/18 14	:05 Analy	zed: 01/31/1	8 12:58						
QC Source Sample: Non-SDG (A8	<u>A0943-05)</u>											
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	38.3		12.9	mg/kg d	iry 100		26.8			35	30%	Q-05
Surr: 4-Bromofluorobenzene (Sur)		Reco	very: 104 %	Limits: 5	0-150 %	Dil	ution: 1x					
1,4-Difluorobenzene (Sur)			94 %	5	0-150 %		"					
Duplicate (8011213-DUP2)		Prepared	: 01/26/18 13	:48 Analy	zed: 01/31/1	8 16:32						
QC Source Sample: Non-SDG (A8	A0943-13)											
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND		7.30	mg/kg d	dry 50		ND				30%	
Surr: 4-Bromofluorobenzene (Sur)		Reco	very: 105 %	Limits: 5	0-150 %	Dil	ution: 1x					
1,4-Difluorobenzene (Sur)			95 %	5	0-150 %		"					

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 AMENDED REPORT

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx												
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 8011218 - EPA 5030B							Wat	er					
Blank (8011218-BLK1)		Prepared	: 01/31/18 10:	47 Analyz	zed: 01/31/1	8 12:20							
NWTPH-Gx (MS)													
Gasoline Range Organics	ND		0.100	mg/L	1								
Surr: 4-Bromofluorobenzene (Sur)		Recon	very: 107 %	Limits: 5	0-150 %	Dilı	ution: 1x						
1,4-Difluorobenzene (Sur)			113 %	50	0-150 %		"						
LCS (8011218-BS2)		Prepared	: 01/31/18 10:	47 Analyz	zed: 01/31/1	8 11:53							
NWTPH-Gx (MS)													
Gasoline Range Organics	0.525		0.100	mg/L	1	0.500		105	80-120%				
Surr: 4-Bromofluorobenzene (Sur)		Recon	very: 100 %	Limits: 5	0-150 %	Dilı	ution: 1x						
1,4-Difluorobenzene (Sur)			103 %	50	0-150 %		"						
Duplicate (8011218-DUP1)		Prepared	: 01/31/18 12:	18 Analyz	zed: 01/31/1	8 15:03							
QC Source Sample: Non-SDG (A8	A0967-01)												
<u>NWTPH-Gx (MS)</u>													
Gasoline Range Organics	ND		2.00	mg/L	20		ND				30%		
Surr: 4-Bromofluorobenzene (Sur)		Reco	very: 110 %	Limits: 5	0-150 %	Dilı	ution: 1x						
1,4-Difluorobenzene (Sur)			116 %	50	0-150 %		"						

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 AMENDED REPORT

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

	Gasolir	ne Range H	lydrocarbo	ons (Ben	zene thro	ugh Naph	thalene)	by NWTP	H-Gx			
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8020286 - EPA 5035A							Soil					
Blank (8020286-BLK1)		Prepared	: 02/01/18 09	:00 Analy	zed: 02/01/1	8 11:58						
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND		3.33	mg/kg v	wet 50							
Surr: 4-Bromofluorobenzene (Sur)		Rec	overy: 96 %	Limits: 5	0-150 %	Dil	ution: 1x					
1,4-Difluorobenzene (Sur)			92 %	5	0-150 %		"					
LCS (8020286-BS2)		Prepared	: 02/01/18 09	:00 Analy	zed: 02/01/1	8 11:32						
NWTPH-Gx (MS)												
Gasoline Range Organics	24.5		5.00	mg/kg v	wet 50	25.0		98	80-120%			
Surr: 4-Bromofluorobenzene (Sur)		Rec	overy: 97 %	Limits: 5	50-150 %	Dil	ution: 1x					
1,4-Difluorobenzene (Sur)			94 %	5	0-150 %		"					
Duplicate (8020286-DUP1)		Prepared	: 01/30/18 12	:00 Analy	zed: 02/01/1	8 15:05						
QC Source Sample: Non-SDG (A8	<u>8A1001-01)</u>											
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	217		6.98	mg/kg o	dry 50		218			0.1	30%	
Surr: 4-Bromofluorobenzene (Sur)		Reco	very: 124 %	Limits: 5	0-150 %	Dil	ution: 1x					
1,4-Difluorobenzene (Sur)			97 %	5	0-150 %		"					
Duplicate (8020286-DUP2)		Prepared	: 01/30/18 09	:49 Analy	zed: 02/01/1	8 20:25						
QC Source Sample: GP2-S-2.5 (A	<u>8A0991-04)</u>											
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		7.62	mg/kg o	dry 50		4.45			***	30%	
Surr: 4-Bromofluorobenzene (Sur)		Rec	overy: 96 %	Limits: 5	0-150 %	Dil	ution: 1x					
1,4-Difluorobenzene (Sur)			89 %	5	0-150 %		"					

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

F

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C												
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8011218 - EPA 5030B							Wate	er				
Blank (8011218-BLK1)		Prepared	: 01/31/18 10:4	47 Analyz	ed: 01/31/18	8 12:20						
EPA 8260C												
Acetone	ND		20.0	ug/L	1							
Acrylonitrile	ND		2.00	ug/L	1							
Benzene	ND		0.200	ug/L	1							
Bromobenzene	ND		0.500	ug/L	1							
Bromochloromethane	ND		1.00	ug/L	1							
Bromodichloromethane	ND		1.00	ug/L	1							
Bromoform	ND		1.00	ug/L	1							
Bromomethane	ND		5.00	ug/L	1							
2-Butanone (MEK)	ND		10.0	ug/L	1							
n-Butylbenzene	ND		1.00	ug/L	1							
sec-Butylbenzene	ND		1.00	ug/L	1							
tert-Butylbenzene	ND		1.00	ug/L	1							
Carbon disulfide	ND		10.0	ug/L	1							
Carbon tetrachloride	ND		1.00	ug/L	1							
Chlorobenzene	ND		0.500	ug/L	1							
Chloroethane	ND		5.00	ug/L	1							
Chloroform	ND		1.00	ug/L	1							
Chloromethane	ND		5.00	ug/L	1							
2-Chlorotoluene	ND		1.00	ug/L	1							
4-Chlorotoluene	ND		1.00	ug/L	1							
Dibromochloromethane	ND		1.00	ug/L	1							
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND		0.500	ug/L	1							
Dibromomethane	ND		1.00	ug/L	1							
1,2-Dichlorobenzene	ND		0.500	ug/L	1							
1,3-Dichlorobenzene	ND		0.500	ug/L	1							
1,4-Dichlorobenzene	ND		0.500	ug/L	1							
Dichlorodifluoromethane	ND		1.00	ug/L	1							
1,1-Dichloroethane	ND		0.400	ug/L	1							
1,2-Dichloroethane (EDC)	ND		0.400	ug/L	1							
1,1-Dichloroethene	ND		0.400	ug/L	1							
cis-1,2-Dichloroethene	ND		0.400	ug/L	1							
				e								

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

Б.

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C												
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8011218 - EPA 5030B							Wat	er				
Blank (8011218-BLK1)		Prepared	: 01/31/18 10:4	47 Analyz	ed: 01/31/1	8 12:20						
trans-1,2-Dichloroethene	ND		0.400	ug/L	1							
1,2-Dichloropropane	ND		0.500	ug/L	1							
1,3-Dichloropropane	ND		1.00	ug/L	1							
2,2-Dichloropropane	ND		1.00	ug/L	1							
1,1-Dichloropropene	ND		1.00	ug/L	1							
cis-1,3-Dichloropropene	ND		1.00	ug/L	1							
trans-1,3-Dichloropropene	ND		1.00	ug/L	1							
Ethylbenzene	ND		0.500	ug/L	1							
Hexachlorobutadiene	ND		5.00	ug/L	1							
2-Hexanone	ND		10.0	ug/L	1							
Isopropylbenzene	ND		1.00	ug/L	1							
4-Isopropyltoluene	ND		1.00	ug/L	1							
Methylene chloride	ND		3.00	ug/L	1							
4-Methyl-2-pentanone (MiBK)	ND		10.0	ug/L	1							
Methyl tert-butyl ether (MTBE)	ND		1.00	ug/L	1							
Naphthalene	ND		2.00	ug/L	1							
n-Propylbenzene	ND		0.500	ug/L	1							
Styrene	ND		1.00	ug/L	1							
1,1,1,2-Tetrachloroethane	ND		0.400	ug/L	1							
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1							
Tetrachloroethene (PCE)	ND		0.400	ug/L	1							
Toluene	ND		1.00	ug/L	1							
1.2.3-Trichlorobenzene	ND		2.00	ug/L	1							
1,2,4-Trichlorobenzene	ND		2.00	ug/L	1							
1,1,1-Trichloroethane	ND		0.400	ug/L	1							
1,1,2-Trichloroethane	ND		0.500	ug/L	1							
Trichloroethene (TCE)	ND		0.400	ug/L	1							
Trichlorofluoromethane	ND		2.00	ug/L	1							
1.2.3-Trichloropropane	ND		1.00	ug/L	1							
1,2,4-Trimethylbenzene	ND		1.00	ug/L	1							
1,3,5-Trimethylbenzene	ND		1.00	ug/L	1							
Vinyl chloride	ND		0.400	ug/L	1							

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

	Volatile Organic Compounds by EPA 8260C													
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes		
Batch 8011218 - EPA 5030B							Wat	er						
Blank (8011218-BLK1)		Prepared	: 01/31/18 10	:47 Analyz	zed: 01/31/1	8 12:20								
m,p-Xylene	ND		1.00	ug/L	1									
o-Xylene	ND		0.500	ug/L	1									
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 111 %	Limits: 8	0-120 %	Dilt	ution: 1x							
Toluene-d8 (Surr)			98 %	80	0-120 %		"							
4-Bromofluorobenzene (Surr)			99 %	80	0-120 %		"							
LCS (8011218-BS1)		Prepared	: 01/31/18 10	:47 Analy:	zed: 01/31/1	8 11:14								
EPA 8260C		1												
Acetone	39.9		20.0	ug/L	1	40.0		100	80-120%					
Acrylonitrile	19.4		2.00	ug/L	1	20.0		97	80-120%					
Benzene	20.3		0.200	ug/L	1	20.0		102	80-120%					
Bromobenzene	20.6		0.500	ug/L	1	20.0		103	80-120%					
Bromochloromethane	22.0		1.00	ug/L	1	20.0		110	80-120%					
Bromodichloromethane	20.7		1.00	ug/L	1	20.0		103	80-120%					
Bromoform	23.6		1.00	ug/L	1	20.0		118	80-120%					
Bromomethane	25.8		5.00	ug/L	1	20.0		129	80-120%			Q-56		
2-Butanone (MEK)	39.8		10.0	ug/L	1	40.0		99	80-120%					
n-Butylbenzene	21.0		1.00	ug/L	1	20.0		105	80-120%					
sec-Butylbenzene	21.6		1.00	ug/L	1	20.0		108	80-120%					
tert-Butylbenzene	20.0		1.00	ug/L	1	20.0		100	80-120%					
Carbon disulfide	20.8		10.0	ug/L	1	20.0		104	80-120%					
Carbon tetrachloride	24.4		1.00	ug/L	1	20.0		122	80-120%			Q-56		
Chlorobenzene	20.5		0.500	ug/L	1	20.0		102	80-120%					
Chloroethane	22.5		5.00	ug/L	1	20.0		112	80-120%					
Chloroform	20.2		1.00	ug/L	1	20.0		101	80-120%					
Chloromethane	20.5		5.00	ug/L	1	20.0		103	80-120%					
2-Chlorotoluene	20.7		1.00	ug/L	1	20.0		104	80-120%					
4-Chlorotoluene	19.7		1.00	ug/L	1	20.0		99	80-120%					
Dibromochloromethane	23.2		1.00	ug/L	1	20.0		116	80-120%					
1,2-Dibromo-3-chloropropane	23.7		5.00	ug/L	1	20.0		119	80-120%					
1,2-Dibromoethane (EDB)	20.4		0.500	ug/L	1	20.0		102	80-120%					
Dibromomethane	20.4		1.00	ug/L	1	20.0		102	80-120%					
1,2-Dichlorobenzene	19.7		0.500	ug/L	1	20.0		99	80-120%					

Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

F

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Org	ganic Co	mpounds	by EPA 8	260C					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8011218 - EPA 5030B							Wate	er				
LCS (8011218-BS1)		Prepared	: 01/31/18 10:4	47 Analyz	zed: 01/31/1	8 11:14						
1,3-Dichlorobenzene	20.2		0.500	ug/L	1	20.0		101	80-120%			
1,4-Dichlorobenzene	19.7		0.500	ug/L	1	20.0		99	80-120%			
Dichlorodifluoromethane	20.7		1.00	ug/L	1	20.0		103	80-120%			
1,1-Dichloroethane	20.2		0.400	ug/L	1	20.0		101	80-120%			
1,2-Dichloroethane (EDC)	18.0		0.400	ug/L	1	20.0		90	80-120%			
1,1-Dichloroethene	19.8		0.400	ug/L	1	20.0		99	80-120%			
cis-1,2-Dichloroethene	18.6		0.400	ug/L	1	20.0		93	80-120%			
trans-1,2-Dichloroethene	19.4		0.400	ug/L	1	20.0		97	80-120%			
1,2-Dichloropropane	20.2		0.500	ug/L	1	20.0		101	80-120%			
1,3-Dichloropropane	18.8		1.00	ug/L	1	20.0		94	80-120%			
2,2-Dichloropropane	23.7		1.00	ug/L	1	20.0		118	80-120%			
1,1-Dichloropropene	21.2		1.00	ug/L	1	20.0		106	80-120%			
cis-1,3-Dichloropropene	21.9		1.00	ug/L	1	20.0		110	80-120%			
trans-1,3-Dichloropropene	23.3		1.00	ug/L	1	20.0		116	80-120%			
Ethylbenzene	20.0		0.500	ug/L	1	20.0		100	80-120%			
Hexachlorobutadiene	21.0		5.00	ug/L	1	20.0		105	80-120%			
2-Hexanone	42.2		10.0	ug/L	1	40.0		106	80-120%			
Isopropylbenzene	21.7		1.00	ug/L	1	20.0		108	80-120%			
4-Isopropyltoluene	22.0		1.00	ug/L	1	20.0		110	80-120%			
Methylene chloride	20.7		3.00	ug/L	1	20.0		104	80-120%			
4-Methyl-2-pentanone (MiBK)	38.9		10.0	ug/L	1	40.0		97	80-120%			
Methyl tert-butyl ether (MTBE)	19.9		1.00	ug/L	1	20.0		100	80-120%			
Naphthalene	19.1		2.00	ug/L	1	20.0		95	80-120%			
n-Propylbenzene	19.7		0.500	ug/L	1	20.0		99	80-120%			
Styrene	22.9		1.00	ug/L	1	20.0		115	80-120%			
1,1,1,2-Tetrachloroethane	22.6		0.400	ug/L	1	20.0		113	80-120%			
1,1,2,2-Tetrachloroethane	19.7		0.500	ug/L	1	20.0		98	80-120%			
Tetrachloroethene (PCE)	20.3		0.400	ug/L	1	20.0		102	80-120%			
Toluene	20.0		1.00	ug/L	1	20.0		100	80-120%			
1,2,3-Trichlorobenzene	23.6		2.00	ug/L	1	20.0		118	80-120%			
1,2,4-Trichlorobenzene	20.3		2.00	ug/L	1	20.0		102	80-120%			
1,1,1-Trichloroethane	21.5		0.400	ug/L	1	20.0		107	80-120%			

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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07**

Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

			Volatile Org	ganic Co	mpounds	by EPA 8	3260C					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8011218 - EPA 5030B							Wate	er				
LCS (8011218-BS1)		Prepared	: 01/31/18 10:4	47 Analyz	ed: 01/31/18	3 11:14						
1,1,2-Trichloroethane	20.3		0.500	ug/L	1	20.0		102	80-120%			
Trichloroethene (TCE)	21.0		0.400	ug/L	1	20.0		105	80-120%			
Trichlorofluoromethane	22.5		2.00	ug/L	1	20.0		112	80-120%			
1,2,3-Trichloropropane	20.3		1.00	ug/L	1	20.0		101	80-120%			
1,2,4-Trimethylbenzene	22.1		1.00	ug/L	1	20.0		110	80-120%			
1,3,5-Trimethylbenzene	21.5		1.00	ug/L	1	20.0		108	80-120%			
Vinyl chloride	20.3		0.400	ug/L	1	20.0		101	80-120%			
m,p-Xylene	40.2		1.00	ug/L	1	40.0		101	80-120%			
o-Xylene	19.8		0.500	ug/L	1	20.0		99	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 101 %	Limits: 80	-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			97 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			97 %	80	-120 %		"					
Duplicate (8011218-DUP1)		Prepared	: 01/31/18 12:	18 Analyz	ed: 01/31/18	8 15:03						
QC Source Sample: Non-SDG (A8A	<u> </u>											
EPA 8260C												
Acetone	ND		400	ug/L	20		ND				30%	
Acrylonitrile	ND		40.0	ug/L	20		ND				30%	
Benzene	ND		4.00	ug/L	20		ND				30%	
Bromobenzene	ND		10.0	ug/L	20		ND				30%	
Bromochloromethane	ND		20.0	ug/L	20		ND				30%	
Bromodichloromethane	ND		20.0	ug/L	20		ND				30%	
Bromoform	ND		20.0	ug/L	20		ND				30%	
Bromomethane	ND		100	ug/L	20		ND				30%	
2-Butanone (MEK)	ND		200	ug/L	20		ND				30%	
n-Butylbenzene	ND		20.0	ug/L	20		ND				30%	
sec-Butylbenzene	ND		20.0	ug/L	20		ND				30%	
tert-Butylbenzene	ND		20.0	ug/L	20		ND				30%	
Carbon disulfide	ND		200	ug/L	20		ND				30%	
Carbon tetrachloride	ND		20.0	ug/L	20		ND				30%	
Chlorobenzene	ND		10.0	ug/L	20		ND				30%	
Chloroethane	ND		100	ug/L	20		ND				30%	
Chloroform	ND		20.0	ug/L	20		ND				30%	

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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

Б.

Project: <u>POV-Block A</u> Project Number: **9085.10.07**

Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

	Volatile Organic Compounds by EPA 8260C												
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 8011218 - EPA 5030B							Wate	ər					
Duplicate (8011218-DUP1)		Prepared	: 01/31/18 12:	18 Analyz	ed: 01/31/18	8 15:03							
QC Source Sample: Non-SDG (A8	A0967-01)												
Chloromethane	ND		100	ug/L	20		ND				30%		
2-Chlorotoluene	ND		20.0	ug/L	20		ND				30%		
4-Chlorotoluene	ND		20.0	ug/L	20		ND				30%		
Dibromochloromethane	ND		20.0	ug/L	20		ND				30%		
1,2-Dibromo-3-chloropropane	ND		100	ug/L	20		ND				30%		
1,2-Dibromoethane (EDB)	ND		10.0	ug/L	20		ND				30%		
Dibromomethane	ND		20.0	ug/L	20		ND				30%		
1,2-Dichlorobenzene	ND		10.0	ug/L	20		ND				30%		
1,3-Dichlorobenzene	ND		10.0	ug/L	20		ND				30%		
1,4-Dichlorobenzene	ND		10.0	ug/L	20		ND				30%		
Dichlorodifluoromethane	ND		20.0	ug/L	20		ND				30%		
1,1-Dichloroethane	ND		8.00	ug/L	20		ND				30%		
1,2-Dichloroethane (EDC)	ND		8.00	ug/L	20		ND				30%		
1,1-Dichloroethene	ND		8.00	ug/L	20		ND				30%		
cis-1,2-Dichloroethene	ND		8.00	ug/L	20		ND				30%		
trans-1,2-Dichloroethene	ND		8.00	ug/L	20		ND				30%		
1,2-Dichloropropane	ND		10.0	ug/L	20		ND				30%		
1,3-Dichloropropane	ND		20.0	ug/L	20		ND				30%		
2,2-Dichloropropane	ND		20.0	ug/L	20		ND				30%		
1,1-Dichloropropene	ND		20.0	ug/L	20		ND				30%		
cis-1,3-Dichloropropene	ND		20.0	ug/L	20		ND				30%		
trans-1,3-Dichloropropene	ND		20.0	ug/L	20		ND				30%		
Ethylbenzene	ND		10.0	ug/L	20		ND				30%		
Hexachlorobutadiene	ND		100	ug/L	20		ND				30%		
2-Hexanone	ND		200	ug/L	20		ND				30%		
Isopropylbenzene	ND		20.0	ug/L	20		ND				30%		
4-Isopropyltoluene	ND		20.0	ug/L	20		ND				30%		
Methylene chloride	ND		60.0	ug/L	20		ND				30%		
4-Methyl-2-pentanone (MiBK)	ND		200	ug/L	20		ND				30%		
Methyl tert-butyl ether (MTBE)	ND		20.0	ug/L	20		ND				30%		
Naphthalene	ND		40.0	ug/L	20		ND				30%		

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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

	Volatile Organic Compounds by EPA 8260C											
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8011218 - EPA 5030B							Wate	er				
Duplicate (8011218-DUP1)		Prepared	: 01/31/18 12:	18 Analyz	ed: 01/31/18	8 15:03						
QC Source Sample: Non-SDG (A8	A0967-01)											
n-Propylbenzene	ND		10.0	ug/L	20		ND				30%	
Styrene	ND		20.0	ug/L	20		ND				30%	
1,1,1,2-Tetrachloroethane	ND		8.00	ug/L	20		ND				30%	
1,1,2,2-Tetrachloroethane	ND		10.0	ug/L	20		ND				30%	
Tetrachloroethene (PCE)	ND		8.00	ug/L	20		ND				30%	
Toluene	ND		20.0	ug/L	20		ND				30%	
1,2,3-Trichlorobenzene	ND		40.0	ug/L	20		ND				30%	
1,2,4-Trichlorobenzene	ND		40.0	ug/L	20		ND				30%	
1,1,1-Trichloroethane	ND		8.00	ug/L	20		ND				30%	
1,1,2-Trichloroethane	ND		10.0	ug/L	20		ND				30%	
Trichloroethene (TCE)	ND		8.00	ug/L	20		ND				30%	
Trichlorofluoromethane	ND		40.0	ug/L	20		ND				30%	
1,2,3-Trichloropropane	ND		20.0	ug/L	20		ND				30%	
1,2,4-Trimethylbenzene	ND		20.0	ug/L	20		ND				30%	
1,3,5-Trimethylbenzene	ND		20.0	ug/L	20		ND				30%	
Vinyl chloride	ND		8.00	ug/L	20		ND				30%	
m,p-Xylene	ND		20.0	ug/L	20		ND				30%	
o-Xylene	ND		10.0	ug/L	20		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 114 %	Limits: 80)-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			98 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			98 %	80	-120 %		"					
Matrix Spike (8011218-MS1)		Prepared	: 01/31/18 12:	18 Analyz	ed: 01/31/18	8 17:18						
OC Source Sample: Non-SDG (A8	A0970-01)											
<u>EPA 8260C</u>												
Acetone	40.1		20.0	ug/L	1	40.0	ND	100	39-160%			
Acrylonitrile	18.5		2.00	ug/L	1	20.0	ND	93	63-135%			
Benzene	19.9		0.200	ug/L	1	20.0	ND	99	79-120%			
Bromobenzene	19.2		0.500	ug/L	1	20.0	ND	96	80-120%			
Bromochloromethane	21.9		1.00	ug/L	1	20.0	ND	110	78-123%			
Bromodichloromethane	20.4		1.00	ug/L	1	20.0	ND	102	79-125%			
Bromoform	21.9		1.00	ug/L	1	20.0	ND	110	66-130%			

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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

Б.

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

	Volatile Organic Compounds by EPA 8260C												
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 8011218 - EPA 5030B							Wate	er					
Matrix Spike (8011218-MS1)		Prepared	: 01/31/18 12:	18 Analyz	zed: 01/31/1	8 17:18							
QC Source Sample: Non-SDG (A8	A0970-01)												
Bromomethane	25.9		5.00	ug/L	1	20.0	ND	130	53-141%			Q-54a	
2-Butanone (MEK)	38.7		10.0	ug/L	1	40.0	ND	97	56-143%				
n-Butylbenzene	19.7		1.00	ug/L	1	20.0	ND	98	75-128%				
sec-Butylbenzene	20.6		1.00	ug/L	1	20.0	ND	103	77-126%				
tert-Butylbenzene	19.0		1.00	ug/L	1	20.0	ND	95	78-124%				
Carbon disulfide	20.7		10.0	ug/L	1	20.0	ND	104	64-133%				
Carbon tetrachloride	24.2		1.00	ug/L	1	20.0	ND	121	72-136%			Q-54	
Chlorobenzene	19.9		0.500	ug/L	1	20.0	ND	99	80-120%				
Chloroethane	22.8		5.00	ug/L	1	20.0	ND	114	60-138%				
Chloroform	20.0		1.00	ug/L	1	20.0	ND	100	79-124%				
Chloromethane	20.1		5.00	ug/L	1	20.0	ND	100	50-139%				
2-Chlorotoluene	19.7		1.00	ug/L	1	20.0	ND	99	79-122%				
4-Chlorotoluene	18.6		1.00	ug/L	1	20.0	ND	93	78-122%				
Dibromochloromethane	21.9		1.00	ug/L	1	20.0	ND	110	74-126%				
1,2-Dibromo-3-chloropropane	21.8		5.00	ug/L	1	20.0	ND	109	62-128%				
1,2-Dibromoethane (EDB)	19.4		0.500	ug/L	1	20.0	ND	97	77-121%				
Dibromomethane	19.9		1.00	ug/L	1	20.0	ND	99	79-123%				
1,2-Dichlorobenzene	18.8		0.500	ug/L	1	20.0	ND	94	80-120%				
1,3-Dichlorobenzene	19.1		0.500	ug/L	1	20.0	ND	95	80-120%				
1,4-Dichlorobenzene	18.6		0.500	ug/L	1	20.0	ND	93	79-120%				
Dichlorodifluoromethane	20.4		1.00	ug/L	1	20.0	ND	102	32-152%				
1,1-Dichloroethane	20.0		0.400	ug/L	1	20.0	ND	100	77-125%				
1,2-Dichloroethane (EDC)	17.5		0.400	ug/L	1	20.0	ND	88	73-128%				
1,1-Dichloroethene	20.6		0.400	ug/L	1	20.0	ND	103	71-131%				
cis-1,2-Dichloroethene	18.2		0.400	ug/L	1	20.0	ND	91	78-123%				
trans-1,2-Dichloroethene	19.2		0.400	ug/L	1	20.0	ND	96	75-124%				
1.2-Dichloropropane	19.8		0.500	ug/L	1	20.0	ND	99	78-122%				
1,3-Dichloropropane	17.9		1.00	ug/L	1	20.0	ND	90	80-120%				
2,2-Dichloropropane	21.7		1.00	ug/L	1	20.0	ND	108	60-139%				
1.1-Dichloropropene	20.9		1.00	ug/L	1	20.0	ND	105	79-125%				
cis-1,3-Dichloropropene	17.9		1.00	ug/L	1	20.0	ND	89	75-124%				
trans-1,3-Dichloropropene	21.6		1.00	ug/L	1	20.0	ND	108	73-127%				
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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

F

Project: <u>POV-Block A</u> Project Number: **9085.10.07**

Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C												
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8011218 - EPA 5030B							Wat	er				
Matrix Spike (8011218-MS1)		Prepared	: 01/31/18 12:	18 Analyz	ed: 01/31/1	8 17:18						
QC Source Sample: Non-SDG (A8	<u>A0970-01)</u>											
Ethylbenzene	19.2		0.500	ug/L	1	20.0	ND	96	79-121%			
Hexachlorobutadiene	19.1		5.00	ug/L	1	20.0	ND	95	66-134%			
2-Hexanone	39.4		10.0	ug/L	1	40.0	ND	98	57-139%			
Isopropylbenzene	20.6		1.00	ug/L	1	20.0	ND	103	72-131%			
4-Isopropyltoluene	20.6		1.00	ug/L	1	20.0	ND	103	77-127%			
Methylene chloride	20.2		3.00	ug/L	1	20.0	ND	101	74-124%			
4-Methyl-2-pentanone (MiBK)	36.8		10.0	ug/L	1	40.0	ND	92	67-130%			
Methyl tert-butyl ether (MTBE)	19.0		1.00	ug/L	1	20.0	ND	95	71-124%			
Naphthalene	17.5		2.00	ug/L	1	20.0	ND	88	61-128%			
n-Propylbenzene	18.7		0.500	ug/L	1	20.0	ND	93	76-126%			
Styrene	21.9		1.00	ug/L	1	20.0	ND	110	78-123%			
1,1,1,2-Tetrachloroethane	21.5		0.400	ug/L	1	20.0	ND	107	78-124%			
1,1,2,2-Tetrachloroethane	18.8		0.500	ug/L	1	20.0	ND	94	71-121%			
Tetrachloroethene (PCE)	19.8		0.400	ug/L	1	20.0	ND	99	74-129%			
Toluene	19.2		1.00	ug/L	1	20.0	ND	96	80-121%			
1,2,3-Trichlorobenzene	22.0		2.00	ug/L	1	20.0	ND	110	69-129%			
1,2,4-Trichlorobenzene	18.6		2.00	ug/L	1	20.0	ND	93	69-130%			
1,1,1-Trichloroethane	21.4		0.400	ug/L	1	20.0	ND	107	74-131%			
1,1,2-Trichloroethane	19.7		0.500	ug/L	1	20.0	ND	98	80-120%			
Trichloroethene (TCE)	20.2		0.400	ug/L	1	20.0	ND	101	79-123%			
Trichlorofluoromethane	22.7		2.00	ug/L	1	20.0	ND	113	65-141%			
1,2,3-Trichloropropane	19.1		1.00	ug/L	1	20.0	ND	95	73-122%			
1,2,4-Trimethylbenzene	20.8		1.00	ug/L	1	20.0	ND	104	76-124%			
1,3,5-Trimethylbenzene	20.4		1.00	ug/L	1	20.0	ND	102	75-124%			
Vinyl chloride	20.3		0.400	ug/L	1	20.0	ND	101	58-137%			
m,p-Xylene	39.0		1.00	ug/L	1	40.0	ND	97	80-121%			
o-Xylene	18.6		0.500	ug/L	1	20.0	ND	93	78-122%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	very: 102 %	Limits: 80)-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			95 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			96 %	80	-120 %		"					

Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

5

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

			Polychlo	rinated Bij	ohenyls	by EPA 80)82A					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8020280 - EPA 3546							Soil					
Blank (8020280-BLK1)		Prepared	: 02/01/18 09	:08 Analyze	ed: 02/02/1	8 08:48						C-07
EPA 8082A												
Aroclor 1016	ND		3.64	ug/kg we	t 1							
Aroclor 1221	ND		3.64	ug/kg we	t 1							
Aroclor 1232	ND		3.64	ug/kg we	t 1							
Aroclor 1242	ND		3.64	ug/kg we	t 1							
Aroclor 1248	ND		3.64	ug/kg we	t 1							
Aroclor 1254	ND		3.64	ug/kg we	t 1							
Aroclor 1260	ND		3.64	ug/kg we	t 1							
Surr: Decachlorobiphenyl (Surr)		Reco	overy: 92 %	Limits: 72-	126 %	Dilt	ution: 1x					
LCS (8020280-BS1)		Prepared	: 02/01/18 09	:08 Analyze	ed: 02/02/1	8 09:06						C-07
EPA 8082A												
Aroclor 1016	186		4.00	ug/kg we	t 1	250		75	47-134%			
Aroclor 1260	208		4.00	ug/kg we	t 1	250		83	53-140%			
Surr: Decachlorobiphenyl (Surr)		Reco	overy: 92 %	Limits: 72-	126 %	Dili	ution: 1x					
Duplicate (8020280-DUP2)		Prepared	: 02/01/18 09	:08 Analyze	ed: 02/05/1	8 18:53						C-07
QC Source Sample: Non-SDG (A8	3A0872-01R	<u>E1)</u>										
EPA 8082A												
Aroclor 1016	ND		4.03	ug/kg dry	/ 1		ND				30%	
Aroclor 1221	ND		4.03	ug/kg dry	/ 1		ND				30%	
Aroclor 1232	ND		4.03	ug/kg dry	/ 1		ND				30%	
Aroclor 1242	ND		4.03	ug/kg dry	/ 1		ND				30%	
Aroclor 1248	ND		4.03	ug/kg dry	/ 1		ND				30%	
Aroclor 1254	ND		4.03	ug/kg dry	/ 1		ND				30%	
Aroclor 1260	4.68		4.03	ug/kg dry	/ 1		4.67			0.3	30%	P-10
Surr: Decachlorobiphenyl (Surr)		Rece	overy: 92 %	Limits: 72-	126 %	Dilt	ution: 1x					
Matrix Spike (8020280-MS1)		Prepared	: 02/01/18 09	:08 Analyze	ed: 02/02/1	8 11:10						C-07
QC Source Sample: Non-SDG (A8	3A0872-06)											
EPA 8082A												
Aroclor 1016	192		4.47	ug/kg dry	7 1	280	ND	69	47-134%			

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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.

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A													
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 8020280 - EPA 3546							Soil						
Matrix Spike (8020280-MS1)		Prepared	: 02/01/18 09	08 Analyz	zed: 02/02/1	8 11:10						C-07	
QC Source Sample: Non-SDG (A	8A0872-06)												
Aroclor 1260	260		4.47	ug/kg d	ry 1	280	54.9	73	53-140%				
Surr: Decachlorobiphenyl (Surr)		Rec	overy: 81 %	Limits: 7.	2-126 %	Dili	ution: 1x						
Matrix Spike Dup (8020280-MS	D1)	Prepared	: 02/01/18 09	17 Analyz	zed: 02/02/1	8 11:46						C-07	
QC Source Sample: Non-SDG (A	8A0872-06)												
<u>EPA 8082A</u>													
Aroclor 1016	177		4.51	ug/kg d	ry 1	282	ND	63	47-134%	9	30%		
Aroclor 1260	236		4.51	ug/kg d	ry 1	282	54.9	64	53-140%	13	30%		
Surr: Decachlorobiphenyl (Surr)		Rec	overy: 78 %	Limits: 7.	2-126 %	Dili	ution: 1x						

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Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

F

Project: <u>POV-Block A</u> Project Number: **9085.10.07**

Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

		Se	mivolatile (Organic (Compoun	ds by EP/	A 8270D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8020372 - EPA 3510C (A	Acid Extra	ction)					Wate	ər				
Blank (8020372-BLK2)		Prepared	: 02/05/18 09:0	05 Analyz	ed: 02/05/18	8 13:50						
EPA 8270D												
Acenaphthene	ND		0.0182	ug/L	1							
Acenaphthylene	ND		0.0182	ug/L	1							
Anthracene	ND		0.0182	ug/L	1							
Benz(a)anthracene	ND		0.0182	ug/L	1							
Benzo(a)pyrene	ND		0.0273	ug/L	1							
Benzo(b)fluoranthene	ND		0.0273	ug/L	1							
Benzo(k)fluoranthene	ND		0.0273	ug/L	1							
Benzo(g,h,i)perylene	ND		0.0182	ug/L	1							
Chrysene	ND		0.0182	ug/L	1							
Dibenz(a,h)anthracene	ND		0.0182	ug/L	1							
Fluoranthene	ND		0.0182	ug/L	1							
Fluorene	ND		0.0182	ug/L	1							
Indeno(1,2,3-cd)pyrene	ND		0.0182	ug/L	1							
1-Methylnaphthalene	ND		0.0364	ug/L	1							
2-Methylnaphthalene	ND		0.0364	ug/L	1							
Naphthalene	ND		0.0364	ug/L	1							
Phenanthrene	ND		0.0182	ug/L	1							
Pyrene	ND		0.0182	ug/L	1							
Carbazole	ND		0.0273	ug/L	1							
Dibenzofuran	ND		0.0182	ug/L	1							
Surr: Nitrobenzene-d5 (Surr)		Rec	overy: 64 %	Limits: 44	4-120 %	Dilı	ution: 1x					
2-Fluorobiphenyl (Surr)			67 %	44	-120 %		"					
Phenol-d6 (Surr)			24 %	10	-120 %		"					
p-Terphenyl-d14 (Surr)			84 %	50	-133 %		"					
2-Fluorophenol (Surr)			34 %	19	-120 %		"					
2,4,6-Tribromophenol (Surr)			69 %	43	-140 %		"					
LCS (8020372-BS2)		Prepared	: 02/05/18 09:0	05 Analyz	ed: 02/05/18	8 14:26						
EPA 8270D		*										
Acenaphthene	3.12		0.0800	ug/L	4	4.00		78	47-122%			
Acenaphthylene	3.16		0.0800	ug/L	4	4.00		79	41-130%			
Anthracene	3.32		0.0800	ug/L	4	4.00		83	57-123%			

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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC.
2001 NW 19th Ave, STE 200
Portland, OR 97209

Project: <u>POV-Block A</u> Project Number: **9085.10.07**

Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

		Se	mivolatile (Organic	Compour	ds by EP	A 8270D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8020372 - EPA 3510C (A	Acid Extra	ction)					Wat	er				
LCS (8020372-BS2)		Prepared	: 02/05/18 09:0)5 Analyz	zed: 02/05/1	8 14:26						
Benz(a)anthracene	3.42		0.0800	ug/L	4	4.00		85	58-125%			
Benzo(a)pyrene	3.71		0.120	ug/L	4	4.00		93	54-128%			
Benzo(b)fluoranthene	3.64		0.120	ug/L	4	4.00		91	53-131%			
Benzo(k)fluoranthene	3.49		0.120	ug/L	4	4.00		87	57-129%			
Benzo(g,h,i)perylene	3.68		0.0800	ug/L	4	4.00		92	50-134%			
Chrysene	3.45		0.0800	ug/L	4	4.00		86	59-123%			
Dibenz(a,h)anthracene	3.48		0.0800	ug/L	4	4.00		87	51-134%			
Fluoranthene	3.58		0.0800	ug/L	4	4.00		89	57-128%			
Fluorene	3.25		0.0800	ug/L	4	4.00		81	52-124%			
Indeno(1,2,3-cd)pyrene	3.45		0.0800	ug/L	4	4.00		86	52-133%			
1-Methylnaphthalene	3.31		0.160	ug/L	4	4.00		83	41-120%			
2-Methylnaphthalene	3.21		0.160	ug/L	4	4.00		80	40-121%			
Naphthalene	2.91		0.160	ug/L	4	4.00		73	40-121%			
Phenanthrene	3.24		0.0800	ug/L	4	4.00		81	59-120%			
Pyrene	3.54		0.0800	ug/L	4	4.00		88	57-126%			
Carbazole	3.78		0.120	ug/L	4	4.00		94	60-122%			
Dibenzofuran	3.20		0.0800	ug/L	4	4.00		80	53-120%			
Surr: Nitrobenzene-d5 (Surr)		Rec	overy: 72 %	Limits: 4	4-120 %	Dili	ution: 4x					
2-Fluorobiphenyl (Surr)			71 %	44	4-120 %		"					
Phenol-d6 (Surr)			26 %	10)-120 %		"					
p-Terphenyl-d14 (Surr)			83 %	50)-133 %		"					
2-Fluorophenol (Surr)			38 %	19	0-120 %		"					
2,4,6-Tribromophenol (Surr)			89 %	43	8-140 %		"					
LCS Dup (8020372-BSD2)		Prepared	: 02/05/18 09:0)5 Analyz	zed: 02/05/1	8 15:03						Q-19
EPA 8270D												
Acenaphthene	3.17		0.0800	ug/L	4	4.00		79	47-122%	2	30%	
Acenaphthylene	3.18		0.0800	ug/L	4	4.00		79	41-130%	0.6	30%	
Anthracene	3.33		0.0800	ug/L	4	4.00		83	57-123%	0.4	30%	
Benz(a)anthracene	3.45		0.0800	ug/L	4	4.00		86	58-125%	1	30%	
Benzo(a)pyrene	3.69		0.120	ug/L	4	4.00		92	54-128%	0.4	30%	
Benzo(b)fluoranthene	3.60		0.120	ug/L	4	4.00		90	53-131%	0.9	30%	
Benzo(k)fluoranthene	3.61		0.120	ug/L	4	4.00		90	57-129%	3	30%	

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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07**

Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

		Se	mivolatile (Organic (Compour	ds by EP	A 8270D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8020372 - EPA 3510C (A	cid Extra	ction)					Wat	er				
LCS Dup (8020372-BSD2)		Prepared	: 02/05/18 09:0	05 Analyz	zed: 02/05/1	8 15:03						Q-19
Benzo(g,h,i)perylene	3.69		0.0800	ug/L	4	4.00		92	50-134%	0.2	30%	
Chrysene	3.50		0.0800	ug/L	4	4.00		88	59-123%	1	30%	
Dibenz(a,h)anthracene	3.51		0.0800	ug/L	4	4.00		88	51-134%	0.8	30%	
Fluoranthene	3.55		0.0800	ug/L	4	4.00		89	57-128%	0.9	30%	
Fluorene	3.18		0.0800	ug/L	4	4.00		80	52-124%	2	30%	
Indeno(1,2,3-cd)pyrene	3.39		0.0800	ug/L	4	4.00		85	52-133%	2	30%	
1-Methylnaphthalene	3.31		0.160	ug/L	4	4.00		83	41-120%	0.06	30%	
2-Methylnaphthalene	3.14		0.160	ug/L	4	4.00		79	40-121%	2	30%	
Naphthalene	3.04		0.160	ug/L	4	4.00		76	40-121%	4	30%	
Phenanthrene	3.28		0.0800	ug/L	4	4.00		82	59-120%	1	30%	
Pyrene	3.49		0.0800	ug/L	4	4.00		87	57-126%	1	30%	
Carbazole	3.71		0.120	ug/L	4	4.00		93	60-122%	2	30%	
Dibenzofuran	3.15		0.0800	ug/L	4	4.00		79	53-120%	2	30%	
Surr: Nitrobenzene-d5 (Surr)		Rec	overy: 67 %	Limits: 44	4-120 %	Dilı	ution: 4x					
2-Fluorobiphenyl (Surr)			70 %	44	4-120 %		"					
Phenol-d6 (Surr)			27 %	10)-120 %		"					
p-Terphenyl-d14 (Surr)			82 %	50)-133 %		"					
2-Fluorophenol (Surr)			40 %	19	0-120 %		"					
2,4,6-Tribromophenol (Surr)			87 %	43	8-140 %		"					

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07**

Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D													
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 8020650 - EPA 3546							Soil						
Blank (8020650-BLK2)		Prepared	: 02/13/18 16:	:33 Analyze	ed: 02/14/1	8 10:59							
EPA 8270D													
Acenaphthene	ND		2.50	ug/kg we	t 1								
Acenaphthylene	ND		2.50	ug/kg we	t 1								
Anthracene	ND		2.50	ug/kg we	t 1								
Benz(a)anthracene	ND		2.50	ug/kg we	t 1								
Benzo(a)pyrene	ND		3.75	ug/kg we	t 1								
Benzo(b)fluoranthene	ND		3.75	ug/kg we	t 1								
Benzo(k)fluoranthene	ND		3.75	ug/kg we	t 1								
Benzo(g,h,i)perylene	ND		2.50	ug/kg we	t 1								
Chrysene	ND		2.50	ug/kg we	t 1								
Dibenz(a,h)anthracene	ND		2.50	ug/kg we	t 1								
Fluoranthene	ND		2.50	ug/kg we	t 1								
Fluorene	ND		2.50	ug/kg we	t 1								
Indeno(1,2,3-cd)pyrene	ND		2.50	ug/kg we	t 1								
1-Methylnaphthalene	ND		5.00	ug/kg we	t 1								
2-Methylnaphthalene	ND		5.00	ug/kg we	t 1								
Naphthalene	ND		5.00	ug/kg we	t 1								
Phenanthrene	ND		2.50	ug/kg we	t 1								
Pyrene	ND		2.50	ug/kg we	t 1								
Carbazole	ND		3.75	ug/kg we	t 1								
Dibenzofuran	ND		2.50	ug/kg we	t 1								
Surr: Nitrobenzene-d5 (Surr)		Rec	overy: 74 %	Limits: 37-	122 %	Dil	ution: 1x						
2-Fluorobiphenyl (Surr)			74 %	44-	115 %		"						
Phenol-d6 (Surr)			76 %	33-	122 %		"						
p-Terphenyl-d14 (Surr)			101 %	54-	127 %		"						
2-Fluorophenol (Surr)			78 %	35-	115 %		"						
2,4,6-Tribromophenol (Surr)			72 %	39-	132 %		"						
LCS (8020650-BS2)		Prepared	: 02/13/18 16:	:33 Analyze	ed: 02/14/1	8 11:35							
EPA 8270D													
Acenaphthene	471		2.67	ug/kg we	t 1	533		88	40-122%				
Acenaphthylene	454		2.67	ug/kg we	t 1	533		85	32-132%				
Anthracene	501		2.67	ug/kg we	t 1	533		94	47-123%				

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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07**

Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

	Semivolatile Organic Compounds by EPA 8270D													
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes		
Batch 8020650 - EPA 3546							Soil							
LCS (8020650-BS2)		Prepared	: 02/13/18 16:	33 Analyze	ed: 02/14/1	8 11:35								
Benz(a)anthracene	521		2.67	ug/kg we	t 1	533		98	49-126%					
Benzo(a)pyrene	519		4.00	ug/kg we	t 1	533		97	45-129%					
Benzo(b)fluoranthene	546		4.00	ug/kg we	t 1	533		102	45-132%					
Benzo(k)fluoranthene	552		4.00	ug/kg we	t 1	533		103	47-132%					
Benzo(g,h,i)perylene	589		2.67	ug/kg we	t 1	533		110	43-134%					
Chrysene	536		2.67	ug/kg we	t 1	533		100	50-124%					
Dibenz(a,h)anthracene	579		2.67	ug/kg we	t 1	533		108	45-134%					
Fluoranthene	526		2.67	ug/kg we	t 1	533		99	50-127%					
Fluorene	474		2.67	ug/kg we	t 1	533		89	43-125%					
Indeno(1,2,3-cd)pyrene	551		2.67	ug/kg we	t 1	533		103	45-133%					
1-Methylnaphthalene	477		5.33	ug/kg we	t 1	533		89	40-120%					
2-Methylnaphthalene	487		5.33	ug/kg we	t 1	533		91	38-122%					
Naphthalene	474		5.33	ug/kg we	t 1	533		89	35-123%					
Phenanthrene	471		2.67	ug/kg we	t 1	533		88	50-121%					
Pyrene	526		2.67	ug/kg we	t 1	533		99	47-127%					
Carbazole	508		4.00	ug/kg we	t 1	533		95	50-122%					
Dibenzofuran	460		2.67	ug/kg we	t 1	533		86	44-120%					
Surr: Nitrobenzene-d5 (Surr)		Rece	overy: 87 %	Limits: 37-	122 %	Dil	ution: 1x							
2-Fluorobiphenyl (Surr)			86 %	44-	115 %		"							
Phenol-d6 (Surr)			96 %	33-	122 %		"							
p-Terphenyl-d14 (Surr)			94 %	54-	127 %		"							
2-Fluorophenol (Surr)			97 %	35-	115 %		"							
2,4,6-Tribromophenol (Surr)			97 %	39-	132 %		"							
Duplicate (8020650-DUP2)		Prepared	: 02/13/18 16:	33 Analyze	ed: 02/14/1	8 16:59								
OC Source Sample: GP1-S-2.0 (A	8A0991-01F	<u>RE1)</u>												
EPA 8270D														
Acenaphthene	ND		27.6	ug/kg dr	y 10		ND				30%			
Acenaphthylene	ND		27.6	ug/kg dr	y 10		ND				30%			
Anthracene	ND		27.6	ug/kg dr	y 10		ND				30%			
Benz(a)anthracene	64.1		27.6	ug/kg dr	y 10		39.2			48	30%	M-05, Q-04		
Benzo(a)pyrene	77.8		41.4	ug/kg dr	y 10		58.5			28	30%			
Benzo(b)fluoranthene	84.8		41.4	ug/kg dr	y 10		53.5			45	30%	M-05, Q-04		

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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

<u>Maul Foster & Alongi, INC.</u>											
2001 NW 19th Ave, STE 200											
Portland, OR 97209											

Project: **POV-Block A** Project Number: **9085.10.07**

Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

		Se	mivolatile	Organic C	Compour	ds by EP	A 8270D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8020650 - EPA 3546							Soil					
Duplicate (8020650-DUP2)		Prepared	: 02/13/18 16:	33 Analyze	ed: 02/14/1	8 16:59						
QC Source Sample: GP1-S-2.0 (A	A8A0991-01F	RE1)										
Benzo(k)fluoranthene	ND		41.4	ug/kg dr	y 10		22.5			***	30%	Q-04
Benzo(g,h,i)perylene	52.0		27.6	ug/kg dr	y 10		39.2			28	30%	
Chrysene	77.1		27.6	ug/kg dr	y 10		56.4			31	30%	M-05, Q-04
Dibenz(a,h)anthracene	ND		27.6	ug/kg dr	y 10		ND				30%	
Fluoranthene	131		27.6	ug/kg dr	y 10		79.0			49	30%	Q-04
Fluorene	ND		27.6	ug/kg dr	y 10		ND				30%	
Indeno(1,2,3-cd)pyrene	54.5		27.6	ug/kg dr	y 10		41.4			27	30%	
1-Methylnaphthalene	ND		55.2	ug/kg dr	y 10		ND				30%	
2-Methylnaphthalene	ND		55.2	ug/kg dr	y 10		ND				30%	
Naphthalene	ND		55.2	ug/kg dr	y 10		ND				30%	
Phenanthrene	71.5		27.6	ug/kg dr	y 10		31.0			79	30%	Q-04
Pyrene	129		27.6	ug/kg dr	y 10		75.1			53	30%	Q-04
Carbazole	ND		41.4	ug/kg dr	y 10		ND				30%	
Dibenzofuran	ND		27.6	ug/kg dr	y 10		ND				30%	
Surr: Nitrobenzene-d5 (Surr)		Reco	overy: 84 %	Limits: 37-	-122 %	Dili	ution: 10x					
2-Fluorobiphenyl (Surr)			79 %	44-	-115 %		"					
Phenol-d6 (Surr)			98 %	33-	122 %		"					
p-Terphenyl-d14 (Surr)			96 %	54-	-127 %		"					
2-Fluorophenol (Surr)			96 %	35-	-115 %		"					
2,4,6-Tribromophenol (Surr)			89 %	39-	-132 %		"					
Matrix Spike (8020650-MS2)		Prepared	: 02/13/18 16:	33 Analyze	ed: 02/14/1	8 13:23						
QC Source Sample: Non-SDG (A8	8B0019-15)											
EPA 8270D												
Acenaphthene	588		126	ug/kg dr	y 40	631	ND	93	40-122%			
Acenaphthylene	633		126	ug/kg dr	y 40	631	ND	100	32-132%			
Anthracene	582		126	ug/kg dr	y 40	631	ND	92	47-123%			
Benz(a)anthracene	669		126	ug/kg dr	y 40	631	66.0	96	49-126%			
Benzo(a)pyrene	741		189	ug/kg dr	y 40	631	150	94	45-129%			
Benzo(b)fluoranthene	729		189	ug/kg dr	y 40	631	ND	116	45-132%			
Benzo(k)fluoranthene	680		189	ug/kg dr	y 40	631	ND	108	47-132%			
Benzo(g,h,i)perylene	759		126	ug/kg dr	y 40	631	126	100	43-134%			

Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07**

Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

		Se	mivolatile	Organic C	ompoun	ds by EP/	A 8270D					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8020650 - EPA 3546							Soil					
Matrix Spike (8020650-MS2)		Prepared	: 02/13/18 16:	33 Analyze	ed: 02/14/18	8 13:23						
QC Source Sample: Non-SDG (A8	B0019-15)											
Chrysene	730		126	ug/kg dry	40	631	148	92	50-124%			
Dibenz(a,h)anthracene	642		126	ug/kg dry	40	631	ND	102	45-134%			
Fluoranthene	714		126	ug/kg dry	40	631	103	97	50-127%			
Fluorene	636		126	ug/kg dry	40	631	63.1	91	43-125%			
Indeno(1,2,3-cd)pyrene	690		126	ug/kg dry	40	631	65.5	99	45-133%			
1-Methylnaphthalene	633		252	ug/kg dry	40	631	ND	100	40-120%			
2-Methylnaphthalene	686		252	ug/kg dry	40	631	ND	109	38-122%			
Naphthalene	684		252	ug/kg dry	40	631	ND	108	35-123%			
Phenanthrene	725		126	ug/kg dry	40	631	130	94	50-121%			
Pyrene	778		126	ug/kg dry	40	631	198	92	47-127%			
Carbazole	661		189	ug/kg dry	40	631	ND	105	50-122%			
Dibenzofuran	563		126	ug/kg dry	40	631	ND	89	44-120%			
Surr: Nitrobenzene-d5 (Surr)		Rec	overy: 75 %	Limits: 37-	122 %	Dilı	ution: 40x					S-05
2-Fluorobiphenyl (Surr)			84 %	44-	115 %		"					S-05
Phenol-d6 (Surr)			97 %	33-	122 %		"					S-05
p-Terphenyl-d14 (Surr)			89 %	54-	127 %		"					S-05
2-Fluorophenol (Surr)			91 %	35-	115 %		"					S-05
2,4,6-Tribromophenol (Surr)			112 %	39-	132 %		"					S-05

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Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

Б.

Project: <u>POV-Block A</u> Project Number: **9085.10.07**

Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)													
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 8020573 - EPA 3015A							Wate	ər					
Blank (8020573-BLK1)		Prepared	: 02/09/18 15:3	38 Analyz	ed: 02/10/1	8 19:22							
EPA 6020A													
Arsenic	ND		1.00	ug/L	1								
Barium	ND		1.00	ug/L	1								
Cadmium	ND		0.200	ug/L	1								
Chromium	ND		1.00	ug/L	1								
Lead	ND		0.200	ug/L	1								
Mercury	ND		0.0800	ug/L	1								
Silver	ND		0.200	ug/L	1								
Blank (8020573-BLK2)		Prepared	: 02/09/18 15:3	38 Analyz	ed: 02/12/1	8 18:22							
EPA 6020A													
Selenium	ND		1.00	ug/L	1								
LCS (8020573-BS1)		Prepared	: 02/09/18 15:3	38 Analyz	ed: 02/10/1	8 19:25							
EPA 6020A													
Arsenic	54.2		1.00	ug/L	1	55.6		98	80-120%				
Barium	54.5		1.00	ug/L	1	55.6		98	80-120%				
Cadmium	53.7		0.200	ug/L	1	55.6		97	80-120%				
Chromium	55.0		1.00	ug/L	1	55.6		99	80-120%				
Lead	53.6		0.200	ug/L	1	55.6		96	80-120%				
Mercury	1.09		0.0800	ug/L	1	1.11		98	80-120%				
Selenium	28.8		10.0	ug/L	1	27.8		104	80-120%				
Silver	28.2		0.200	ug/L	1	27.8		101	80-120%				
Duplicate (8020573-DUP1)		Prepared	: 02/09/18 15:3	38 Analyz	ed: 02/10/1	8 19:45							
<u>QC</u> Source Sample: Non-SDG (A8	8A0957-13)												
EPA 6020A													
Arsenic	ND		1.00	ug/L	1		0.978			***	20%		
Barium	20.4		1.00	ug/L	1		20.4			0.4	20%		
Cadmium	ND		0.200	ug/L	1		0.111			***	20%		
Chromium	2.30		1.00	ug/L	1		2.38			3	20%		
Lead	2.63		0.200	ug/L	1		2.62			0.4	20%		
Mercury	ND		0.0800	ug/L	1		ND				20%		

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

Б.

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)													
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 8020573 - EPA 3015A							Wat	er					
Duplicate (8020573-DUP1)		Prepared	: 02/09/18 15:3	38 Analyz	ed: 02/10/18	3 19:45							
QC Source Sample: Non-SDG (A8	A0957-13)												
Selenium	ND		10.0	ug/L	1		ND				20%		
Silver	ND		0.200	ug/L	1		ND				20%		
Matrix Spike (8020573-MS1)		Prepared	: 02/09/18 15:3	38 Analyz	ed: 02/10/18	8 19:59							
OC Source Sample: Non-SDG (A8	<u>A0957-13)</u>												
<u>EPA 6020A</u>													
Arsenic	55.4		1.00	ug/L	1	55.6	0.978	98	75-125%				
Barium	76.1		1.00	ug/L	1	55.6	20.4	100	75-125%				
Cadmium	57.4		0.200	ug/L	1	55.6	0.111	103	75-125%				
Chromium	58.0		1.00	ug/L	1	55.6	2.38	100	75-125%				
Lead	58.2		0.200	ug/L	1	55.6	2.62	100	75-125%				
Mercury	1.10		0.0800	ug/L	1	1.11	ND	99	75-125%				
Selenium	28.8		10.0	ug/L	1	27.8	ND	104	75-125%				
Silver	28.4		0.200	ug/L	1	27.8	ND	102	75-125%				
Matrix Spike (8020573-MS2)		Prepared	: 02/09/18 15:3	38 Analyz	ed: 02/10/18	3 21:06							
QC Source Sample: Non-SDG (A8	<u>B0046-01)</u>												
EPA 6020A													
Arsenic	55.8		1.00	ug/L	1	55.6	3.20	95	75-125%				
Barium	175		1.00	ug/L	1	55.6	125	90	75-125%				
Cadmium	55.6		0.200	ug/L	1	55.6	0.278	100	75-125%				
Chromium	71.4		1.00	ug/L	1	55.6	18.7	95	75-125%				
Lead	66.7		0.200	ug/L	1	55.6	14.0	95	75-125%				
Mercury	1.04		0.0800	ug/L	1	1.11	ND	94	75-125%				
Selenium	28.3		10.0	ug/L	1	27.8	ND	102	75-125%				
Silver	27.4		0.200	ug/L	1	27.8	ND	99	75-125%				

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Philip Nevenberg

Philip Nerenberg, Lab Director


12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07**

Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)												
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8020624 - EPA 3051A							Soil					
Blank (8020624-BLK1)		Prepared	: 02/13/18 09:	40 Analyz	ed: 02/13/1	8 18:02						
EPA 6020A												
Arsenic	ND		1.92	mg/kg we	et 10							
Barium	ND		0.962	mg/kg we	et 10							
Cadmium	ND		0.192	mg/kg we	et 10							
Chromium	ND		1.92	mg/kg w	et 10							
Lead	ND		0.192	mg/kg we	et 10							
Mercury	ND		0.0769	mg/kg w	et 10							
Selenium	ND		0.962	mg/kg we	et 10							
Silver	ND		0.192	mg/kg we	et 10							
Blank (8020624-BLK2)		Prepared	: 02/13/18 09:	40 Analyz	ed: 02/14/1	8 17:03						
EPA 6020A												
Arsenic	ND		0.962	mg/kg we	et 10							
LCS (8020624-BS1)		Prepared	: 02/13/18 09:	40 Analyz	ed: 02/13/1	8 18:05						
EPA 6020A												
Arsenic	50.0		2.00	mg/kg we	et 10	50.0		100	80-120%			
Barium	49.9		1.00	mg/kg we	et 10	50.0		100	80-120%			
Cadmium	51.9		0.200	mg/kg we	et 10	50.0		104	80-120%			
Chromium	52.2		2.00	mg/kg we	et 10	50.0		104	80-120%			
Lead	53.4		0.200	mg/kg we	et 10	50.0		107	80-120%			
Mercury	1.01		0.0800	mg/kg we	et 10	1.00		101	80-120%			
Selenium	27.4		1.00	mg/kg we	et 10	25.0		110	80-120%			
Silver	27.0		0.200	mg/kg we	et 10	25.0		108	80-120%			
Duplicate (8020624-DUP1)		Prepared	: 02/13/18 09:	40 Analyz	ed: 02/13/1	8 18:39						
OC Source Sample: GP2-S-13.0 (A8A0991-06	9										
EPA 6020A		<u></u>										
Arsenic	4.81		2.85	mg/kg dr	y 10		4.81			0.06	40%	
Barium	203		1.43	mg/kg dr	y 10		187			8	40%	
Cadmium	0.528		0.285	mg/kg dr	v 10		0.456			15	40%	
Chromium	25.0		2.85	mg/kg dr	v 10		22.5			11	40%	
Lead	41.0		0.285	mg/kg dr	v 10		33.8			19	40%	
					5 - 5		- 310			• /		

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

Б.

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

			Total I	Metals by	EPA 602	0 (ICPMS)					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8020624 - EPA 3051A							Soil					
Duplicate (8020624-DUP1)		Prepared	: 02/13/18 09:	40 Analyze	d: 02/13/1	8 18:39						
QC Source Sample: GP2-S-13.0 (A8A0991-06)										
Mercury	0.121		0.114	mg/kg dry	/ 10		0.112			8	40%	
Selenium	ND		1.43	mg/kg dry	/ 10		ND				40%	
Silver	ND		0.285	mg/kg dry	/ 10		0.152			***	40%	
Matrix Spike (8020624-MS1)		Prepared	: 02/13/18 09:-	40 Analyze	d: 02/13/1	8 18:45						
QC Source Sample: GP2-S-13.0 (A8A0991-06)										
EPA 6020A												
Arsenic	77.9		2.75	mg/kg dry	/ 10	68.8	4.81	106	75-125%			
Barium	256		1.37	mg/kg dry	/ 10	68.8	187	100	75-125%			
Cadmium	75.4		0.275	mg/kg dry	/ 10	68.8	0.456	109	75-125%			
Chromium	101		2.75	mg/kg dry	/ 10	68.8	22.5	114	75-125%			
Lead	103		0.275	mg/kg dry	/ 10	68.8	33.8	100	75-125%			
Mercury	1.55		0.110	mg/kg dry	/ 10	1.37	0.112	105	75-125%			
Selenium	40.3		1.37	mg/kg dry	/ 10	34.3	ND	117	75-125%			
Silver	39.3		0.275	mg/kg dry	/ 10	34.3	0.152	114	75-125%			
Matrix Spike (8020624-MS2)		Prepared	: 02/13/18 09:-	40 Analyze	d: 02/14/1	8 01:25						
QC Source Sample: Non-SDG (A8	3B0209-10)											
<u>EPA 6020A</u>												
Arsenic	73.1		2.38	mg/kg dry	/ 10	59.5	12.0	103	75-125%			
Barium	160		1.19	mg/kg dry	/ 10	59.5	82.5	131	75-125%			
Cadmium	63.9		0.238	mg/kg dry	/ 10	59.5	0.482	107	75-125%			
Chromium	397		2.38	mg/kg dry	/ 10	59.5	154	408	75-125%			
Lead	172		0.238	mg/kg dry	/ 10	59.5	60.9	187	75-125%			
Mercury	1.24		0.0951	mg/kg dry	/ 10	1.19	0.0711	98	75-125%			
Selenium	33.8		1.19	mg/kg dry	/ 10	29.7	ND	114	75-125%			
Silver	32.7		0.238	mg/kg dry	/ 10	29.7	ND	110	75-125%			

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

<u>Maul Foster & Alongi, INC.</u> 2001 NW 19th Ave, STE 200 Portland, OR 97209

F

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

Analyte Detection Limit Reporting Limit Units Dilution Spike Amount Source Result % REC % REC RPD Limit Batch 8041245 - EPA 3051A Prepared: 04/30/18 11:46 Analyzed: 04/30/18 20:26 50il 50							0 (ICPMS)	PA 602	letals by E	Total M			
Batch 8041245 - EPA 3051A Soil Blank (8041245-BLK1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 20:26 EPA 6020A Lead ND 0.200 mg/kg wet 10	Notes	RPD Limit	RPD	% REC Limits	% REC	Source Result	Spike Amount	Dilution	Units I	Reporting Limit	Detection Limit	Result	Analyte
Blank (8041245-BLK1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 20:26 EPA 6020A Lead ND 0.200 mg/kg wet 10 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>Soil</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Batch 8041245 - EPA 3051A</td>						Soil							Batch 8041245 - EPA 3051A
EPA 6020A ND 0.200 mg/kg wet 10							3 20:26	: 04/30/18	46 Analyzed:	04/30/18 11:4	Prepared		Blank (8041245-BLK1)
Lead ND 0.200 mg/kg wet 10													EPA 6020A
LCS (8041245-BS1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 20:41 EPA 6020A Lead 49.0 0.200 mg/kg wet 10 50.0 98 80-120% Duplicate (8041245-DUP1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:05 98 80-120% Duplicate (8041245-DUP1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:05 8 40% Matrix Spike (8041245-MS1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:10 64.8 8 40% Matrix Spike (8041245-MS1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:10 64.8 113 75-125% Matrix Spike (8041245-MS2) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:59 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>10</td><td>mg/kg wet</td><td>0.200</td><td></td><td>ND</td><td>Lead</td></th<>								10	mg/kg wet	0.200		ND	Lead
EPA 6020A Lead 49.0 0.200 mg/kg wet 10 50.0 98 80-120% Duplicate (8041245-DUP1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:05 8 40% EPA 6020A EPA 6020A 0.248 mg/kg dry 10 64.8 8 40% Matrix Spike (8041245-MS1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:10 8 40% QC Source Sample: Non-SDG (A8D0759-04) EPA 6020A 0.240 mg/kg dry 10 60.1 64.8 113 75-125% QC Source Sample: Non-SDG (A8D0759-04) EPA 6020A 0.240 mg/kg dry 10 60.1 64.8 113 75-125% Matrix Spike (8041245-MS2) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:59 EPA 6020A EPA 6020A <							3 20:41	: 04/30/18	46 Analyzed:	04/30/18 11:4	Prepared		LCS (8041245-BS1)
Lead 49.0 0.200 mg/kg wet 10 50.0 98 80-120% Duplicate (8041245-DUP1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:05 98 80-120% 8 40% Matrix Spike (8041245-MS1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:10 8 40% <u>QC Source Sample: Non-SDG (A8D0759-04)</u> EPA 6020A 0.240 mg/kg dry 10 60.1 64.8 113 75-125% Matrix Spike (8041245-MS2) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:59 <td></td> <td>EPA 6020A</td>													EPA 6020A
Duplicate (8041245-DUP1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:05 OC Source Sample: Non-SDG (A8D0759-04) EPA 6020A Lead 70.3 0.248 mg/kg dry 10 64.8 8 40% Matrix Spike (8041245-MS1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:10 OC Source Sample: Non-SDG (A8D0759-04) EPA 6020A EPA 6020A				80-120%	98		50.0	10	mg/kg wet	0.200		49.0	Lead
QC Source Sample: Non-SDG (A8D0759-04) EPA 6020A Lead 70.3 0.248 mg/kg dry 10 64.8 8 40% Matrix Spike (8041245-MS1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:10 8 40% QC Source Sample: Non-SDG (A8D0759-04) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:10 8 40% Matrix Spike (8041245-MS2) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:59							3 21:05	: 04/30/18	46 Analyzed:	04/30/18 11:4	Prepared		Duplicate (8041245-DUP1)
EPA 6020A Lead 70.3 0.248 mg/kg dry 10 64.8 8 40% Matrix Spike (8041245-MS1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:10												D0759-04)	QC Source Sample: Non-SDG (A8
Lead 70.3 0.248 mg/kg dry 10 64.8 8 40% Matrix Spike (8041245-MS1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:10													<u>EPA 6020A</u>
Matrix Spike (8041245-MS1) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:10 OC Source Sample: Non-SDG (A8D0759-04) EPA 6020A EPA 6020A Lead 132 0.240 mg/kg dry 10 60.1 64.8 113 75-125% Matrix Spike (8041245-MS2) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:59 OC Source Sample: Non-SDG (A8D0848-09)		40%	8			64.8		10	mg/kg dry	0.248		70.3	Lead
OC Source Sample: Non-SDG (A8D0759-04) EPA 6020A Lead 132 Matrix Spike (8041245-MS2) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:59							3 21:10	: 04/30/18	46 Analyzed:	04/30/18 11:4	Prepared:		Matrix Spike (8041245-MS1)
EPA 6020A Lead 132 0.240 mg/kg dry 10 60.1 64.8 113 75-125% Matrix Spike (8041245-MS2) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:59 OC Source Sample: Non-SDG (A8D0848-09) ENA (2204)												D0759-04)	QC Source Sample: Non-SDG (A8
Lead 132 0.240 mg/kg dry 10 60.1 64.8 113 75-125% Matrix Spike (8041245-MS2) Prepared: 04/30/18 04/30/18 11:46 Analyzed: 04/30/18 21:59 OC Source Sample: Non-SDG (A8D0848-09) ENA (6304) ENA (6304) ENA (6304)													<u>EPA 6020A</u>
Matrix Spike (8041245-MS2) Prepared: 04/30/18 11:46 Analyzed: 04/30/18 21:59 OC Source Sample: Non-SDG (A8D0848-09) FBA (6304) FBA (6304)				75-125%	113	64.8	60.1	10	mg/kg dry	0.240		132	Lead
OC Source Sample: Non-SDG (A8D0848-09)							3 21:59	: 04/30/18	46 Analyzed:	04/30/18 11:4	Prepared:		Matrix Spike (8041245-MS2)
EB4 (000 A												D0848-09)	OC Source Sample: Non-SDG (A8
<u>L/A 0020A</u>													<u>EPA 6020A</u>
Lead 77.3 0.257 mg/kg dry 10 64.3 8.09 108 75-125%				75-125%	108	8.09	64.3	10	mg/kg dry	0.257		77.3	Lead

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209

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Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

			TCLP N	letals by	/ EPA 602	0 (ICPMS	5)					
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8050440 - EPA 1311/3015							Soil					
Blank (8050440-BLK1)		Prepared	: 05/03/18 11:0	3 Analyz	ed: 05/03/18	3 16:42						
<u>1311/6020A</u> Lead	ND		0.0500	mg/L	5							
LCS (8050440-BS1)		Prepared	: 05/03/18 11:0	3 Analyz	ed: 05/03/18	8 16:47						
<u>1311/6020A</u>												
Lead	2.63		0.0500	mg/L	5	2.50		105	80-120%			
Matrix Spike (8050440-MS1)		Prepared	: 05/03/18 11:0	3 Analyz	ed: 05/03/18	3 17:21						
QC Source Sample: Non-SDG (A8D 1311/6020A	<u>0772-03)</u>											
Lead	2.51		0.0500	mg/L	5	2.50	ND	100	50-150%			
Matrix Spike (8050440-MS2)		Prepared	: 05/03/18 11:0	3 Analyz	ed: 05/03/18	8 17:54						
QC Source Sample: Non-SDG (A8D	<u>0888-01)</u>											
<u>1311/6020A</u>												
Lead	2.59		0.0500	mg/L	5	2.50	0.0699	101	50-150%			

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

<u>Maul Foster & Alongi, INC.</u> 2001 NW 19th Ave, STE 200 Portland, OR 97209 AMENDED REPORT

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

				Percent	t Dry Wei	ght						
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8020346 - Total Solids (D	Dry Weigh	nt)					Soil					
Duplicate (8020346-DUP1)		Prepared	: 02/02/18 12	:23 Analyz	ed: 02/05/1	8 08:15						
QC Source Sample: Non-SDG (A8/ EPA 8000C	<u>40938-02)</u>											
% Solids	97.2		1.00	% by Wei	ght l		97.2			0.03	10%	
Duplicate (8020346-DUP2)		Prepared	: 02/02/18 12:	:23 Analyz	ed: 02/05/1	8 08:15						
QC Source Sample: Non-SDG (A8/ EPA 8000C	<u> 41015-01)</u>											
% Solids	71.2		1.00	% by Wei	ght 1		71.0			0.3	10%	
Duplicate (8020346-DUP3)		Prepared	: 02/02/18 12:	:23 Analyz	ed: 02/05/1	8 08:15						
OC Source Sample: Non-SDG (A8	<u>B0039-02)</u>											
<u>EPA 8000C</u> % Solids	90.9		1.00	% by Wei	ght 1		90.9			0.02	10%	
Duplicate (8020346-DUP4)		Prepared	: 02/02/18 12:	:23 Analyz	ed: 02/05/1	8 08:15						
OC Source Sample: Non-SDG (A81 EPA 8000C	<u>B0045-09)</u>											
% Solids	89.0		1.00	% by Wei	ght 1		88.6			0.4	10%	
Duplicate (8020346-DUP5)		Prepared	: 02/02/18 12:	:23 Analyz	ed: 02/05/1	8 08:15						
QC Source Sample: Non-SDG (A81	B0045-23)											
% Solids	76.4		1.00	% by Wei	ght 1		76.7			0.5	10%	
Duplicate (8020346-DUP6)		Prepared	: 02/02/18 19	:11 Analyz	ed: 02/05/1	8 08:15						
OC Source Sample: Non-SDG (A81 EPA 8000C	<u>B0070-01)</u>											
% Solids	75.4		1.00	% by Wei	ght l		75.4			0.1	10%	
Duplicate (8020346-DUP7)		Prepared	: 02/02/18 19	:11 Analyz	ed: 02/05/1	8 08:15						
QC Source Sample: Non-SDG (A81 EPA 8000C	<u>B0084-01)</u>											

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

				Percen	t Dry Weig	ght						
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8020346 - Total Solids (Dry	Weigh	t)					Soil					
Duplicate (8020346-DUP7)		Prepared:	02/02/18 19	11 Analy	zed: 02/05/18	8 08:15						
<u>QC Source Sample: Non-SDG (A8B00</u>	84-01)											
% Solids	90.9		1.00	% by We	ight 1		90.8			0.07	10%	
Batch 8041235 - Total Solids (Dry	Weigh	t)					Soil					
Duplicate (8041235-DUP1)		Prepared:	04/30/18 09:	40 Analy	zed: 05/01/1	8 08:30						
QC Source Sample: GP1-S-7.0 (A8A0 EPA 8000C	<u>991-02)</u>											
% Solids	95.1		1.00	% by We	ight 1		95.2			0.05	10%	
Duplicate (8041235-DUP2)		Prepared:	04/30/18 09	40 Analy	zed: 05/01/1	8 08:30						
QC Source Sample: Non-SDG (A8D08 EPA 8000C	<u>867-11)</u>											
% Solids	90.8		1.00	% by We	ight 1		90.5			0.3	10%	
Duplicate (8041235-DUP3)		Prepared:	04/30/18 09:	:40 Analy:	zed: 05/01/1	8 08:30						
QC Source Sample: Non-SDG (A8D08	<u> 91-05)</u>											
EPA 8000C % Solids	90.8		1.00	% by We	ight 1		91.3			0.6	10%	
Durglands (8041225 DUD4)		D 1	04/20/10 10	20 1 1	1.05/01/1	0.00.20						
	24.02	Prepared:	04/30/18 19:	20 Analy	zed: 05/01/1	8 08:30						
<u>QC Source Sample: Non-SDG (A8D09</u> <u>EPA 8000C</u>	<u>24-02)</u>											
% Solids	90.0		1.00	% by We	ight 1		92.4			3	10%	
Duplicate (8041235-DUP5)		Prepared:	04/30/18 19	20 Analy	zed: 05/01/1	8 08:30						
OC Source Sample: Non-SDG (A8D09 EPA 8000C	<u>27-06)</u>											
% Solids	80.7		1.00	% by We	ight 1		80.9			0.2	10%	

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AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight												
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8041235 - Total Solids (I	Dry Weigh	nt)					Soil					
Duplicate (8041235-DUP6)		Prepared	: 04/30/18 19:	20 Analy	zed: 05/01/1	8 08:30						
QC Source Sample: Non-SDG (A8 EPA 8000C	<u>D0930-04)</u>		1.00	A/ 1 - XX			01.0				100/	
% Solids Duplicate (8041235-DUP7)	82.7	Prepared	1.00	% by We	ight 1 zed: 05/01/1	8 08:30	81.8			1	10%	
QC Source Sample: Non-SDG (A8 EPA 8000C	<u>D0936-02)</u>											
% Solids	84.7		1.00	% by We	ight 1		84.9			0.2	10%	

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Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

<u>Maul Foster & Alongi, INC.</u> 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

SAMPLE PREPARATION INFORMATION

		Diesel an	d/or Oil Hydrocarbon	s by NWTPH-Dx			
Prep: EPA 3510C (F	uels/Acid Ex	<u>t.)</u>			Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 8020338							
A8A0991-07	Water	NWTPH-Dx	01/30/18 11:00	02/02/18 10:26	1000mL/5mL	1000mL/5mL	1.00
Prep: EPA 3546 (Fi	uels)				Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 8020433							
A8A0991-01	Soil	NWTPH-Dx	01/30/18 08:30	02/06/18 13:39	10.43g/5mL	10g/5mL	0.96
A8A0991-03	Soil	NWTPH-Dx	01/30/18 08:45	02/06/18 13:39	10.69g/5mL	10g/5mL	0.94
A8A0991-04	Soil	NWTPH-Dx	01/30/18 09:49	02/06/18 13:39	10.59g/5mL	10g/5mL	0.94
A8A0991-06	Soil	NWTPH-Dx	01/30/18 10:10	02/06/18 13:39	10.54g/5mL	10g/5mL	0.95
A8A0991-08	Soil	NWTPH-Dx	01/30/18 09:03	02/06/18 13:39	10.29g/5mL	10g/5mL	0.97
A8A0991-10	Soil	NWTPH-Dx	01/30/18 09:30	02/06/18 13:39	10.11g/5mL	10g/5mL	0.99

	Ga	asoline Range Hydrocart	oons (Benzene throu	ugh Naphthalene) b	y NWTPH-Gx		
Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 8011218							
A8A0991-07	Water	NWTPH-Gx (MS)	01/30/18 11:00	01/31/18 12:18	5mL/5mL	5mL/5mL	1.00
Prep: EPA 5035A					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 8011213							
A8A0991-01	Soil	NWTPH-Gx (MS)	01/30/18 08:30	01/30/18 08:30	5.89g/5mL	5g/5mL	0.85
A8A0991-03	Soil	NWTPH-Gx (MS)	01/30/18 08:45	01/30/18 08:45	6.02g/5mL	5g/5mL	0.83
A8A0991-06	Soil	NWTPH-Gx (MS)	01/30/18 10:10	01/30/18 10:10	6.49g/5mL	5g/5mL	0.77
A8A0991-08	Soil	NWTPH-Gx (MS)	01/30/18 09:03	01/30/18 09:03	3.97g/5mL	5g/5mL	1.26
A8A0991-10	Soil	NWTPH-Gx (MS)	01/30/18 09:30	01/30/18 09:30	6.15g/5mL	5g/5mL	0.81
Batch: 8020286							
A8A0991-04	Soil	NWTPH-Gx (MS)	01/30/18 09:49	01/30/18 09:49	5.9g/5mL	5g/5mL	0.85

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC.	Project: <u>POV-Block A</u>	
2001 NW 19th Ave, STE 200	Project Number: 9085.10.07	Report ID:
Portland, OR 97209	Project Manager: David Weatherby	A8A0991 - 050818 0340

SAMPLE PREPARATION INFORMATION

		Volatile	Organic Compounds	by EPA 8260C			
Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 8011218							
A8A0991-07	Water	EPA 8260C	01/30/18 11:00	01/31/18 12:18	5mL/5mL	5mL/5mL	1.00

Polychlorinated Biphenyls by EPA 8082A							
Prep: EPA 3546					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 8020280							
A8A0991-01	Soil	EPA 8082A	01/30/18 08:30	02/01/18 09:20	10.68g/5mL	10g/5mL	0.94
A8A0991-03	Soil	EPA 8082A	01/30/18 08:45	02/01/18 09:20	10.05g/5mL	10g/5mL	1.00
A8A0991-04	Soil	EPA 8082A	01/30/18 09:49	02/01/18 09:20	10.25g/5mL	10g/5mL	0.98
A8A0991-06	Soil	EPA 8082A	01/30/18 10:10	02/01/18 09:20	10.39g/5mL	10g/5mL	0.96
A8A0991-08	Soil	EPA 8082A	01/30/18 09:03	02/01/18 09:20	10.4g/5mL	10g/5mL	0.96
A8A0991-10	Soil	EPA 8082A	01/30/18 09:30	02/01/18 09:20	10.73g/5mL	10g/5mL	0.93

		Semivolat	ile Organic Compoun	ds by EPA 8270D			
Prep: EPA 3510C (A	Sample	Default	RL Prep				
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 8020372 A8A0991-07RE2	Water	EPA 8270D	01/30/18 11:00	02/05/18 09:05	1000mL/1mL	1000mL/1mL	1.00
Prep: EPA 3546 Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8020650 A8A0991-01RE1 A8A0991-03	Soil Soil	EPA 8270D EPA 8270D	01/30/18 08:30 01/30/18 08:45	02/13/18 16:33 02/13/18 16:33	15.55g/2mL 15.75g/2mL	15g/2mL 15g/2mL	0.97 0.95

			Total Metals by EPA 6020	0 (ICPMS)			
Prep: EPA 3015A					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC.Project:POV-Block A2001 NW 19th Ave, STE 200Project Number:9085.10.07Report ID:Portland, OR 97209Project Manager:David WeatherbyA8A0991 - 050818 0340

SAMPLE PREPARATION INFORMATION

		Tot	al Metals by EPA 602	20 (ICPMS)			
Prep: EPA 3015A					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 8020573							
A8A0991-07	Water	EPA 6020A	01/30/18 11:00	02/09/18 15:38	45mL/50mL	45mL/50mL	1.00
A8A0991-07RE1	Water	EPA 6020A	01/30/18 11:00	02/09/18 15:38	45mL/50mL	45mL/50mL	1.00
Prep: EPA 3051A					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 8020624							
A8A0991-01	Soil	EPA 6020A	01/30/18 08:30	02/13/18 09:40	0.486g/50mL	0.5g/50mL	1.03
A8A0991-01RE1	Soil	EPA 6020A	01/30/18 08:30	02/13/18 09:40	0.486g/50mL	0.5g/50mL	1.03
A8A0991-03	Soil	EPA 6020A	01/30/18 08:45	02/13/18 09:40	0.468g/50mL	0.5g/50mL	1.07
A8A0991-04	Soil	EPA 6020A	01/30/18 09:49	02/13/18 09:40	0.465g/50mL	0.5g/50mL	1.08
A8A0991-04RE1	Soil	EPA 6020A	01/30/18 09:49	02/13/18 09:40	0.465g/50mL	0.5g/50mL	1.08
A8A0991-06	Soil	EPA 6020A	01/30/18 10:10	02/13/18 09:40	0.484g/50mL	0.5g/50mL	1.03
A8A0991-08	Soil	EPA 6020A	01/30/18 09:03	02/13/18 09:40	0.493g/50mL	0.5g/50mL	1.01
A8A0991-08RE1	Soil	EPA 6020A	01/30/18 09:03	02/13/18 09:40	0.493g/50mL	0.5g/50mL	1.01
A8A0991-10	Soil	EPA 6020A	01/30/18 09:30	02/13/18 09:40	0.463g/50mL	0.5g/50mL	1.08
Batch: 8041245							
A8A0991-02	Soil	EPA 6020A	01/30/18 08:40	04/30/18 11:46	0.481g/50mL	0.5g/50mL	1.04

TCLP Metals by EPA 6020 (ICPMS)							
Prep: EPA 1311/301	<u>5</u>				Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 8050440							
A8A0991-03	Soil	1311/6020A	01/30/18 08:45	05/03/18 11:03	5mL/50mL	5mL/50mL	1.00

			Percent Dry Wei	ght			
Prep: Total Solids (I	Dry Weight)				Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 8020346							
A8A0991-01	Soil	EPA 8000C	01/30/18 08:30	02/02/18 12:23	1N/A/1N/A	1N/A/1N/A	NA

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AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

SAMPLE PREPARATION INFORMATION

			Percent Dry Wei	ight			
Prep: Total Solids (I	Dry Weight)				Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A8A0991-03	Soil	EPA 8000C	01/30/18 08:45	02/02/18 12:23	1N/A/1N/A	1N/A/1N/A	NA
A8A0991-04	Soil	EPA 8000C	01/30/18 09:49	02/02/18 12:23	1N/A/1N/A	1N/A/1N/A	NA
A8A0991-06	Soil	EPA 8000C	01/30/18 10:10	02/02/18 12:23	1N/A/1N/A	1N/A/1N/A	NA
A8A0991-08	Soil	EPA 8000C	01/30/18 09:03	02/02/18 12:23	1N/A/1N/A	1N/A/1N/A	NA
A8A0991-10	Soil	EPA 8000C	01/30/18 09:30	02/02/18 12:23	1N/A/1N/A	1N/A/1N/A	NA
Batch: 8041235							
A8A0991-02	Soil	EPA 8000C	01/30/18 08:40	04/30/18 09:40	1N/A/1N/A	1N/A/1N/A	NA

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

QUALIFIER DEFINITIONS

Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

C-07

	to minimize matrix interference.
F-11	The hydrocarbon pattern indicates possible weathered diesel, or a contribution from a related component.
M-05	Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
P-10	Result estimated due to the presence of multiple PCB Aroclors and/or matrix interference.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-16	Reanalysis of an original Batch QC sample.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +2%. The results are reported as Estimated Values.
Q-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +9%. The results are reported as Estimated Values.
Q-56	Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260C

- **R-02** The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- S-05 Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
- S-06 Surrogate recovery is outside of established control limits.
- TCLP This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 8050398.

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Philip Nevenberg

Philip Nerenberg, Lab Director



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<u>Maul Foster & Alongi, INC.</u> 2001 NW 19th Ave, STE 200

AMENDED REPORT

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

Portland, OR 97209

DET Analyte DETECTED at or above the detection of	or reporting limit.
---	---------------------

- ND Analyte NOT DETECTED at or above the detection or reporting limit.
- NR Result Not Reported
- RPD Relative Percent Difference

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ). If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.

The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

<u>" dry"</u> Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry") See Percent Solids section for details of dry weight analysis.

- "wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
- "____ Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.
- QC Source: In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Miscellaneous Notes:

- "---" 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).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL). -For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier. -For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy. For further details, please request a copy of this document.

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

<u>Maul Foster & Alongi, INC.</u> 2001 NW 19th Ave, STE 200 Portland, OR 97209 AMENDED REPORT

Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the blank results 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.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met. Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

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Philip Nevenberg

Philip Nerenberg, Lab Director



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<u>Report ID:</u> A8A0991 - 050818 0340

LABORATORY ACCREDITATION INFORMATION

TNI Certification ID: OR100062 (Primary Accreditation) | EPA ID: OR01039

All reported analytes are included on Apex Laboratories' ORELAP Scope of Certification, with the <u>exception</u> of any analyte(s) listed below:

Apex Laboratories									
Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Cert?				

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation. Please see the Subcontract Laboratory report for full details.

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 EPA ID: OR01039

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: 9085.10.07 Project Manager: David Weatherby

<u>Report ID:</u> A8A0991 - 050818 0340



Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

AMENDED REPORT

Maul Foster & Alongi, INC. 2001 NW 19th Ave, STE 200 Portland, OR 97209 Project: <u>POV-Block A</u> Project Number: **9085.10.07** Project Manager: **David Weatherby**

<u>Report ID:</u> A8A0991 - 050818 0340

APEX LAP	BS COOLER RECEIPT FORM
Client: MFA	Element WO#: A8
Project/Project #: POV-Block A /908	35.10.07
Delivery info:	
Date/Time Received: <u>+3+18</u> @ 105	<u>7</u> By: <u>Μ</u> β
Delivered by: Apex X Client ESS I	FedExUPSSwiftSenvoySDSOther
Cooler Inspection Inspected by:	<u>R : 1-31-18 @ 1200</u>
Chain of Custody Included? Yes \times No	Custody Seals? Yes X No
Signed/Dated by Client? Yes $\frac{1}{2}$ No	
Signed/Dated by Apex? Yes $\stackrel{\checkmark}{\times}$ No	
Cooler #1 Coole	er #2 Cooler #3 Cooler #4 Cooler #5 Cooler #6 Cooler #7
Temperature (deg. C)	
Received on Ice?	
$\Gamma emp. Blanks? (YN) (), (), ()$	
Ice Type: (Gel Real)Other)	
Condition: ~ 1/2 melked apost	
All Samples Intact? Yes / No Comm 	ents: Ecomments: Trip Blank #1709 verewed but
Containers/Volumes Received Appropriate for	Analysis? Yes / No. Commenter
	$\frac{1}{2}$ $\frac{1}$
Do VOA Vials have Visible Headspace? Ye	rs No 🖌 NA
Comments	
Vater Samples: pH Checked and Appropriate	(except VOAs): Yes <u>No</u> NA
Comments:	
Additional Information:	
abeled by: Witness:	Cooler Inspected by: See Project Contact Form:
Ke (1)	K /

Apex Laboratories

Philip Nevenberg

ATTACHMENT D

DATA VALIDATION MEMORANDUM



DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

PROJECT NO. 9085.10.07 | MAY 11, 2018 | PORT OF VANCOUVER

Maul Foster & Alongi, Inc. (MFA) conducted an independent review of the quality of analytical results for groundwater and soil samples collected at the Port of Vancouver Block A property on January 30, 2018.

Apex Laboratories, LLC (Apex) performed the analyses. Apex report A8A0991, issued on May 8, 2018, was reviewed. The analyses performed and samples analyzed are listed below. Samples submitted on hold are also indicated below.

Analysis	Reference		
Diesel- and Oil-Range-Hydrocarbons	NWTPH-Dx		
Gasoline-Range Hydrocarbons	NWTPH-Gx		
Polychlorinated Biphenyls as Aroclors	USEPA 8082A		
Semivolatile Organic Compounds	USEPA 8270D		
TCLP Metals	USEPA 1311/6020A		
Total Metals	USEPA 6020A		
Volatile Organic Compounds	USEPA 8260C		

NWTPH = Northwest Total Petroleum Hydrocarbons. TCLP = toxicity characteristic leaching procedure.

USEPA = U.S. Environmental Protection Agency.

Samples Analyzed					
Report A8A0991					
GP1-S-2.0	GP2-W-26.0				
GP1-S-7.0	GP3-S-4.0				
GP1-S-11.0	GP3-S-6.5 (hold)				
GP2-S-2.5	GP3-S-14.0				
GP2-S-8.0 (hold)	Trip Blank (hold)				
GP2-S-13.0	-				

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable sections of USEPA procedures (USEPA, 2017a,b) and appropriate laboratory and method-specific guidelines (Apex, 2016; USEPA, 1986).

Data validation procedures were modified, as appropriate, to accommodate quality-control requirements for methods not specifically addressed by the USEPA procedures (e.g., NWTPH-Dx).

The NWTPH-Dx diesel-range hydrocarbon result for sample GP1-S-11.0 was flagged by Apex because of a chromatographic pattern that resembled either weathered diesel or contribution from a related component. Qualification was not required.

Apex noted that USEPA Method 8082A samples and associated batch quality control samples had been processed with sulfuric acid cleanup by USEPA Method 3665A, sulfur cleanup by USEPA Method 3660B, and florisil cleanup by USEPA Method 3620B. No action was required.

In report A8A0991, Apex flagged some USEPA Method 8270D results because of insufficient chromatographic peak separation. Results are considered estimated, and have been qualified by the reviewer with "J" in the following table:

Report	Sample	Component	Units	Original Result	Qualified Result
		Benzo(a)anthracene	ug/kg	39.2	39.2 J
	GP1-S-2.0	Benzo(b)fluoranthene		53.5	53.5 J
		Chrysene		56.4	56.4 J
	GP1-S-11.0	Benzo(a)anthracene		5.41	5.41 J
A 9 A 0001		Benzo(b)fluoranthene		8.90	8.90 J
A0A0991		Chrysene		6.33	6.33 J
	GP2-W-26.0	Benzo(a)anthracene	ug/L	0.0338	0.0338 J
		Benzo(b)fluoranthene		0.0778	0.0778 J
		Benzo(k)fluoranthene		0.0367	0.0367 J
		Chrysene		0.0437	0.0437 J

ug/kg = micrograms per kilogram.

ug/L = micrograms per liter.

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

HOLDING TIMES, PRESERVATION, AND SAMPLE STORAGE

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

BLANKS

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. For purposes of data qualification, the method blanks were associated with all samples prepared in the

analytical batch. All laboratory method blank samples were non-detect to method reporting limits (MRLs).

Trip Blanks

A trip blank sample was submitted to Apex on hold. Analysis was not required, as the associated sample, GP2-W-26.0, was analyzed for USEPA Method 8260C and was non-detect for all volatile organic compounds.

Equipment Rinsate Blanks

Equipment rinsate blanks were not submitted for this sampling event.

SURROGATE RECOVERY RESULTS

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. The laboratory appropriately documented and qualified surrogate outliers.

The USEPA Method 8270D percent recovery results for surrogates nitrobenzene-d5 and 2-fluorobiphenyl were below the lower percent recover acceptance limit of 44 percent, at 36 percent and 39 percent, respectively, for sample GP2-W-26.0. The remaining four surrogates had acceptable percent recoveries; thus, no associated sample results were qualified.

All remaining surrogate recoveries were within acceptance limits.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

Matrix spike/matrix spike duplicate (MS/MSD) results are used to evaluate laboratory precision and accuracy. NWTPH-Dx batch 8020338 quality control results were flagged to indicate that batch precision had been evaluated with a laboratory control sample/laboratory control sample duplicate (LCS/LCSD) pair. The remaining MS/MSD samples were extracted and analyzed at the required frequency.

When MS/MSD percent recoveries and relative percent differences (RPDs) were outside acceptance limits because of high concentrations of analyte in the sample, and MS/MSD exceedances were flagged by the laboratory because of high concentrations of analyte or dilutions performed, no qualifications were made by the reviewer.

The USEPA Method 6020A batch 8020624 MS (8020624-MS2) exceeded the upper percent recovery acceptance limit of 125 percent for barium and chromium, at 131 percent and 408 percent, respectively, and exceeded the lower percent recovery acceptance limit of 75 percent for lead, at 60.9 percent. The MS had been prepared with a sample from an unrelated project, and a second MS prepared with project sample GP2-S-13.0 had acceptable percent recoveries; thus, no results were qualified.

All recoveries were within acceptance limits for percent recovery and RPDs.

LABORATORY DUPLICATE RESULTS

Duplicate results are used to evaluate laboratory precision. All duplicate samples were extracted and analyzed at the required frequency. Laboratory duplicate results within five times the MRL were not evaluated for precision.

The USEPA Method 8270D batch 8020650 laboratory duplicate exceeded several RPD control limits of 30 percent. The reviewer confirmed that all laboratory duplicate results were less than five times the MRL; thus, no results were qualified.

All remaining laboratory duplicate RPDs were within acceptance limits.

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS

An LCS/LCSD is spiked with target analytes to provide information on laboratory precision and accuracy. The LCS/LCSD samples were extracted and analyzed at the required frequency.

The USEPA Method 8260C batch 8011218 LCS exceeded the upper percent recovery acceptance limit of 120 percent for bromomethane and carbon tetrachloride, at 129 percent and 122 percent, respectively. The associated sample results were non-detect; thus, no results were qualified.

All remaining LCS/LCSD results were within acceptance limits for percent recovery and RPD.

FIELD DUPLICATE RESULTS

Field duplicate samples measure both field and laboratory precision. Field duplicate samples were not submitted for analysis.

CONTINUING CALIBRATION VERIFICATION RESULTS

Continue calibration verification (CCV) results are used to demonstrate instrument precision and accuracy through the end of the sample batch. CCV results were not reported. Some USEPA Method 8260C batch quality control sample results were flagged because of association with CCV results that exceed the 20 percent drift acceptance criterion. The USEPA Method 8260C states that CCV percent drift acceptance criterion must be met for more than 20 percent of the compounds included in the initial calibration. When at least 80 percent of the compounds have met acceptance criteria, non-detects may be reported for compounds that exceed acceptance limits if the laboratory demonstrates that quantitation limit sensitivity can still be achieved; detected compounds with CCV percent drift exceedances may be reported as estimated values. The reviewer took no action based on quality control sample flags for CCV exceedances when quality control results met acceptance criteria.

REPORTING LIMITS

Apex used routine reporting limits for non-detect results, except for samples requiring dilutions because of high analyte concentrations and/or matrix interferences.

R:\9085.10 Port of Vancouver\Document\07_2018.05.11 DRAFT Block A Investigation Report\Attachment D -DVM\DVM_POV_BlockA_2018.docx The USEPA Method 8270D dibenzofuran reporting limit was raised for sample GP1-S-11.0 because of matrix interference. No additional action was required.

DATA PACKAGE

The data packages were reviewed for transcription errors, omissions, and anomalies.

A trip blank was submitted with sample delivery group A8A0991; however, the trip blank sample was not recorded on the chain of custody (COC). Instructions for trip blank analysis were recorded in the special instructions section of the COC. The reviewer notified the sampler that all samples should be recorded on the COC; no additional action was required.

Based on NWTPH-Dx detected results, USEPA Method 8270D analysis was added to samples GP1-S-2.0 and GP1-S-11.0 by the MFA project manager after samples were received by Apex. No action was required by the reviewer.

No additional issues were found.

- Apex. 2016. Quality systems manual. Rev. 5. Apex Laboratories, LLC., Tigard, Oregon. April 1.
- USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. EPA-530/SW-846. Update V. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. September (revision 1, July 2014).
- USEPA. 2017a. USEPA contract laboratory program, national functional guidelines for inorganic Superfund methods data review. EPA 540-R-2017-001. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. January.
- USEPA. 2017b. USEPA contract laboratory program, national functional guidelines for Superfund organic methods data review. EPA 540-R-2017-002. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. January.