APPENDIX A
Documentation of Ecology's Acceptance of the City's Imported Fill Source

Tisha L. Nash

From: Abbett, Marian L. (ECY) <MABB461@ECY.WA.GOV>
Sent: Tuesday, October 30, 2012 4:51 PM
To: Rob Leet
Cc: Warren Snyder (warren.snyder@rayonier.com); Kurt S. Anderson; Rich McManus (rmcmanus@farallonconsulting.com); Parker, Keith (Keith.Parker@vanir.com)
Subject: RE: Request for Ecology Approval to Use Imported Fill from Holcomb Pit/Black Diamond Quarry

Follow Up Flag: Follow up
Flag Status: Flagged

Ecology reviewed the Request for Approval to Use Imported Fill from Holcomb Pit/Black Diamond Quarry memo dated October 29, 2012. Thank you for the summary of sampling results and evaluation related to Ecology's natural background study and site groundwater.

Ecology agrees that the source material does not exceed the applicable soil screening levels as required in the Material Management Plan, except for copper. The memo provides reasonable rationale to support that the copper values are within the range of natural background, and not likely to be a source to groundwater on the site.

Therefore, Ecology agrees that the source for import fill is acceptable.

From: Rob Leet [mailto:rleet@geoengineers.com]
Sent: Monday, October 29, 2012 5:58 PM
To: Abbett, Marian L. (ECY)
Cc: Warren Snyder (warren.snyder@rayonier.com); Kurt S. Anderson; Rich McManus (rmcmanus@farallonconsulting.com); Parker, Keith (Keith.Parker@vanir.com)
Subject: Request for Ecology Approval to Use Imported Fill from Holcomb Pit/Black Diamond Quarry

Marian,

Please see the attached memo. We request that you review this request at your earliest convenience so the City of Port Angeles can minimize further delays on their CSO project.

Thank you,

Rob

Rob Leet, PhD, LG
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MEMORANDUM

TO: Marian Abbett, Washington Department of Ecology

FROM: Rob Leet

DATE: October 29, 2012

FILE: 0137-015-03-0510-01

SUBJECT: Request for Approval to Use Imported Fill from Holcomb Pit /Black Diamond Quarry, Clallam County, Washington
Port Angeles Rayonier Mill Site, Port Angeles, Washington

Marian,

The Final Materials Management Plan for the City of Port Angeles combined sewer overflow (CSO) construction project (GeoEngineers, July 17, 2012) included the following requirement (fourth bullet on p. 4):

> "The City shall verify that all imported backfill material does not exceed applicable soil screening levels provided in the Public Review Draft Interim Action Report Volume I: Upland Data Summary Report for the Study Area (GeoEngineers, 2012a)."

The City included this requirement in their contract specifications for the project. On October 17, 2012, the City's contractor (IMCO General Contractors) submitted analytical testing results for two samples of material it proposed to use as backfill to the City for acceptance/conformance with specifications. The samples, designated "Holcomb Pit 1" and "Holcomb Pit 2," came from the Holcomb Pit/Black Diamond Quarry, located approximately 3.5 miles southwest of Port Angeles. The City rejected the material based on the initial submittal because reported concentrations of three metals in the samples – cobalt, copper, and silver – exceeded screening levels. The initial results for these metals were as follows:

Metal	Screening Level (mg/kg)	Holcomb Pit 1 (mg/kg) (Method 6010B)	Holcomb Pit 2 (mg/kg) (Method 6010B)
Cobalt	20	27.8	25.7
Copper	50	165	136
Silver	0.61	2.54	1.98

The initial analyses were performed by EPA Method 6010B (inductively coupled plasma–atomic emission spectrometry). The laboratory (AmTest Inc. of Kirkland, Washington) subsequently reanalyzed the samples using EPA Method 6020A (inductively coupled plasma–mass spectrometry), which, according to the laboratory, is more accurate than Method 6010B. The results of the reanalysis were as follows:

Metal	Screening Level (mg/kg)	Holcomb Pit 1 (mg/kg) (Method 6020A)	Holcomb Pit 2 (mg/kg) (Method 6020A)
Cobalt	20	15.9	17.7
Copper	50	107	106
Silver	0.61	0.0398	0.0539

The results from EPA Method 6020A indicate that cobalt and silver concentrations in the fill samples are below screening levels. However, although the copper concentrations obtained using Method 6020A are lower than the results obtained using Method 6010B, the copper concentrations reported in the fill samples still exceed the screening level of 50 milligrams per kilogram (mg/kg).

A review of Washington state natural background soil metals data (Ecology Publication #95-115; October, 1994) indicates that the copper concentrations reported in the samples from the Holcomb Pit (106 and 107 mg/kg) are within the range of background concentrations in Washington state. The copper concentrations detected in the 490 discrete soil samples used in Ecology's background study ranged from 3.9 to 256 mg/kg. The four highest copper concentrations reported in these samples (79.4, 99.4, 102, and 256 mg/kg) were detected in Western Washington. Three of the highest concentrations (79.4, 102, and 256 mg/kg) were detected in the Puget Sound Basin at locations ranging from approximately 37 to 72 miles from Port Angeles, including two samples collected on the Olympic Peninsula. Based on this information, and the fact that there is no known anthropogenic source of copper affecting the Holcomb Pit/Black Diamond Quarry, it appears that the copper reported in the fill samples is naturally-occurring. It is worth noting that fill material from the Holcomb Pit has historically been used at numerous construction sites in the Port Angeles area.

The imported fill will be placed in the CSO pipeline trench, which is hydraulically upgradient of the former pulp mill processing/manufacturing facilities. Accordingly, groundwater migrating through this area towards Port Angeles Harbor is expected to have a neutral pH. Thus, it is unlikely that the naturally-occurring copper in the fill will leach to groundwater at concentrations of concern.

Based on the information presented above, GeoEngineers, on behalf of Rayonier and the City of Port Angeles, requests Ecology's approval for the City to use imported fill from the Holcomb Pit/Black Diamond Quarry as backfill material in the CSO pipeline trench. Supporting information about the Holcomb Pit and the samples submitted for chemical analysis (including the original and revised laboratory data reports and a comprehensive data table summarizing the analytical testing results) was provided to GeoEngineers by the City's consultant (Farallon Consulting), and is attached to this memorandum.

Please contact me at (206) 239-3230 if you have any questions. Thank you in advance for your timely consideration of this request.

Attachments

Information Provided by Farallon Consulting (City of Port Angeles' Consultant)

Fill material proposed to be incorporated in the Phase I CSO Improvements Project is from the D. Holcomb & Company, Black Diamond Quarry, 4006 Black Diamond Road, Port Angeles, Washington (SE1/4, SW1/4 Lot 4, Section 30 T30N R6W).

The Black Diamond Quarry is an approved Washington State Department of Transportation aggregate source (WSDOT Aggregate Source QS-Q-72). The quarry has been producing material since the 1940's and currently produces in excess of 50,000 cubic yards of product per year. Quarried and screened material has been used in construction projects throughout the greater Clallam County area including:

- Hurricane Ridge road – culvert & utilities – work done in Olympic National Park by Lakeside
- Lower Elwha Road/Kacee Way – Scarsella Bros.
- Sol Duc Road [inside Olympic National Park]
- Discovery Trail – slide repairs, rip rap and repaving portions of the trail along the waterfront just east of the Rayonier site – Jordan Excavating
- Lake Crescent – SR 101 road work
- City of Port Angeles – bedding and backfill for water line projects throughout city
- Port of Port Angeles – surfacing, rip rap, other rock and gravel materials along shoreline, on Port property and repair and improvements along Ediz Hook

A representative from IMCO General Contractors collected samples of shot rock and screened shot rock the last week of September 2012. The samples were derived from shot rock quarried from the central working face of the Black Diamond Quarry Holcomb Pit (see photos attached). Two discrete samples were collected in new 5-gallon plastic buckets with watertight lids. Sample 1 was collected from screened shot rock intended for use as trench bedding and backfill (photos 003 and 004). Sample 2 was collected from shot rock that was to be processed into multiple products for use on the project (raw shot rock similar to that at the bottom of slope in photos 001 and 002).

The soil samples were transferred by an IMCO employee to AmTest Inc. analytical laboratory, 13600 NE 126th Place, Suite C, Kirkland, Washington on October 1, 2012.

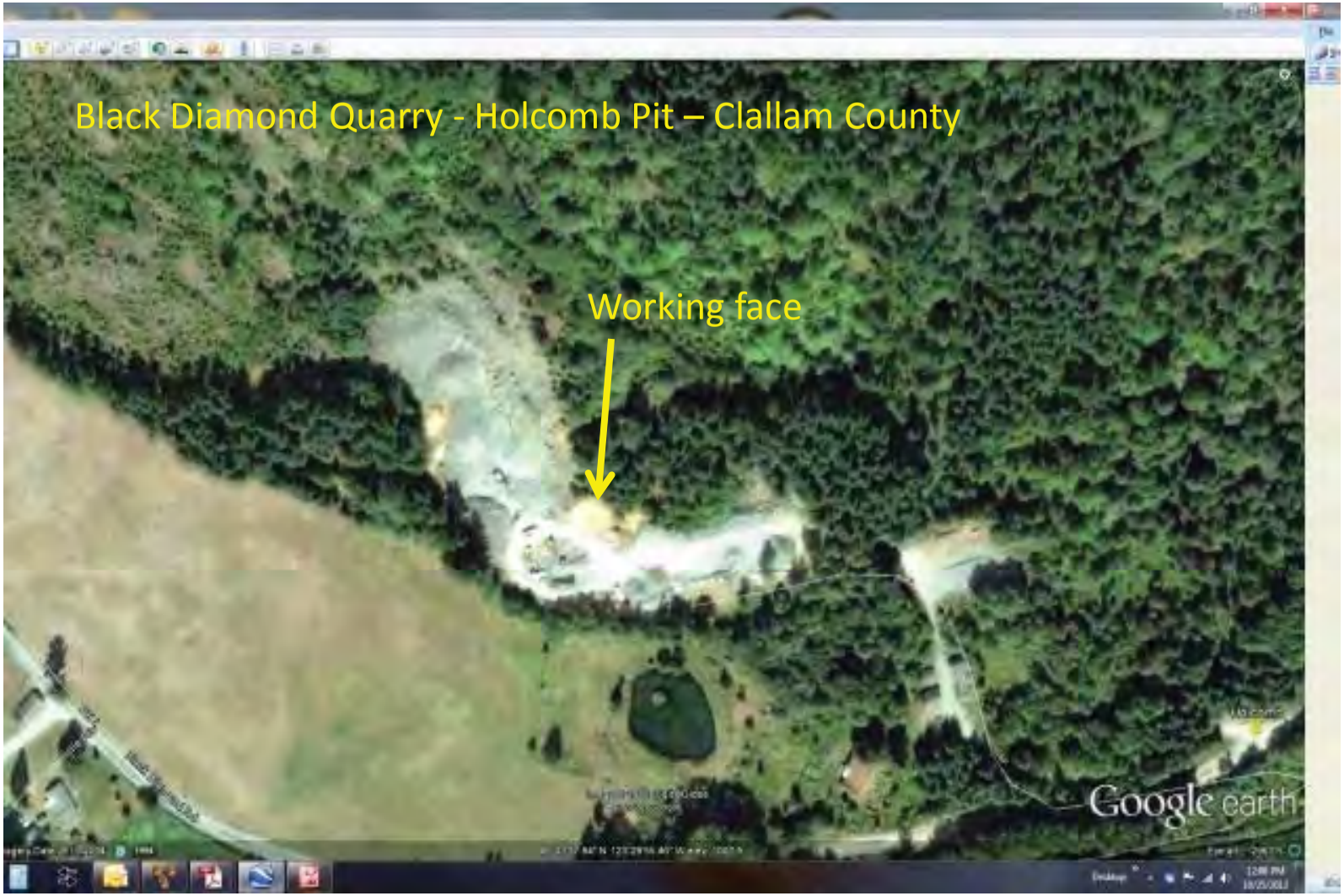

Black Diamond Quarry - Holcomb Pit – Clallam County
Working face
Google earth

Photo 001

Photo 002

Photo 003

Photo 004

Table 1

Summary of Soil Screening Levels

Port Angeles Rayonier Mill Study Area, Upland Data Summary Report
Port Angeles, Washington

Analyte	Soil Screening Level (After adjustment for background and PQL) mg/kg	Soil Test Results-Pit 1, Test 1 (mg/kg)	Soil Test Results-Pit 1, reanalysis (mg/kg)	Soil Test Results-Pit 2, Test 1 (mg/kg)	Soil Test Results-Pit 2, reanalysis (mg/kg)
TPH					
Gasoline-Range Petroleum Hydrocarbons	30	0.236		0.209	
Diesel-Range Petroleum Hydrocarbons	200	<25		<25	
Heavy Oil-Range Petroleum Hydrocarbons	200	<50		<50	
Metals					
Aluminum	32,600	23,400		21,200	
Antimony	5	<3.5		<0.5	
Arsenic	20	<3.5		<0.5	
Barium	102	1.71		1.59	
Beryllium	10	0.528		0.488	
Cadmium	1.2	<1.046	0.0473	<1.424	0.0646
Chromium III	120,000	38.5		33.4	
Chromium VI	19	<0.51			
Chromium (Total)	48	38.5			
Cobalt	20	**27.8**	15.9	**25.7**	17.7
Copper	50	**165**	**107**	**136**	**106**
Lead	50	<3.5		<0.5	
Manganese	1,200	610		526	
Mercury	0.07	<0.0051		<0.0051	
Nickel	48	22.4		22.2	
Selenium	0.3	<3.5	0.17	<0.5	0.184
Silver	0.61	**2.54**	0.0398	**1.98**	0.0539
Thallium	0.67	<3.5	0.0136	<0.5	0.016
Vanadium	297	115		108	
Zinc	86	54.1		50.6	
VOCs					
1,1,1-Trichloroethane	3,300	<0.001		<0.001	
1,1,2,2-Tetrachloroethane	0.022	<0.001		<0.001	
1,1,2-Trichloroethane	0.089	<0.001		<0.001	
1,1-Dichloroethane	16,000	<0.001		<0.001	
1,1-Dichloroethene	0.023	<0.001		<0.001	
1,2-Dichloroethane	0.18	<0.001		<0.001	
1,2-Dichloroethene	720	< 0.001		< 0.001	
1,2-Dichloropropane	0.077	<0.001		<0.001	
1,3-Dichloropropene (cis-, trans-)	0.11	<0.001		<0.001	
2-Butanone (MEK)	48,000	0.0116		<0.01	
4-Methyl-2-Pentanone (MIBK)	6,400	<0.01		<0.01	
Acetone	8,000	0.0901		0.0609	
Benzene	0.13	<0.001		<0.001	
Bromodichloromethane	0.089	<0.001		<0.001	
Bromoform	0.92	<0.001		<0.001	
Bromomethane	4.5	<0.005		<0.005	
Carbon Disulfide	8,000	0.002		0.0017	
Carbon Tetrachloride	0.015	<0.001		<0.001	
Chlorobenzene	14	<0.001		<0.001	
Chloroethane	350	<0.005		<0.005	
Chloroform	1.5	<0.001		<0.001	
Chloromethane	0.62	<0.005		<0.005	
cis-1,2-Dichloroethene	800	< 0.001		< 0.001	
Dibromochloromethane	0.069	<0.001		<0.001	
Ethylbenzene	18.10	<0.001		<0.001	
methyl tert-butyl ether (MTBE)	560	< 0.001		< 0.001	
Methylene Chloride (Dichloromethane)	2.6	0.0346		0.0354	
Styrene	33	<0.001		<0.001	
Toluene	110	0.0054		0.0048	
Total Xylenes	9.1	<0.001		<0.001	
Tetrachloroethene (PCE)	0.0041	<0.001		<0.001	
trans-1,2-Dichloroethene	54	< 0.001		< 0.001	
Trichloroethene (TCE)	0.044	<0.001		<0.001	
Vinyl Acetate	80,000	<0.005		<0.005	
Vinyl chloride	0.015	<0.005		<0.005	
PAHs					
Acenaphthene	20	<0.0061		<0.0061	
Anthracene	12,000	<0.0061		<0.0061	
Dibenzofuran	160	< 0.061		< 0.061	
Fluoranthene	89	<0.0061		<0.0061	
Fluorene	30	<0.0061		<0.0061	
2-Methylnaphthalene	320	<0.0061		<0.0061	
Naphthalene	140	<0.061		<0.061	
Pyrene	2,400	<0.0061		<0.0061	
Total cPAHs TEC	0.14	< 0.1037		< 0.1037	

Analyte	Soil Screening Level (After adjustment for background and PQL) mg/kg	Soil Test Results-Pit 1, Test 1 (mg/kg)	Soil Test Results-Pit 1, reanalysis (mg/kg)	Soil Test Results-Pit 2, Test 1 (mg/kg)	Soil Test Results-Pit 2, reanalysis (mg/kg)
SVOCs					
1,2,4-Trichlorobenzene	2.6	<0.061		<0.061	
1,2-Dichlorobenzene	15	<0.061		<0.061	
1,3-Dichlorobenzene	11	<0.061		<0.061	
1,4-Dichlorobenzene	0.080	<0.061		<0.061	
2,6-Dinitrotoluene	80	<0.15		<0.15	
2,4,5-Trichlorophenol	4	<0.061		<0.061	
2,4,6-Trichlorophenol	0.028	<0.061	<0.024	<0.061	<0.024
2,4-Dichlorophenol	1.30	<0.061		<0.061	
2,4-Dimethylphenol	4.50	<0.061		<0.061	
2,4-Dinitrophenol	14	<0.3		<0.31	
2,4-Dinitrotoluene	0.1	<0.15	<0.050	<0.15	<0.050
2-Chloronaphthalene	54	<0.061		<0.061	
2-Chlorophenol	1.1	<0.061		<0.061	
2-Methylphenol	4,000	<0.061		<0.061	
3,3'-Dichlorobenzidine	0.1	<0.091		<0.092	
4-Chloroaniline	320	<0.061		<0.061	
4-Methylphenol	400	<0.061		<0.061	
Benzyl alcohol	24,000	<0.061		<0.061	
Bis(2-chloro-1-methylethyl) ether	0.21	< 0.061		< 0.061	
bis(2-Chloroethyl)ether	0.020	<0.061	<0.019	<0.061	<0.019
bis(2-Chloroisopropyl) ether	240	<0.061		<0.061	
bis (2-ethylhexyl) Phthalate	4.9	<0.061		<0.061	
Butylbenzylphthalate	360	<0.061		<0.061	
Carbazole	50	<0.061		<0.061	
Diethylphthalate	100	<0.061		<0.061	
Dimethylphthalate	200	<0.061		<0.061	
Di-n-butylphthalate	100	<0.061		<0.061	
Di-n-octylphthalate	1,600	<0.03		<0.031	
Hexachlorobutadiene	13	<0.061		<0.061	
Hexachlorocyclopentadiene	10	<0.15		<0.15	
Hexachloroethane	0.13	<0.061		<0.061	
Isophorone	3.0	<0.061		<0.061	
Nitrobenzene	2.9	<0.061		<0.061	
N-Nitroso-di-n-propylamine	0.1	<0.061		<0.061	
N-Nitrosodiphenylamine	0.18	<0.061		<0.061	
Pentachlorophenol	0.048	<0.15	<0.041	<0.15	<0.041
Phenol	30	<0.061		<0.061	
Dioxins/Furans					
Total Dioxins/Furans TEC	5.2E-06	2.62E-06		-	
PCBs					
Total PCBs (sum of Aroclors)	0.004	<0.1176	<0.1176	<0.1162	<0.1162
Pesticides					
Aldrin	0.0010	<0.001		<0.000993	
alpha-BHC	0.0010	<0.001		<0.000993	
alpha-Chlordane	0.0010	< 0.001		< 0.001	
beta-BHC	0.0010	<0.001		<0.000993	
4,4'-DDD	0.0020	<0.001		<0.000993	
4,4'-DDE	0.0020	<0.001		<0.000993	
4,4'-DDT	0.0030	<0.001		<0.000993	
Dieldrin	0.0020	<0.001		<0.000993	
Endosulfan I	0.0012	<0.001		<0.000993	
Endosulfan II	0.0020	<0.001		<0.000993	
Endosulfan Sulfate	0.0020	<0.001		<0.000993	
Endrin	0.0020	<0.001		<0.000993	
Endrin Aldehyde	0.0020	<0.001		<0.000993	
Endrin Ketone	0.0020	< 0.001		< 0.001	
gamma-BHC (Lindane)	0.0012	<0.001		<0.000993	
gamma-Chlordane	0.0010	< 0.001		< 0.001	
Heptachlor	0.0010	<0.001		<0.000993	
Heptachlor epoxide	0.0010	<0.001		<0.000993	
Hexachlorobenzene	0.0010	<0.061		<0.061	
Methoxychlor	0.048	<0.001		<0.000993	
Toxaphene	0.10	<0.00838		<0.0828	

Notes:

- Screening levels were developed for all constituents analyzed in soil.

- Screening level is based on lowest of soil concentrations protective of groundwater, human health - direct contact (MTCA Method B standard formula values for carcinogens and non-carcinogens), and terrestrial plants and animals, adjusted for background and practical quantification limit (PQL).

mg/kg = Millgrams per kilogram
PAHs = Polycyclic aromatic hydrocarbons
cPAHs = Carcinogenic polycyclic aromatic hydrocarbons
PCBs = Polychlorinated biphenyls
PQL = Practical quantitation limit
VOCs = Volatile organic compounds
SVOCs = Semivolatile organic compounds
TEC = Toxic equivalent concentration
TPH = Total petroleum hydrocarbons

Exceeds Soil Screening Level

Stockpile Pit Sampleing
City of Port Angeles
1005-001

Analyte	Toxicity Equivalency Factor (unitless)	Reporting Limit (ng/kg)	Sample ID 1224715-01 Results (ng/kg)	TEC (ng/kg)
Dioxin Congeners				
2,3,7,8-Tertachloro dibenzo-p-dioxin	1	1	ND	0.5
1,2,3,7,8-Pentachloro dibenzo-p-dioxin	1	2	ND	1
1,2,3,4,7,8-Hexachloro dibenzo-p-dioxin	0.1	2	ND	0.1
1,2,3,6,7,8-Hexachloro dibenzo-p-dioxin	0.1	2	ND	0.1
1,2,3,7,8,9-Hexachloro dibenzo-p-dioxin	0.1	2	ND	0.1
1,2,3,4,6,7,8-Heptachloro dibenzo-p-dioxin	0.01	2	ND	0.01
1,2,3,4,6,7,8,9-Octachloro dibenzo-p-dioxin	0.0003	4.1	31.76	0.009528
Furan Congeners				
2,3,7,8-Tetrachloro dibenzofuran	0.1	1	ND	0.05
1,2,3,7,8-Pentachloro dibenzofuran	0.03	2	ND	0.03
2,3,4,7,8-Pentachloro dibenzofuran	0.3	2	ND	0.3
1,2,3,4,7,8-Hexachloro dibenzofuran	0.1	2	ND	0.1
1,2,3,4,6,7,8-Hexachloro dibenfuran	0.1	2	ND	0.1
2,3,4,6,7,8-Hexachloro dibenzofuran	0.1	2	ND	0.1
1,2,3,7,8,9-Hexachloro dibenzofuran	0.1	2	ND	0.1
1,2,3,4,6,7,8-Heptachloro dibenzofuran	0.01	2	ND	0.01
1,2,3,4,7,8,9-Heptachloro dibenzofuran	0.01	2	ND	0.01
1,2,3,4,6,7,8,9-Octoachloro dibenzofuran	0.0003	4.1	ND	0.000615
TOTAL				2.620143

SUBMITTAL TRANSMITTAL

Submittal Description: Aggregate Submittal Submittal No:[1] 02200-002

Spec Section: 02200

	Routing	Sent	Received
OWNER: City of Port Angeles	Contractor/CM		
PROJECT: City of Port Angeles Phase 1 CSO Project	CM/Project Rep		
	Project Rep/CM		
CONTRACTOR:IMCO General Construction, Inc	CM/Contractor		

We are sending you
- ■ Attached
- ■ Submittals for review and comment
- ☐ Under separate cover via: Hand Delivered
- ☐ Product data for information only

Remarks: _____

Item	Copies	Date	Section No.	Description	Review action[a]	Reviewer initials	Review comments attached
1	1	10/17/12	1.04 C. 4	Chemical analysis for pipe bedding, trench backfill Holcomb pit 1 & 2			

[a]**Note: NET = No exceptions taken; MCN = Make corrections noted; A&R = Amend and resubmit; R = Rejected** Attach additional sheets if necessary.

Contractor

Certify either A or B:

■ A. We have verified that the material or equipment contained in this submittal meets all the requirements, including coordination with all related work, specified (no exceptions).

☐ B. We have verified that the material or equipment contained in this submittal meets all the requirements specified except for the attached deviations.

No.	Deviation

Certified by: _____
Contractor's Signature

[1]See paragraph 01300-4.0 A, Transmittal Procedure.

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

IMCO General Construction

Date Received: 10/01/12
Date Reported: 10/17/12

,
Attention: Tim Yedinak
Project Name: Port Angeles Phase 1 CSO
Project #: 32/7
PO Number: 3217
All results reported on a dry weight basis.

AMTEST Identification Number **12-A014937**
Client Identification **Holcomb Pit 1**
Sampling Date

Conventionals dry weight

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Hexavalent Chromium	< 0.51	ug/g		0.15	EPA 7196	EB	10/08/12

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	98.5	%		0.1	SM 2540G	EB	10/05/12

Total Metals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Acid Digestion	Y				SW-846 3050B	CG	10/04/12
Silver	2.54	ug/g		1.75	SW-846 6010B	CG	10/05/12
Aluminum	23400	ug/g		3.50	SW-846 6010B	CG	10/05/12
Arsenic	< 3.5	ug/g		3.50	SW-846 6010B	CG	10/05/12
Barium	1.71	ug/g		0.175	SW-846 6010B	CG	10/05/12
Beryllium	0.528	ug/g		0.175	SW-846 6010B	CG	10/05/12
Cadmium	< 1.046	ug/g		0.876	SW-846 6010B	KF	10/17/12
Cobalt	27.8	ug/g		0.350	SW-846 6010B	CG	10/05/12
Chromium	38.5	ug/g		0.350	SW-846 6010B	CG	10/05/12
Copper	165.	ug/g		0.350	SW-846 6010B	CG	10/05/12
Manganese	610.	ug/g		0.175	SW-846 6010B	CG	10/05/12
Nickel	22.4	ug/g		1.75	SW-846 6010B	CG	10/05/12
Lead	< 3.5	ug/g		3.50	SW-846 6010B	CG	10/05/12
Antimony	< 3.5	ug/g		3.50	SW-846 6010B	CG	10/05/12
Selenium	< 3.5	ug/g		3.50	SW-846 6010B	CG	10/05/12
Thallium	< 3.5	ug/g		3.50	SW-846 6010B	CG	10/05/12
Vanadium	115.	ug/g		1.75	SW-846 6010B	CG	10/05/12
Zinc	54.1	ug/g		0.350	SW-846 6010B	CG	10/05/12
Mercury	< 0.0051	ug/g		0.01	SW-846 7471B	SS	10/09/12

NWTPH-Dx (Soil)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Diesel	< 25	mg/kg		25.	NWTPH-Dx	MO	10/09/12
Heavy Oil	< 50	mg/kg		50.	NWTPH-Dx	MO	10/09/12

Surrogates

ANALYTE	% RECOVERY	LIMITS
Bromofluorobenzene	91.9 %	50.0 - 150.
2-Fluorobiphenyl	97.0 %	50.0 - 150.

NWTPH-Gx and BTEX

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Gasoline in Soil	236.	ug/kg		96.	WDOE NWTPH-Gx	NLN	10/11/12
Benzene	< 5	ug/kg		4.8	EPA 8260	NLN	10/11/12
Toluene	13.	ug/kg		4.8	EPA 8260	NLN	10/11/12
Ethyl Benzene	< 5	ug/kg		4.8	EPA 8260	NLN	10/11/12
m+p-Xylene	< 5	ug/kg		4.8	EPA 8260	NLN	10/11/12
o-Xylene	< 5	ug/kg		4.8	EPA 8260	NLN	10/11/12

Surrogate

ANALYTE	% RECOVERY	LIMITS
Bromofluorobenzene	96.7 %	70.0 - 130.

Volatile Organic Analysis (VOA's)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
1,1,1-Trichloroethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,1,2,2-Tetrachloroethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,1,2-Trichloroethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,1-Dichlorethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,1-Dichloroethylene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,2-Dichloroethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,2-Dichloropropane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,4-Dichlorobenzene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
2-Butanone (MEK)	11.6	ug/kg		9.7	SW-846 8260B	NLN	10/05/12
2-Hexanone	< 10	ug/kg		9.7	SW-846 8260B	NLN	10/05/12
4-Methyl-2-Pentanone	< 10	ug/kg		9.7	SW-846 8260B	NLN	10/05/12
Acetone	90.1	ug/kg		19.	SW-846 8260B	NLN	10/05/12
Benzene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Bromodichloromethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Bromoform	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Bromomethane	< 5	ug/kg		4.8	SW-846 8260B	NLN	10/05/12
Carbon Disulfide	2.0	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Carbon Tetrachloride	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Chlorobenzene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Chlorodibromomethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Chloroethane	< 5	ug/kg		4.8	SW-846 8260B	NLN	10/05/12
Chloroform	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Chloromethane	< 5	ug/kg		4.8	SW-846 8260B	NLN	10/05/12
Cis-1,3-Dichloropropene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Ethyl Benzene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Methylene Chloride	34.6	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Styrene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Tetrachloroethylene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Toluene	5.4	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Total Xylenes	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Trans-1,3-Dichloropropene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Trichloroethylene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Trichlorofluoromethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Vinyl Acetate	< 5	ug/kg		4.8	SW-846 8260B	NLN	10/05/12
Vinyl Chloride	< 5	ug/kg		4.8	SW-846 8260B	NLN	10/05/12

VOA Surrogates

ANALYTE	% RECOVERY	LIMITS
D4-1,2,-Dichloroethane	89.4 %	70.0 - 134.
D8-Toluene (Soil)	104. %	72.0 - 121.
4-Bromofluorobenzene S	88.0 %	69.0 - 115.

Semi-Volatiles

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
1,2,4-Trichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
1,2-Dichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
1,3-Dichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
1,4-Dichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4,5-Trichlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4,6-Trichlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4-Dichlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4-Dimethylphenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4-Dinitrophenol	< 300	ug/kg		300	EPA 8270	NLN	10/12/12
2,4-Dinitrotoluene	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
2,6-Dinitrotoluene	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
2-Chloronaphthalene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2-Chlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2-Methylphenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2-Nitroaniline	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
2-Nitrophenol	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
3,3-Dichlrobenzidine	< 91	ug/kg		91.	EPA 8270	NLN	10/12/12
3-Nitroaniline	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
4,6-Dinitro-2-methylpheno	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
4-Bromophenyl-phenyl ethe	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Chloro-3-methylphenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Chloroaniline	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Chlorophenyl-phenyl eth	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Methylphenol (cresol)	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Nitroaniline	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
4-Nitrophenol	< 300	ug/kg		300	EPA 8270	NLN	10/12/12
Aniline	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Azobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Benzidine	< 1500	ug/kg		1500	EPA 8270	NLN	10/12/12
Benzoic Acid	< 30	ug/kg		30.	EPA 8270	NLN	10/12/12
Benzyl Alcohol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Chloroethoxy)methan	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Chloroethyl)ether	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Chloroisopropyl)eth	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Ethylhexyl)phthalat	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Butylbenzylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Carbazole	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Dibenzofuran	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Diethylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Dimethylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Di-n-butylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Hexachlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12

Semi-Volatiles continued...

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Hexachlorobutadiene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Hexachlorocyclopentadiene	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
Hexachloroethane	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Isophorone	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Nitrobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
N-Nitrosodimethylamine	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
N-Nitroso-di-n-propylamin	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
N-nitrosodiphenylamine	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Pentachlorophenol	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
Phenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12

Polynuclear Aromatic Hydrocarbons (PAH)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
2-Methylnaphthalene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Acenaphthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Acenaphthylene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Anthracene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(a)anthracene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(a)pyrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(b)fluoranthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(g,h,i)perylene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(k)fluoranthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Chrysene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Dibenzo(a,h)anthracene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Di-n-octylphthalate	< 30	ug/kg		30.	EPA 8270	NLN	10/12/12
Fluoranthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Fluorene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Indeno(1,2,3-cd)pyrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Naphthalene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Phenanthrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Pyrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12

Semi-Volatile Surrogates

ANALYTE	% RECOVERY	LIMITS
2-Fluorophenol (Soil)	80.7 %	26.5 - 120.
D6-Phenol (Soil)	49.1 %	23.0 - 135.
D5-Nitrobenzene (Soil)	62.2 %	17.0 - 115.
2-Fluorobiphenyl (Soil)	52.4 %	25.0 - 118.
2,4,6-Tribromophenol S	38.5 %	28.0 - 137.
D14-Terphenyl (Soil)	94.1 %	44.0 - 141.

Organo-chlorine Pesticides

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Alpha BHC	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Lindane	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Heptachlor	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Aldrin	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Beta-BHC	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Delta-BHC	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Heptachlor Epoxide	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Endosulfan I	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
pp-DDE	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Dieldrin	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Endrin	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
pp-DDD	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Endosulfan II	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
pp-DDT	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Endrin Aldehyde	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Endosulfan Sulfate	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Methoxychlor	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Toxaphene	< 83.8	ug/kg		83.8	SW-846 8080	MO	10/11/12
Chlordane	< 3.35	ug/kg		3.35	SW-846 8080	MO	10/11/12

PCB's

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
PCB-1016	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12
PCB-1221	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12
PCB-1232	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12
PCB-1242	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12
PCB-1248	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12
PCB-1254	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12
PCB-1260	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12

Surrogates

ANALYTE	% RECOVERY	LIMITS
Tetrachloro-M-xylene	89.0 % Rec	43.3 - 135.
Decachlorobiphenyl	92.0 % Rec	40.1 - 149.

AMTEST Identification Number **12-A014938**
Client Identification **Holcomb Pit 2**
Sampling Date

Conventionals dry weight

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Hexavalent Chromium	< 0.51	ug/g		0.15	EPA 7196	EB	10/08/12

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	98.3	%		0.1	SM 2540G	EB	10/05/12

Total Metals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Acid Digestion	Y				SW-846 3050B	CG	10/04/12
Silver	1.98	ug/g		0.250	SW-846 6010B	CG	10/05/12
Aluminum	21200	ug/g		0.499	SW-846 6010B	CG	10/05/12
Arsenic	< 0.5	ug/g		0.499	SW-846 6010B	CG	10/05/12
Barium	1.59	ug/g		0.025	SW-846 6010B	CG	10/05/12
Beryllium	0.488	ug/g		0.025	SW-846 6010B	CG	10/05/12
Cadmium	< 1.424	ug/g		0.125	SW-846 6010B	KF	10/17/12
Cobalt	25.7	ug/g		0.050	SW-846 6010B	CG	10/05/12
Chromium	33.4	ug/g		0.050	SW-846 6010B	CG	10/05/12
Copper	136.	ug/g		0.050	SW-846 6010B	CG	10/05/12
Manganese	526.	ug/g		0.025	SW-846 6010B	CG	10/05/12
Nickel	22.2	ug/g		0.250	SW-846 6010B	CG	10/05/12
Lead	< 0.5	ug/g		0.499	SW-846 6010B	CG	10/05/12
Antimony	< 0.5	ug/g		0.499	SW-846 6010B	CG	10/05/12
Selenium	< 0.5	ug/g		0.499	SW-846 6010B	CG	10/05/12
Thallium	< 0.5	ug/g		0.499	SW-846 6010B	CG	10/05/12
Vanadium	108.	ug/g		0.250	SW-846 6010B	CG	10/05/12
Zinc	50.6	ug/g		0.050	SW-846 6010B	CG	10/05/12
Mercury	< 0.0051	ug/g		0.01	SW-846 7471B	SS	10/09/12

NWTPH-Dx (Soil)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Diesel	< 25	mg/kg		25.	NWTPH-Dx	MO	10/09/12
Heavy Oil	< 50	mg/kg		50.	NWTPH-Dx	MO	10/09/12

Surrogates

ANALYTE	% RECOVERY	LIMITS
Bromofluorobenzene	108. %	50.0 - 150.
2-Fluorobiphenyl	117. %	50.0 - 150.

NWTPH-Gx and BTEX

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Gasoline in Soil	209.	ug/kg		100	WDOE NWTPH-Gx	NLN	10/11/12
Benzene	< 5	ug/kg		5.0	EPA 8260	NLN	10/11/12
Toluene	11.	ug/kg		5.0	EPA 8260	NLN	10/11/12
Ethyl Benzene	< 5	ug/kg		5.0	EPA 8260	NLN	10/11/12
m+p-Xylene	< 5	ug/kg		5.0	EPA 8260	NLN	10/11/12
o-Xylene	< 5	ug/kg		5.0	EPA 8260	NLN	10/11/12

Surrogate

ANALYTE	% RECOVERY	LIMITS
Bromofluorobenzene	104. %	70.0 - 130.

Volatile Organic Analysis (VOA's)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
1,1,1-Trichloroethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,1,2,2-Tetrachloroethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,1,2-Trichloroethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,1-Dichlorethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,1-Dichloroethylene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,2-Dichloroethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,2-Dichloropropane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,4-Dichlorobenzene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
2-Butanone (MEK)	< 10	ug/kg		9.8	SW-846 8260B	NLN	10/05/12
2-Hexanone	< 10	ug/kg		9.8	SW-846 8260B	NLN	10/05/12
4-Methyl-2-Pentanone	< 10	ug/kg		9.8	SW-846 8260B	NLN	10/05/12
Acetone	60.9	ug/kg		20.	SW-846 8260B	NLN	10/05/12
Benzene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Bromodichloromethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Bromoform	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Bromomethane	< 5	ug/kg		4.9	SW-846 8260B	NLN	10/05/12
Carbon Disulfide	1.7	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Carbon Tetrachloride	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Chlorobenzene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Chlorodibromomethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Chloroethane	< 5	ug/kg		4.9	SW-846 8260B	NLN	10/05/12
Chloroform	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12

Volatile Organic Analysis (VOA's) continued...

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Chloromethane	< 5	ug/kg		4.9	SW-846 8260B	NLN	10/05/12
Cis-1,3-Dichloropropene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Ethyl Benzene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Methylene Chloride	35.4	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Styrene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Tetrachloroethylene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Toluene	4.8	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Total Xylenes	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Trans-1,3-Dichloropropene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Trichloroethylene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Trichlorofluoromethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Vinyl Acetate	< 5	ug/kg		4.9	SW-846 8260B	NLN	10/05/12
Vinyl Chloride	< 5	ug/kg		4.9	SW-846 8260B	NLN	10/05/12

VOA Surrogates

ANALYTE	% RECOVERY	LIMITS
D4-1,2,-Dichloroethane	88.8 %	70.0 - 134.
D8-Toluene (Soil)	98.4 %	72.0 - 121.
4-Bromofluorobenzene S	83.9 %	69.0 - 115.

Semi-Volatiles

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
1,2,4-Trichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
1,2-Dichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
1,3-Dichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
1,4-Dichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4,5-Trichlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4,6-Trichlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4-Dichlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4-Dimethylphenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4-Dinitrophenol	< 310	ug/kg		310	EPA 8270	NLN	10/12/12
2,4-Dinitrotoluene	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
2,6-Dinitrotoluene	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
2-Chloronaphthalene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2-Chlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2-Methylphenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2-Nitroaniline	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
2-Nitrophenol	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
3,3-Dichlrobenzidine	< 92	ug/kg		92.	EPA 8270	NLN	10/12/12
3-Nitroaniline	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
4,6-Dinitro-2-methylpheno	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
4-Bromophenyl-phenyl ethe	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12

Semi-Volatiles continued...

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
4-Chloro-3-methylphenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Chloroaniline	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Chlorophenyl-phenyl eth	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Methylphenol (cresol)	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Nitroaniline	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
4-Nitrophenol	< 310	ug/kg		310	EPA 8270	NLN	10/12/12
Aniline	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Azobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Benzidine	< 1500	ug/kg		1500	EPA 8270	NLN	10/12/12
Benzoic Acid	< 31	ug/kg		31.	EPA 8270	NLN	10/12/12
Benzyl Alcohol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Chloroethoxy)methan	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Chloroethyl)ether	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Chloroisopropyl)eth	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Ethylhexyl)phthalat	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Butylbenzylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Carbazole	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Dibenzofuran	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Diethylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Dimethylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Di-n-butylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Hexachlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Hexachlorobutadiene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Hexachlorocyclopentadiene	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
Hexachloroethane	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Isophorone	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Nitrobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
N-Nitrosodimethylamine	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
N-Nitroso-di-n-propylamin	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
N-nitrosodiphenylamine	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Pentachlorophenol	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
Phenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12

Polynuclear Aromatic Hydrocarbons (PAH)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
2-Methylnaphthalene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Acenaphthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Acenaphthylene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Anthracene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(a)anthracene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(a)pyrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(b)fluoranthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(g,h,i)perylene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(k)fluoranthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Chrysene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Dibenzo(a,h)anthracene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Di-n-octylphthalate	< 31	ug/kg		31.	EPA 8270	NLN	10/12/12
Fluoranthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Fluorene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Indeno(1,2,3-cd)pyrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Naphthalene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Phenanthrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Pyrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12

Semi-Volatile Surrogates

ANALYTE	% RECOVERY	LIMITS
2-Fluorophenol (Soil)	96.6 %	26.5 - 120.
D6-Phenol (Soil)	59.7 %	23.0 - 135.
D5-Nitrobenzene (Soil)	76.5 %	17.0 - 115.
2-Fluorobiphenyl (Soil)	65.4 %	25.0 - 118.
2,4,6-Tribromophenol S	42.2 %	28.0 - 137.
D14-Terphenyl (Soil)	88.5 %	44.0 - 141.

Organo-chlorine Pesticides

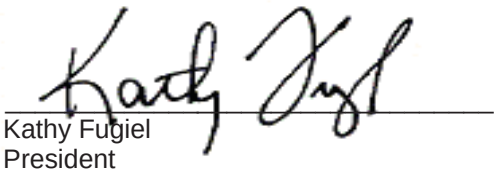
PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Alpha BHC	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Lindane	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Heptachlor	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Aldrin	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Beta-BHC	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Delta-BHC	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Heptachlor Epoxide	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Endosulfan I	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
pp-DDE	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Dieldrin	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Endrin	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
pp-DDD	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Endosulfan II	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
pp-DDT	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Endrin Aldehyde	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Endosulfan Sulfate	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Methoxychlor	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Toxaphene	< 82.8	ug/kg		82.8	SW-846 8080	MO	10/11/12
Chlordane	< 3.31	ug/kg		3.31	SW-846 8080	MO	10/11/12

PCB's

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
PCB-1016	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12
PCB-1221	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12
PCB-1232	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12
PCB-1242	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12
PCB-1248	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12
PCB-1254	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12
PCB-1260	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12

Surrogates

ANALYTE	% RECOVERY	LIMITS
Tetrachloro-M-xylene	84.0 % Rec	43.3 - 135.
Decachlorobiphenyl	89.0 % Rec	40.1 - 149.



Kathy Fugiel
President

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ENVIRONMENTAL TECHNOLOGIES, INC.
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LABORATORY REPORT

Client
Amtest
13600 NE 126th Pl. Suite C
Kirkland, WA 98034

Order Number
1224715

Project Number
12-369

Issued
Wednesday, October 17, 2012

Total Number of Pages
5 (excluding C.O.C. and cooler receipt form)

Approved By :

QA Manager

1224715

Certifications: A2LA/DOD 0724.01, Alabama 41600, Arkansas 88-0735, California 07256CA, Colorado, Connecticut PH-0105, Delaware, Florida NELAC E87688, Georgia E87688 and 943, Idaho OH00923, Illinois 200061 and Reg.5, Indiana C-OH-13, Kansas E-10347, Kentucky (underground Storage Tank) 3, Kentucky 90146, Louisiana 04061 and LA12004, Maine 2012015, Maryland 339, Massachusetts M-OPH923, Michigan (Reg.5), Minnesota 409711, Montana CERT0099, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, Ohio 4170, Ohio VAP CL0052, Oklahoma 9940, Oregon OH200001, Pennsylvania 68-01335, Rhode Island LA000317, South Carolina 92016001, Tennessee TN04018, Texas T104704466-11-5, Region 5 WG-15J, Region 8 8TMS-L, USDA/APHIS P330-11-00244, Utah OH009232011-1, Vermont VT-87688, Virginia 00440 and 1581, Washington C891, West Virginia 248 and 9957C and E87688, Wisconsin 399013010

Sample Summary

Client: Amtest
Order Number: 1224715

Laboratory ID	Client ID	Matrix	Sampling Date
1224715-01	15480	Solid	10/10/2012

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Analytical Laboratories

Report Narrative

Client: Amtest
Order Number: 1224715

No problems were encountered during analysis of this order number, except as noted.

Data Qualifiers:
B = Analyte found in the method blank
J = Estimated concentration of analyte between MDL (LOD) and Reporting Limit (LOQ)
C = Analyte has been confirmed by another instrument or method
E = Analyte exceeds the upper limit of the calibration curve.
D = Sample or extract was analyzed at a higher dilution
X = User defined data qualifier.
S = Surrogate out of control limits
U = Undetected
a = Not Accredited by NELAC

ND = Non Detected at LOQ
DF = Dilution Factor

Limit Of Quantitation (LOQ) = Laboratory Reporting Limit (not adjusted for dilution factor)
Limit Of Detection (LOD) = Method Detection Limit
Practical Quantitation Limit (PQL) = (same as LOQ)
Method Detection Limit (MDL) = (same as LOD)
Reporting Detection Limit (RDL) = (same as LOD)

Matrices:
A = Air
C = Cream
DW = Drinking Water
L = Liquid
O = Oil
SL = Sludge
SO = Soil
S = Solid
T = Tablet
TC = TCLP Extract
WW = Waste Water
W = Wipe

Estimated uncertainty values are available upon request.

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Analytical Laboratories

October 17, 2012

Client: Amtest
Address: 13600 NE 126th Pl. Suite C
Kirkland, WA 98034

Date Collected: 10/10/2012
Date Received: 10/12/2012
Project #: 12-369
Client ID #: 15480
Laboratory ID #: 1224715-01
Analysis: Dioxin/Furan (1613B)
Method: 1613B
Matrix: Solid
Date of Analysis: 10/17/2012
Analyst: CM

Dioxin/Furan (1613B)

Parameter	Reporting Limit (ng/kg)	Results (ng/kg)
2,3,7,8-TCDF	1.0	ND
1,2,3,7,8-PeCDF	2.0	ND
2,3,4,7,8-PeCDF	2.0	ND
1,2,3,4,7,8-HxCDF	2.0	ND
1,2,3,6,7,8-HxCDF	2.0	ND
2,3,4,6,7,8-HxCDF	2.0	ND
1,2,3,7,8,9-HxCDF	2.0	ND
1,2,3,4,6,7,8-HpCDF	2.0	ND
1,2,3,4,7,8,9-HpCDF	2.0	ND
OCDF	4.1	ND
2,3,7,8-TCDD	1.0	ND
1,2,3,7,8-PeCDD	2.0	ND
1,2,3,4,7,8-HxCDD	2.0	ND
1,2,3,6,7,8-HxCDD	2.0	ND
1,2,3,7,8,9-HxCDD	2.0	ND
1,2,3,4,6,7,8-HpCDD	2.0	ND
OCDD	2.0	31.76
Total TCDF	4.1	ND
Total TCDD	4.1	ND
Total PeCDF	4.1	ND
Total PeCDD	4.1	ND
Total HxCDF	4.1	ND

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Analytical Laboratories

October 17, 2012

Client: Amtest
Address: 13600 NE 126th Pl. Suite C
Kirkland, WA 98034

Date Collected: 10/10/2012
Date Received: 10/12/2012
Project #: 12-369
Client ID #: 15480
Laboratory ID #: 1224715-01
Analysis: Dioxin/Furan (1613B)
Method: 1613B
Matrix: Solid
Date of Analysis: 10/17/2012
Analyst: CM

Dioxin/Furan (1613B)

Parameter	Reporting Limit (ng/kg)	Results (ng/kg)
Total HxCDD	4.1	ND
Total HpCDF	4.1	ND
Total HpCDD	4.1	ND
ND=Not Detected		
TEQ		0.0095 ng/kg
% Solids		97.33

Results reported on dry wt.

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Analytical Laboratories

Method 1613
QC Report

Batch ID: 896
Extraction Date: 10/12/2012
ICAL Date : 3/8/2011

Parameter	1224715-01 Labeled Compound % Recovery	Acceptance Limits
13C-2,3,7,8-TCDF	59.0	24-169
13C-1,2,3,7,8-PeCDF	60.9	24-185
13C-2,3,4,7,8-PeCDF	61.5	21-178
13C-1,2,3,4,7,8-HxCDF	52.3	26-152
13C-1,2,3,6,7,8-HxCDF	64.0	26-123
13C-2,3,4,6,7,8-HxCDF	54.1	28-136
13C-1,2,3,7,8,9-HxCDF	55.0	29-147
13C-1,2,3,4,6,7,8-HpCDF	55.0	28-143
13C-1,2,3,4,7,8,9-HpCDF	59.6	26-138
13C-2,3,7,8-TCDD	53.8	25-164
13C-1,2,3,7,8-PeCDD	55.5	25-181
13C-1,2,3,4,7,8-HxCDD	49.7	32-141
13C-1,2,3,6,7,8-HxCDD	51.6	28-130
13C-1,2,3,4,6,7,8-HpCDD	51.4	23-140
13C-OCDD	47.1	17-157
37CL-2,3,7,8-TCDD	104.8	35-197

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Method 1613
QC Report

Batch ID: 896 **ICAL Date :** 3/8/2011
Extraction Date: 10/12/2012

Parameter	Analysis Date	Blank,ng/kg	Labeled Compound	Labeled Compound % Recovery	Acceptance Limits
2,3,7,8-TCDF	10/16/2012	<1.0	13C-2,3,7,8-TCDF	107.1	24-169
1,2,3,7,8-PeCDF	10/16/2012	<2.0	13C-1,2,3,7,8-PeCDF	115.3	24-185
2,3,4,7,8-PeCDF	10/16/2012	<2.0	13C-2,3,4,7,8-PeCDF	112.3	21-178
1,2,3,4,7,8-HxCDF	10/16/2012	<2.0	13C-1,2,3,4,7,8-HxCDF	90.7	26-152
1,2,3,6,7,8-HxCDF	10/16/2012	<2.0	13C-1,2,3,6,7,8-HxCDF	121.2	26-123
2,3,4,6,7,8-HxCDF	10/16/2012	<2.0	13C-2,3,4,6,7,8-HxCDF	98.3	28-136
1,2,3,7,8,9-HxCDF	10/16/2012	<2.0	13C-1,2,3,7,8,9-HxCDF	96.9	29-147
1,2,3,4,6,7,8-HpCDF	10/16/2012	<2.0	13C-1,2,3,4,6,7,8-HpCDF	96.7	28-143
1,2,3,4,7,8,9-HpCDF	10/16/2012	<2.0	13C-1,2,3,4,7,8,9-HpCDF	105.2	26-138
OCDF	10/16/2012	<5.0	13C-2,3,7,8-TCDD	102.1	25-164
2,3,7,8-TCDD	10/16/2012	<1.0	13C-1,2,3,7,8-PeCDD	103.9	25-181
1,2,3,7,8-PeCDD	10/16/2012	<2.0	13C-1,2,3,4,7,8-HxCDD	88.8	32-141
1,2,3,4,7,8-HxCDD	10/16/2012	<2.0	13C-1,2,3,6,7,8-HxCDD	97.3	28-130
1,2,3,6,7,8-HxCDD	10/16/2012	<2.0	13C-1,2,3,4,6,7,8-HpCDD	93.1	23-140
1,2,3,7,8,9-HxCDD	10/16/2012	<2.0	13C-OCDD	82.9	17-157
1,2,3,4,6,7,8-HpCDD	10/16/2012	<2.0	37CL-2,3,7,8-TCDD	95.8	35-197
OCDD	10/16/2012	<10			
Totals-TCDF	10/16/2012	<5.0			
Totals-TCDD	10/16/2012	<5.0			
Totals-PeCDF	10/16/2012	<5.0			
Totals-PeCDD	10/16/2012	<5.0			
Totals-HxCDF	10/16/2012	<5.0			
Totals-HxCDD	10/16/2012	<5.0			
Totals-HpCDF	10/16/2012	<5.0			
Totals-HpCDD	10/16/2012	<5.0			

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Analytical Laboratories

Method 1613
QC Report

Batch ID: 896 **ICAL Date :** 3/8/2011
Extraction Date: 10/12/2012

Parameter	LCS %	LCSD %	RPD %	Analysis Date	Acceptance Limits
2,3,7,8-TCDF	101.4	99.1	2.32	10/17/2012	75-158
1,2,3,7,8-PeCDF	114.4	111.7	2.40	10/17/2012	80-134
2,3,4,7,8-PeCDF	103.5	98.4	4.96	10/17/2012	68-160
1,2,3,4,7,8-HxCDF	104.1	105.2	0.99	10/17/2012	73-134
1,2,3,6,7,8-HxCDF	95.0	98.4	3.54	10/17/2012	83-130
2,3,4,6,7,8-HxCDF	102.4	107.9	5.18	10/17/2012	70-156
1,2,3,7,8,9-HxCDF	106.5	102.6	3.81	10/17/2012	78-130
1,2,3,4,6,7,8-HpCDF	113.7	113.6	0.05	10/17/2012	82-122
1,2,3,4,7,8,9-HpCDF	114.8	101.0	12.79	10/17/2012	77-138
OCDF	135.4	128.2	5.46	10/17/2012	63-170
2,3,7,8-TCDD	107.7	110.9	2.90	10/17/2012	67-158
1,2,3,7,8-PeCDD	117.0	111.7	4.70	10/17/2012	70-130
1,2,3,4,7,8-HxCDD	103.0	99.6	3.34	10/17/2012	70-164
1,2,3,6,7,8-HxCDD	124.2	121.4	2.28	10/17/2012	70-134
1,2,3,7,8,9-HxCDD	99.5	103.7	4.07	10/17/2012	64-162
1,2,3,4,6,7,8-HpCDD	109.2	109.1	0.08	10/17/2012	70-140
OCDD	121.2	116.2	4.21	10/17/2012	78-144
13C-2,3,7,8-TCDF	124.4	126.5		10/17/2012	22-152
13C-1,2,3,7,8-PeCDF	101.9	123.5		10/17/2012	21-192
13C-2,3,4,7,8-PeCDF	108.8	130.7		10/17/2012	13-328
13C-1,2,3,4,7,8-HxCDF	103.7	107.4		10/17/2012	19-202
13C-1,2,3,6,7,8-HxCDF	121.7	127.2		10/17/2012	21-159
13C-2,3,4,6,7,8-HxCDF	114.0	107.3		10/17/2012	17-205
13C-1,2,3,7,8,9-HxCDF	114.1	112.8		10/17/2012	22-176
13C-1,2,3,4,6,7,8-HpCDF	81.9	95.6		10/17/2012	21-158
13C-1,2,3,4,7,8,9-HpCDF	84.3	105.7		10/17/2012	20-186
13C-2,3,7,8-TCDD	108.6	108.4		10/17/2012	20-175
13C-1,2,3,7,8-PeCDD	95.3	117.9		10/17/2012	21-227
13C-1,2,3,4,7,8-HxCDD	102.3	100.6		10/17/2012	21-193
13C-1,2,3,6,7,8-HxCDD	112.3	113.8		10/17/2012	25-163
13C-1,2,3,4,6,7,8-HpCDD	76.1	91.3		10/17/2012	26-166
13C-OCDD	61.2	85.9		10/17/2012	13-199
37CL-2,3,7,8-TCDD	84.3	95.7		10/17/2012	31-191

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Parameter	WHO 2005 TEF
2,3,7,8-TCDF	0.1
1,2,3,7,8-PeCDF	0.03
2,3,4,7,8-PeCDF	0.3
1,2,3,4,7,8-HxCDF	0.1
1,2,3,6,7,8-HxCDF	0.1
2,3,4,6,7,8-HxCDF	0.1
1,2,3,7,8,9-HxCDF	0.1
1,2,3,4,6,7,8-HpCDF	0.01
1,2,3,4,7,8,9-HpCDF	0.01
OCDF	0.0003
2,3,7,8-TCDD	1
1,2,3,7,8-PeCDD	1
1,2,3,4,7,8-HxCDD	0.1
1,2,3,6,7,8-HxCDD	0.1
1,2,3,7,8,9-HxCDD	0.1
1,2,3,4,6,7,8-HpCDD	0.01
OCDD	0.0003

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Oct 23 2012
IMCO General Construction
Attention: Tim Yedinak

Dear Tim Yedinak:

Enclosed please find the analytical data for your Port Angeles Phase 1 CSO project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
Holcomb Pit 1	Soil	12-A014937	s8270, s8260, s8081/8082, NWTPH-Gx, sTPHD Flag, sPAH, CONV, MET, Hg-CV, BTEX, MET
Holcomb Pit 2	Soil	12-A014938	s8270, s8260, s8081/8082, NWTPH-Gx, sTPHD Flag, sPAH, CONV, MET, Hg-CV, BTEX, MET

Your samples were received on Monday, October 1, 2012. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Method Detection Limits (MDL's), as opposed to Practical Quantitation Limits (PQL's).

If you should have any questions pertaining to the data package, please feel free to conact me.

Sincerely,

Kathy Fugiel
President

Project #: 32/7
PO Number: 3217

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Minerals

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

IMCO General Construction

Date Received: 10/01/12
Date Reported: 10/23/12

,
Attention: Tim Yedinak
Project Name: Port Angeles Phase 1 CSO
Project #: 32/7
PO Number: 3217
All results reported on a dry weight basis.

AMTEST Identification Number **12-A014937**
Client Identification **Holcomb Pit 1**
Sampling Date

Conventionals dry weight

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Hexavalent Chromium	< 0.51	ug/g		0.15	EPA 7196	EB	10/08/12

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	98.5	%		0.1	SM 2540G	EB	10/05/12

Total Metals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Acid Digestion	Y				SW-846 3050B	CG	10/04/12
Aluminum	23400	ug/g		3.50	SW-846 6010B	CG	10/05/12
Arsenic	< 3.5	ug/g		3.50	SW-846 6010B	CG	10/05/12
Barium	1.71	ug/g		0.175	SW-846 6010B	CG	10/05/12
Beryllium	0.528	ug/g		0.175	SW-846 6010B	CG	10/05/12
Chromium	38.5	ug/g		0.350	SW-846 6010B	CG	10/05/12
Manganese	610.	ug/g		0.175	SW-846 6010B	CG	10/05/12
Nickel	22.4	ug/g		1.75	SW-846 6010B	CG	10/05/12
Lead	< 3.5	ug/g		3.50	SW-846 6010B	CG	10/05/12
Antimony	< 3.5	ug/g		3.50	SW-846 6010B	CG	10/05/12
Vanadium	115.	ug/g		1.75	SW-846 6010B	CG	10/05/12
Zinc	54.1	ug/g		0.350	SW-846 6010B	CG	10/05/12
Silver	0.0398	ug/g		0.018	SW-846 6020A	CG	10/23/12
Cadmium	0.0473	ug/g		0.438	SW-846 6020A	CG	10/23/12
Cobalt	15.9	ug/g		0.175	SW-846 6020A	CG	10/23/12
Copper	107.	ug/g		0.438	SW-846 6020A	CG	10/23/12
Selenium	0.170	ug/g		0.175	SW-846 6020A	CG	10/23/12
Thallium	0.0136	ug/g		0.018	SW-846 6020A	CG	10/23/12
Mercury	< 0.0051	ug/g		0.01	SW-846 7471B	SS	10/09/12

NWTPH-Dx (Soil)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Diesel	< 25	mg/kg		25.	NWTPH-Dx	MO	10/09/12
Heavy Oil	< 50	mg/kg		50.	NWTPH-Dx	MO	10/09/12

Surrogates

ANALYTE	% RECOVERY	LIMITS
Bromofluorobenzene	91.9 %	50.0 - 150.
2-Fluorobiphenyl	97.0 %	50.0 - 150.

NWTPH-Gx and BTEX

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Gasoline in Soil	236.	ug/kg		96.	WDOE NWTPH-Gx	NLN	10/11/12
Benzene	< 5	ug/kg		4.8	EPA 8260	NLN	10/11/12
Toluene	13.	ug/kg		4.8	EPA 8260	NLN	10/11/12
Ethyl Benzene	< 5	ug/kg		4.8	EPA 8260	NLN	10/11/12
m+p-Xylene	< 5	ug/kg		4.8	EPA 8260	NLN	10/11/12
o-Xylene	< 5	ug/kg		4.8	EPA 8260	NLN	10/11/12

Surrogate

ANALYTE	% RECOVERY	LIMITS
Bromofluorobenzene	96.7 %	70.0 - 130.

Volatile Organic Analysis (VOA's)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
1,1,1-Trichloroethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,1,2,2-Tetrachloroethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,1,2-Trichloroethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,1-Dichlorethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,1-Dichloroethylene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,2-Dichloroethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,2-Dichlorethylene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,2-Dichloropropane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
1,4-Dichlorobenzene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
2-Butanone (MEK)	11.6	ug/kg		9.7	SW-846 8260B	NLN	10/05/12
2-Hexanone	< 10	ug/kg		9.7	SW-846 8260B	NLN	10/05/12
4-Methyl-2-Pentanone	< 10	ug/kg		9.7	SW-846 8260B	NLN	10/05/12
Acetone	90.1	ug/kg		19.	SW-846 8260B	NLN	10/05/12
Benzene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Bromodichloromethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Bromoform	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Bromomethane	< 5	ug/kg		4.8	SW-846 8260B	NLN	10/05/12
Carbon Disulfide	2.0	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Carbon Tetrachloride	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Chlorobenzene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Chlorodibromomethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Chloroethane	< 5	ug/kg		4.8	SW-846 8260B	NLN	10/05/12
Chloroform	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Chloromethane	< 5	ug/kg		4.8	SW-846 8260B	NLN	10/05/12
Cis-1,2-Dichloroethene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Cis-1,3-Dichloropropene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Ethyl Benzene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Methylene Chloride	34.6	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Methyl tert-butyl ether	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Styrene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Tetrachloroethylene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Toluene	5.4	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Total Xylenes	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Trans-1,2-Dichloroethene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Trans-1,3-Dichloropropene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Trichloroethylene	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Trichlorofluoromethane	< 1	ug/kg		0.97	SW-846 8260B	NLN	10/05/12
Vinyl Acetate	< 5	ug/kg		4.8	SW-846 8260B	NLN	10/05/12
Vinyl Chloride	< 5	ug/kg		4.8	SW-846 8260B	NLN	10/05/12

VOA Surrogates

ANALYTE	% RECOVERY	LIMITS

VOA Surrogates continued...

ANALYTE	% RECOVERY	LIMITS
D4-1,2,-Dichloroethane	89.4 %	70.0 - 134.
D8-Toluene (Soil)	104. %	72.0 - 121.
4-Bromofluorobenzene S	88.0 %	69.0 - 115.

Semi-Volatiles

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
1,2,4-Trichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
1,2-Dichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
1,3-Dichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
1,4-Dichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4,5-Trichlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4,6-Trichlorophenol	< 24	ug/kg	X	61.	EPA 8270	NLN	10/12/12
2,4-Dichlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4-Dimethylphenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4-Dinitrophenol	< 300	ug/kg		300	EPA 8270	NLN	10/12/12
2,4-Dinitrotoluene	< 50	ug/kg	X	150	EPA 8270	NLN	10/12/12
2,6-Dinitrotoluene	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
2-Chloronaphthalene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2-Chlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2-Methylphenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2-Nitroaniline	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
2-Nitrophenol	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
3,3-Dichlrobenzidine	< 91	ug/kg		91.	EPA 8270	NLN	10/12/12
3-Nitroaniline	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
4,6-Dinitro-2-methylpheno	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
4-Bromophenyl-phenyl ethe	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Chloro-3-methylphenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Chloroaniline	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Chlorophenyl-phenyl eth	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Methylphenol (cresol)	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Nitroaniline	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
4-Nitrophenol	< 300	ug/kg		300	EPA 8270	NLN	10/12/12
Aniline	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Azobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Benzidine	< 1500	ug/kg		1500	EPA 8270	NLN	10/12/12
Benzoic Acid	< 30	ug/kg		30.	EPA 8270	NLN	10/12/12
Benzyl Alcohol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Chloro1methylethyl)	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Chloroethoxy)methan	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Chloroethyl)ether	< 19	ug/kg	X	61.	EPA 8270	NLN	10/12/12
bis(2-Chloroisopropyl)eth	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Ethylhexyl)phthalat	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12

Semi-Volatiles continued...

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Butylbenzylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Carbazole	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Dibenzofuran	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Diethylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Dimethylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Di-n-butylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Hexachlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Hexachlorobutadiene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Hexachlorocyclopentadiene	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
Hexachloroethane	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Isophorone	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Nitrobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
N-Nitrosodimethylamine	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
N-Nitroso-di-n-propylamin	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
N-nitrosodiphenylamine	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Pentachlorophenol	< 41	ug/kg	X	150	EPA 8270	NLN	10/12/12
Phenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12

Polynuclear Aromatic Hydrocarbons (PAH)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
2-Methylnaphthalene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Acenaphthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Acenaphthylene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Anthracene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(a)anthracene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(a)pyrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(b)fluoranthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(g,h,i)perylene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(k)fluoranthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Chrysene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Dibenzo(a,h)anthracene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Di-n-octylphthalate	< 30	ug/kg		30.	EPA 8270	NLN	10/12/12
Fluoranthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Fluorene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Indeno(1,2,3-cd)pyrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Naphthalene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Phenanthrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Pyrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Total cPAHs TEC	< 104				EPA 8270	NLN	10/12/12

Semi-Volatile Surrogates

ANALYTE	% RECOVERY	LIMITS
2-Fluorophenol (Soil)	80.7 %	26.5 - 120.
D6-Phenol (Soil)	49.1 %	23.0 - 135.
D5-Nitrobenzene (Soil)	62.2 %	17.0 - 115.
2-Fluorobiphenyl (Soil)	52.4 %	25.0 - 118.
2,4,6-Tribromophenol S	38.5 %	28.0 - 137.
D14-Terphenyl (Soil)	94.1 %	44.0 - 141.

Organo-chlorine Pesticides

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Alpha BHC	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Lindane	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Heptachlor	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Aldrin	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Beta-BHC	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Delta-BHC	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Heptachlor Epoxide	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Endosulfan I	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
pp-DDE	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Dieldrin	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Endrin	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
pp-DDD	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Endosulfan II	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
pp-DDT	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Endrin Aldehyde	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Endrin Ketone	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Endosulfan Sulfate	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Methoxychlor	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
Toxaphene	< 83.8	ug/kg		83.8	SW-846 8080	MO	10/11/12
Chlordane	< 3.35	ug/kg		3.35	SW-846 8080	MO	10/11/12
gamma-Chlordane	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12
alpha-Chlordane	< 1	ug/kg		1.00	SW-846 8080	MO	10/11/12

PCB's

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
PCB-1016	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12
PCB-1221	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12
PCB-1232	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12
PCB-1242	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12
PCB-1248	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12
PCB-1254	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12
PCB-1260	< 16.8	ug/kg		16.8	SW-846 8081	MO	10/11/12

Surrogates

ANALYTE	% RECOVERY	LIMITS
Tetrachloro-M-xylene	89.0 % Rec	43.3 - 135.
Decachlorobiphenyl	92.0 % Rec	40.1 - 149.

Miscellaneous

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANLST	DATE
Total Dioxin/Furan TEC	0.00950	ng/kg		0.001	EPA 1613	SET	10/17/12

AMTEST Identification Number **12-A014938**
Client Identification **Holcomb Pit 2**
Sampling Date

Conventionals dry weight

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Hexavalent Chromium	< 0.51	ug/g		0.15	EPA 7196	EB	10/08/12

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	98.3	%		0.1	SM 2540G	EB	10/05/12

Total Metals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Acid Digestion	Y				SW-846 3050B	CG	10/04/12
Aluminum	21200	ug/g		0.499	SW-846 6010B	CG	10/05/12
Arsenic	< 0.5	ug/g		0.499	SW-846 6010B	CG	10/05/12
Barium	1.59	ug/g		0.025	SW-846 6010B	CG	10/05/12
Beryllium	0.488	ug/g		0.025	SW-846 6010B	CG	10/05/12
Chromium	33.4	ug/g		0.050	SW-846 6010B	CG	10/05/12
Manganese	526.	ug/g		0.025	SW-846 6010B	CG	10/05/12
Nickel	22.2	ug/g		0.250	SW-846 6010B	CG	10/05/12
Lead	< 0.5	ug/g		0.499	SW-846 6010B	CG	10/05/12
Antimony	< 0.5	ug/g		0.499	SW-846 6010B	CG	10/05/12
Vanadium	108.	ug/g		0.250	SW-846 6010B	CG	10/05/12
Zinc	50.6	ug/g		0.050	SW-846 6010B	CG	10/05/12
Silver	0.0539	ug/g		0.002	SW-846 6020A	CG	10/23/12
Cadmium	0.0646	ug/g		0.062	SW-846 6020A	CG	10/23/12
Cobalt	17.7	ug/g		0.025	SW-846 6020A	CG	10/23/12
Copper	106.	ug/g		0.062	SW-846 6020A	CG	10/23/12
Selenium	0.184	ug/g		0.025	SW-846 6020A	CG	10/23/12
Thallium	0.0160	ug/g		0.002	SW-846 6020A	CG	10/23/12
Mercury	< 0.0051	ug/g		0.01	SW-846 7471B	SS	10/09/12

NWTPH-Dx (Soil)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Diesel	< 25	mg/kg		25.	NWTPH-Dx	MO	10/09/12
Heavy Oil	< 50	mg/kg		50.	NWTPH-Dx	MO	10/09/12

Surrogates

ANALYTE	% RECOVERY	LIMITS
Bromofluorobenzene	108. %	50.0 - 150.
2-Fluorobiphenyl	117. %	50.0 - 150.

NWTPH-Gx and BTEX

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Gasoline in Soil	209.	ug/kg		100	WDOE NWTPH-Gx	NLN	10/11/12
Benzene	< 5	ug/kg		5.0	EPA 8260	NLN	10/11/12
Toluene	11.	ug/kg		5.0	EPA 8260	NLN	10/11/12
Ethyl Benzene	< 5	ug/kg		5.0	EPA 8260	NLN	10/11/12
m+p-Xylene	< 5	ug/kg		5.0	EPA 8260	NLN	10/11/12
o-Xylene	< 5	ug/kg		5.0	EPA 8260	NLN	10/11/12

Surrogate

ANALYTE	% RECOVERY	LIMITS
Bromofluorobenzene	104. %	70.0 - 130.

Volatile Organic Analysis (VOA's)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
1,1,1-Trichloroethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,1,2,2-Tetrachloroethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,1,2-Trichloroethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,1-Dichlorethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,1-Dichloroethylene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,2-Dichloroethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,2-Dichlorethylene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,2-Dichloropropane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
1,4-Dichlorobenzene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
2-Butanone (MEK)	< 10	ug/kg		9.8	SW-846 8260B	NLN	10/05/12
2-Hexanone	< 10	ug/kg		9.8	SW-846 8260B	NLN	10/05/12
4-Methyl-2-Pentanone	< 10	ug/kg		9.8	SW-846 8260B	NLN	10/05/12
Acetone	60.9	ug/kg		20.	SW-846 8260B	NLN	10/05/12
Benzene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Bromodichloromethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Bromoform	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Bromomethane	< 5	ug/kg		4.9	SW-846 8260B	NLN	10/05/12
Carbon Disulfide	1.7	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Carbon Tetrachloride	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Chlorobenzene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Chlorodibromomethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Chloroethane	< 5	ug/kg		4.9	SW-846 8260B	NLN	10/05/12

Volatile Organic Analysis (VOA's) continued...

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Chloroform	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Chloromethane	< 5	ug/kg		4.9	SW-846 8260B	NLN	10/05/12
Cis-1,2-Dichloroethene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Cis-1,3-Dichloropropene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Ethyl Benzene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Methylene Chloride	35.4	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Methyl tert-butyl ether	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Styrene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Tetrachloroethylene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Toluene	4.8	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Total Xylenes	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Trans-1,2-Dichloroethene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Trans-1,3-Dichloropropene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Trichloroethylene	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Trichlorofluoromethane	< 1	ug/kg		0.98	SW-846 8260B	NLN	10/05/12
Vinyl Acetate	< 5	ug/kg		4.9	SW-846 8260B	NLN	10/05/12
Vinyl Chloride	< 5	ug/kg		4.9	SW-846 8260B	NLN	10/05/12

VOA Surrogates

ANALYTE	% RECOVERY	LIMITS
D4-1,2,-Dichloroethane	88.8 %	70.0 - 134.
D8-Toluene (Soil)	98.4 %	72.0 - 121.
4-Bromofluorobenzene S	83.9 %	69.0 - 115.

Semi-Volatiles

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
1,2,4-Trichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
1,2-Dichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
1,3-Dichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
1,4-Dichlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4,5-Trichlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4,6-Trichlorophenol	< 24	ug/kg	X	61.	EPA 8270	NLN	10/12/12
2,4-Dichlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4-Dimethylphenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2,4-Dinitrophenol	< 310	ug/kg		310	EPA 8270	NLN	10/12/12
2,4-Dinitrotoluene	< 50	ug/kg	X	150	EPA 8270	NLN	10/12/12
2,6-Dinitrotoluene	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
2-Chloronaphthalene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2-Chlorophenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2-Methylphenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
2-Nitroaniline	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
2-Nitrophenol	< 150	ug/kg		150	EPA 8270	NLN	10/12/12

Semi-Volatiles continued...

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
3,3-Dichlrobenzidine	< 92	ug/kg		92.	EPA 8270	NLN	10/12/12
3-Nitroaniline	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
4,6-Dinitro-2-methylpheno	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
4-Bromophenyl-phenyl ethe	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Chloro-3-methylphenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Chloroaniline	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Chlorophenyl-phenyl eth	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Methylphenol (cresol)	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
4-Nitroaniline	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
4-Nitrophenol	< 310	ug/kg		310	EPA 8270	NLN	10/12/12
Aniline	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Azobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Benzidine	< 1500	ug/kg		1500	EPA 8270	NLN	10/12/12
Benzoic Acid	< 31	ug/kg		31.	EPA 8270	NLN	10/12/12
Benzyl Alcohol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Chloro1methylethyl)	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Chloroethoxy)methan	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Chloroethyl)ether	< 19	ug/kg	X	61.	EPA 8270	NLN	10/12/12
bis(2-Chloroisopropyl)eth	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
bis(2-Ethylhexyl)phthalat	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Butylbenzylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Carbazole	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Dibenzofuran	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Diethylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Dimethylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Di-n-butylphthalate	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Hexachlorobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Hexachlorobutadiene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Hexachlorocyclopentadiene	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
Hexachloroethane	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Isophorone	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Nitrobenzene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
N-Nitrosodimethylamine	< 150	ug/kg		150	EPA 8270	NLN	10/12/12
N-Nitroso-di-n-propylamin	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
N-nitrosodiphenylamine	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Pentachlorophenol	< 41	ug/kg	X	150	EPA 8270	NLN	10/12/12
Phenol	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12

Polynuclear Aromatic Hydrocarbons (PAH)

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
2-Methylnaphthalene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Acenaphthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Acenaphthylene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Anthracene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(a)anthracene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(a)pyrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(b)fluoranthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(g,h,i)perylene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Benzo(k)fluoranthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Chrysene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Dibenzo(a,h)anthracene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Di-n-octylphthalate	< 31	ug/kg		31.	EPA 8270	NLN	10/12/12
Fluoranthene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Fluorene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Indeno(1,2,3-cd)pyrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Naphthalene	< 61	ug/kg		61.	EPA 8270	NLN	10/12/12
Phenanthrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Pyrene	< 6.1	ug/kg		6.1	EPA 8270	NLN	10/12/12
Total cPAHs TEC	< 104				EPA 8270	NLN	10/12/12

Semi-Volatile Surrogates

ANALYTE	% RECOVERY	LIMITS
2-Fluorophenol (Soil)	96.6 %	26.5 - 120.
D6-Phenol (Soil)	59.7 %	23.0 - 135.
D5-Nitrobenzene (Soil)	76.5 %	17.0 - 115.
2-Fluorobiphenyl (Soil)	65.4 %	25.0 - 118.
2,4,6-Tribromophenol S	42.2 %	28.0 - 137.
D14-Terphenyl (Soil)	88.5 %	44.0 - 141.

Organo-chlorine Pesticides

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Alpha BHC	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Lindane	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Heptachlor	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Aldrin	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Beta-BHC	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Delta-BHC	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Heptachlor Epoxide	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Endosulfan I	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
pp-DDE	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Dieldrin	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Endrin	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
pp-DDD	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Endosulfan II	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
pp-DDT	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Endrin Aldehyde	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Endrin Ketone	< 0.99	ug/kg		0.993	SW-846 8080	MO	10/11/12
Endosulfan Sulfate	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Methoxychlor	< 0.993	ug/kg		0.993	SW-846 8080	MO	10/11/12
Toxaphene	< 82.8	ug/kg		82.8	SW-846 8080	MO	10/11/12
Chlordane	< 3.31	ug/kg		3.31	SW-846 8080	MO	10/11/12
gamma-Chlordane	< 0.99	ug/kg		0.993	SW-846 8080	MO	10/11/12
alpha-Chlordane	< 0.99	ug/kg		0.993	SW-846 8080	MO	10/11/12

PCB's

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
PCB-1016	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12
PCB-1221	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12
PCB-1232	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12
PCB-1242	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12
PCB-1248	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12
PCB-1254	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12
PCB-1260	< 16.6	ug/kg		16.6	SW-846 8081	MO	10/11/12

Surrogates

ANALYTE	% RECOVERY	LIMITS
Tetrachloro-M-xylene	84.0 % Rec	43.3 - 135.
Decachlorobiphenyl	89.0 % Rec	40.1 - 149.

X = See case narrative.

Case Narrative:

The organic parameters that have an "X" qualifier are reported to the instrument detection limit instead of the Practical Quantitation Level.

No further corrective action was taken.

Kathy Fugiel
President

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AMTEST LABORATORIES

Professional Analytical Services

QC Summary for sample numbers: 12-A014937 to 12-A014938

DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	DUP VALUE	RPD
12-A014952	Total Solids	%	95.8	95.8	0.00
12-A015039	Total Solids	%	15.4	15.1	2.0
12-A014938	Hexavalent Chromium	ug/g	0.000	0.000	
12-A015202	Mercury	ug/g	0.671	0.673	0.30

MATRIX SPIKES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
12-A014911	Arsenic	ug/g	< 0.93	45.4	50.0	90.80 %
12-A014911	Arsenic	ug/g	< 0.93	42.0	50.0	84.00 %
12-A014911	Chromium	ug/g	3.56	51.0	50.0	94.88 %
12-A014911	Chromium	ug/g	3.56	47.5	50.0	87.88 %
12-A015202	Mercury	ug/g	0.671	2.75	2.50	83.16 %
12-A014911	Nickel	ug/g	2.08	48.5	50.0	92.84 %
12-A014911	Nickel	ug/g	2.08	45.0	50.0	85.84 %
12-A014911	Lead	ug/g	3.98	50.8	50.0	93.64 %
12-A014911	Lead	ug/g	3.98	46.8	50.0	85.64 %
12-A014911	Zinc	ug/g	157.	1530	1800	76.28 %
12-A014911	Zinc	ug/g	157.	1530	1800	76.28 %
Blank	Lindane	ug/kg	< 0.999	0.032	0.040	80.00 %
Blank	Lindane	ug/kg	< 0.999	0.033	0.040	82.50 %
Blank	Heptachlor	ug/kg	< 0.999	0.036	0.040	90.00 %
Blank	Heptachlor	ug/kg	< 0.999	0.038	0.040	95.00 %
Blank	Aldrin	ug/kg	< 0.999	0.036	0.040	90.00 %
Blank	Aldrin	ug/kg	< 0.999	0.037	0.040	92.50 %
Blank	Dieldrin	ug/kg	< 0.999	0.033	0.040	82.50 %
Blank	Dieldrin	ug/kg	< 0.999	0.034	0.040	85.00 %
Blank	Endrin	ug/kg	< 0.999	0.040	0.040	100.00 %
Blank	Endrin	ug/kg	< 0.999	0.043	0.040	107.50 %
Blank	pp-DDT	ug/kg	< 0.999	0.047	0.040	117.50 %
Blank	pp-DDT	ug/kg	< 0.999	0.055	0.040	137.50 %
Blank	PCB-1260	ug/kg	< 16.6	0.21	0.25	84.00 %
Blank	PCB-1260	ug/kg	< 16.6	0.20	0.25	80.00 %
Blank	1,1-Dichloroethylene	ug/kg	< 1	12.1	11.9	101.68 %
Blank	Benzene	ug/kg	< 1	10.6	11.9	89.08 %
Blank	Trichloroethylene	ug/kg	< 1	12.0	11.9	100.84 %
Blank	Toluene	ug/kg	< 1	12.2	11.9	102.52 %
Blank	Chlorobenzene	ug/kg	< 1	9.7	11.9	81.51 %
Blank	Gasoline in Soil	ug/kg	< 100	263.	256.	102.73 %
Blank	Phenol	ug/kg	< 2	44.	40.	110.00 %
Blank	Phenol	ug/kg	< 2	46.	40.	115.00 %

MATRIX SPIKES continued....

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
Blank	2-Chlorophenol	ug/kg	< 2	37.	40.	92.50 %
Blank	2-Chlorophenol	ug/kg	< 2	41.	40.	102.50 %
Blank	1,4-Dichlorobenzene	ug/kg	< 2	34.	40.	85.00 %
Blank	1,4-Dichlorobenzene	ug/kg	< 2	36.	40.	90.00 %
Blank	N-Nitroso-di-n-propylamin	ug/kg	< 2	36.	40.	90.00 %
Blank	N-Nitroso-di-n-propylamin	ug/kg	< 2	38.	40.	95.00 %
Blank	1,2,4-Trichlorobenzene	ug/kg	< 2	35.	40.	87.50 %
Blank	1,2,4-Trichlorobenzene	ug/kg	< 2	39.	40.	97.50 %
Blank	4-Chloro-3-methylphenol	ug/kg	< 2	42.	40.	105.00 %
Blank	4-Chloro-3-methylphenol	ug/kg	< 2	43.	40.	107.50 %
Blank	Acenaphthene	ug/kg	< 0.2	38.	40.	95.00 %
Blank	Acenaphthene	ug/kg	< 0.2	41.	40.	102.50 %
Blank	4-Nitrophenol	ug/kg	< 10	33.	40.	82.50 %
Blank	4-Nitrophenol	ug/kg	< 10	26.	40.	65.00 %
Blank	2,4-Dinitrotoluene	ug/kg	< 5	49.	40.	122.50 %
Blank	2,4-Dinitrotoluene	ug/kg	< 5	45.	40.	112.50 %
Blank	Pentachlorophenol	ug/kg	< 5	52.	40.	130.00 %
Blank	Pentachlorophenol	ug/kg	< 5	50.	40.	125.00 %

MATRIX SPIKE DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE	RPD
Spike	Arsenic	ug/g	45.4	42.0	7.8
Spike	Chromium	ug/g	51.0	47.5	7.1
Spike	Nickel	ug/g	48.5	45.0	7.5
Spike	Lead	ug/g	50.8	46.8	8.2
Spike	Zinc	ug/g	1530	1530	0.00
Spike	Lindane	ug/kg	0.032	0.033	3.1
Spike	Heptachlor	ug/kg	0.036	0.038	5.4
Spike	Aldrin	ug/kg	0.036	0.037	2.7
Spike	Dieldrin	ug/kg	0.033	0.034	3.0
Spike	Endrin	ug/kg	0.040	0.043	7.2
Spike	pp-DDT	ug/kg	0.047	0.055	16.
Spike	PCB-1260	ug/kg	0.21	0.20	4.9
Spike	Phenol	ug/kg	44.	46.	4.4
Spike	2-Chlorophenol	ug/kg	37.	41.	10.
Spike	1,4-Dichlorobenzene	ug/kg	34.	36.	5.7
Spike	N-Nitroso-di-n-propylamin	ug/kg	36.	38.	5.4
Spike	1,2,4-Trichlorobenzene	ug/kg	35.	39.	11.
Spike	4-Chloro-3-methylphenol	ug/kg	42.	43.	2.4
Spike	Acenaphthene	ug/kg	38.	41.	7.6
Spike	4-Nitrophenol	ug/kg	33.	26.	24.
Spike	2,4-Dinitrotoluene	ug/kg	49.	45.	8.5
Spike	Pentachlorophenol	ug/kg	52.	50.	3.9

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Aluminum	ug/g	10700	12100	113. %
Arsenic	ug/g	274.	266.	97.1 %
Barium	ug/g	403.	396.	98.3 %
Beryllium	ug/g	240.	236.	98.3 %
Chromium	ug/g	245.	229.	93.5 %
Hexavalent Chromium	ug/g	0.40	0.37	92.5 %
Mercury	ug/g	2.00	2.04	102. %
Mercury	ug/g	2.41	2.48	103. %
Manganese	ug/g	151.	140.	92.7 %
Nickel	ug/g	171.	162.	94.7 %
Lead	ug/g	175.	159.	90.9 %
Antimony	ug/g	120.	62.3	51.9 %
Vanadium	ug/g	269.	237.	88.1 %
Zinc	ug/g	297.	262.	88.2 %
Gasoline in Soil	ug/kg	236.	207.	87.7 %
Diesel	mg/kg	400	410	102. %
Heavy Oil	mg/kg	400	410	102. %
Silver	ug/g	25.0	23.0	92.0 %
Cobalt	ug/g	25.0	23.0	92.0 %
Copper	ug/g	25.0	23.0	92.0 %

BLANKS

ANALYTE	UNITS	RESULT
Total Solids	%	< 0.1
Total Solids	%	< 0.1
Aluminum	ug/g	< 0.5
Arsenic	ug/g	< 0.5
Barium	ug/g	< 0.025
Beryllium	ug/g	< 0.025
Chromium	ug/g	< 0.05
Hexavalent Chromium	ug/g	0.000
Mercury	ug/g	< 0.005
Mercury	ug/g	< 0.005
Manganese	ug/g	< 0.025
Nickel	ug/g	< 0.25
Lead	ug/g	< 0.5
Antimony	ug/g	< 0.5
Vanadium	ug/g	< 0.25
Zinc	ug/g	< 0.05
Benzene	ug/kg	< 5
Toluene	ug/kg	< 5
Ethyl Benzene	ug/kg	< 5
m+p-Xylene	ug/kg	< 5
o-Xylene	ug/kg	< 5

BLANKS continued....

ANALYTE	UNITS	RESULT
Alpha BHC	ug/kg	< 0.999
Lindane	ug/kg	< 0.999
Heptachlor	ug/kg	< 0.999
Aldrin	ug/kg	< 0.999
Beta-BHC	ug/kg	< 0.999
Delta-BHC	ug/kg	< 0.999
Heptachlor Epoxide	ug/kg	< 0.999
Endosulfan I	ug/kg	< 0.999
pp-DDE	ug/kg	< 0.999
Dieldrin	ug/kg	< 0.999
Endrin	ug/kg	< 0.999
pp-DDD	ug/kg	< 0.999
Endosulfan II	ug/kg	< 0.999
pp-DDT	ug/kg	< 0.999
Endrin Aldehyde	ug/kg	< 0.999
Endosulfan Sulfate	ug/kg	< 0.999
Methoxychlor	ug/kg	< 0.999
Toxaphene	ug/kg	< 83.2
Chlordane	ug/kg	< 3.33
PCB-1016	ug/kg	< 16.6
PCB-1221	ug/kg	< 16.6
PCB-1232	ug/kg	< 16.6
PCB-1242	ug/kg	< 16.6
PCB-1248	ug/kg	< 16.6
PCB-1254	ug/kg	< 16.6
PCB-1260	ug/kg	< 16.6
Tetrachloro-M-xylene	% Rec	75.0
Decachlorobiphenyl	% Rec	88.0
Chloromethane	ug/kg	< 5
Vinyl Chloride	ug/kg	< 5
Bromomethane	ug/kg	< 5
Chloroethane	ug/kg	< 5
Trichlorofluoromethane	ug/kg	< 1
1,1-Dichloroethylene	ug/kg	< 1
Acetone	ug/kg	< 20
Carbon Disulfide	ug/kg	< 1
Methylene Chloride	ug/kg	< 1
1,2-Dichlorethylene	ug/kg	< 1
1,1-Dichlorethane	ug/kg	< 1
Vinyl Acetate	ug/kg	< 5
2-Butanone (MEK)	ug/kg	< 10

BLANKS continued....

ANALYTE	UNITS	RESULT
Chloroform	ug/kg	< 1
1,1,1-Trichloroethane	ug/kg	< 1
Carbon Tetrachloride	ug/kg	< 1
Benzene	ug/kg	< 1
1,2-Dichloroethane	ug/kg	< 1
Trichloroethylene	ug/kg	< 1
Bromodichloromethane	ug/kg	< 1
1,2-Dichloropropane	ug/kg	< 1
4-Methyl-2-Pentanone	ug/kg	< 10
Toluene	ug/kg	< 1
Cis-1,3-Dichloropropene	ug/kg	< 1
1,1,2-Trichloroethane	ug/kg	< 1
Tetrachloroethylene	ug/kg	< 1
2-Hexanone	ug/kg	< 10
Chlorodibromomethane	ug/kg	< 1
Chlorobenzene	ug/kg	< 1
Ethyl Benzene	ug/kg	< 1
Total Xylenes	ug/kg	< 1
Styrene	ug/kg	< 1
Bromoform	ug/kg	< 1
1,1,2,2-Tetrachloroethane	ug/kg	< 1
Trans-1,3-Dichloropropene	ug/kg	< 1
1,4-Dichlorobenzene	ug/kg	< 1
D4-1,2,-Dichloroethane	%	92.6
D8-Toluene (Soil)	%	109.
4-Bromofluorobenzene S	%	86.1
Gasoline in Soil	ug/kg	< 100
Bromofluorobenzene	%	108.
Diesel	mg/kg	< 25
Heavy Oil	mg/kg	< 50
Bromofluorobenzene	%	85.7
2-Fluorobiphenyl	%	88.0
N-Nitrosodimethylamine	ug/kg	< 5
Aniline	ug/kg	< 2
Phenol	ug/kg	< 2
bis(2-Chloroethyl)ether	ug/kg	< 2
2-Chlorophenol	ug/kg	< 2
1,3-Dichlorobenzene	ug/kg	< 2
1,4-Dichlorobenzene	ug/kg	< 2
Benzyl Alcohol	ug/kg	< 2
1,2-Dichlorobenzene	ug/kg	< 2

BLANKS continued....

ANALYTE	UNITS	RESULT
2-Methylphenol	ug/kg	< 2
bis(2-Chloroisopropyl)eth	ug/kg	< 2
4-Methylphenol (cresol)	ug/kg	< 2
N-Nitroso-di-n-propylamin	ug/kg	< 2
Hexachloroethane	ug/kg	< 2
Nitrobenzene	ug/kg	< 2
Isophorone	ug/kg	< 2
2-Nitrophenol	ug/kg	< 5
2,4-Dimethylphenol	ug/kg	< 2
Benzoic Acid	ug/kg	< 1
bis(2-Chloroethoxy)methan	ug/kg	< 2
2,4-Dichlorophenol	ug/kg	< 2
1,2,4-Trichlorobenzene	ug/kg	< 2
Naphthalene	ug/kg	< 2
4-Chloroaniline	ug/kg	< 2
Hexachlorobutadiene	ug/kg	< 2
4-Chloro-3-methylphenol	ug/kg	< 2
2-Methylnaphthalene	ug/kg	< 0.2
Hexachlorocyclopentadiene	ug/kg	< 5
2,4,6-Trichlorophenol	ug/kg	< 2
2,4,5-Trichlorophenol	ug/kg	< 2
2-Chloronaphthalene	ug/kg	< 2
2-Nitroaniline	ug/kg	< 5
Dimethylphthalate	ug/kg	< 2
Acenaphthylene	ug/kg	< 0.2
2,6-Dinitrotoluene	ug/kg	< 5
3-Nitroaniline	ug/kg	< 5
Acenaphthene	ug/kg	< 0.2
2,4-Dinitrophenol	ug/kg	< 10
4-Nitrophenol	ug/kg	< 10
Dibenzofuran	ug/kg	< 2
2,4-Dinitrotoluene	ug/kg	< 5
Diethylphthalate	ug/kg	< 2
4-Chlorophenyl-phenyl eth	ug/kg	< 2
Fluorene	ug/kg	< 0.2
4-Nitroaniline	ug/kg	< 5
4,6-Dinitro-2-methylpheno	ug/kg	< 5
N-nitrosodiphenylamine	ug/kg	< 2
Azobenzene	ug/kg	< 2
4-Bromophenyl-phenyl ethe	ug/kg	< 2
Hexachlorobenzene	ug/kg	< 2

BLANKS continued....

ANALYTE	UNITS	RESULT
Pentachlorophenol	ug/kg	< 5
Phenanthrene	ug/kg	< 0.2
Anthracene	ug/kg	< 0.2
Carbazole	ug/kg	< 2
Di-n-butylphthalate	ug/kg	< 2
Fluoranthene	ug/kg	< 0.2
Benzidine	ug/kg	< 50
Pyrene	ug/kg	< 0.2
Butylbenzylphthalate	ug/kg	< 2
3,3-Dichlrobenzidine	ug/kg	< 3
Benzo(a)anthracene	ug/kg	< 0.2
Chrysene	ug/kg	< 0.2
bis(2-Ethylhexyl)phthalat	ug/kg	< 2
Di-n-octylphthalate	ug/kg	< 1
Benzo(b)fluoranthene	ug/kg	< 0.2
Benzo(k)fluoranthene	ug/kg	< 0.2
Benzo(a)pyrene	ug/kg	< 0.2
Indeno(1,2,3-cd)pyrene	ug/kg	< 0.2
Dibenzo(a,h)anthracene	ug/kg	< 0.2
Benzo(g,h,i)perylene	ug/kg	< 0.2
2-Fluorophenol (Soil)	%	60.5
D6-Phenol (Soil)	%	56.5
D5-Nitrobenzene (Soil)	%	53.8
2-Fluorobiphenyl (Soil)	%	49.4
2,4,6-Tribromophenol S	%	34.7
D14-Terphenyl (Soil)	%	87.7
Silver	ug/g	< 0.00005
Cobalt	ug/g	< 0.0005
Copper	ug/g	0.00148

AMTEST LABORATORIES

AmTest Chain of Custody Record

13600 NE 126th PL, Suite C, Kirkland, WA 98034
Ph (425) 885-1664 Fx (425) 820-0245
www.amtestlab.com

Chain of Custody No. 17099

Client Name & Address:	Invoice To:
IMCO GENERAL CONSTRUCTION	IMCO
Contact Person: TIM YEDINAK	Invoice Contact: SHANNON
Phone No: 360 393 1877	PO Number: 3217
Fax No:	Invoice Ph/Fax:
E-mail: TYEDINAK@IMCOCONSTRUCTION.COM	Invoice E-mail:
Report Delivery: (Choose all that apply) Mail / Fax / (Email) / Posted Online	Data posted to online account: YES / NO Web Login ID:

Special Instructions: EMAILED TO KATHY
SOILS TEST FOR CONTAMINATION PER SPEC.

Requested TAT: **(Rush must be pre-approved by lab)**
(Standard) RUSH (5 Day / 3 Day / 48 HR / 24 HR)

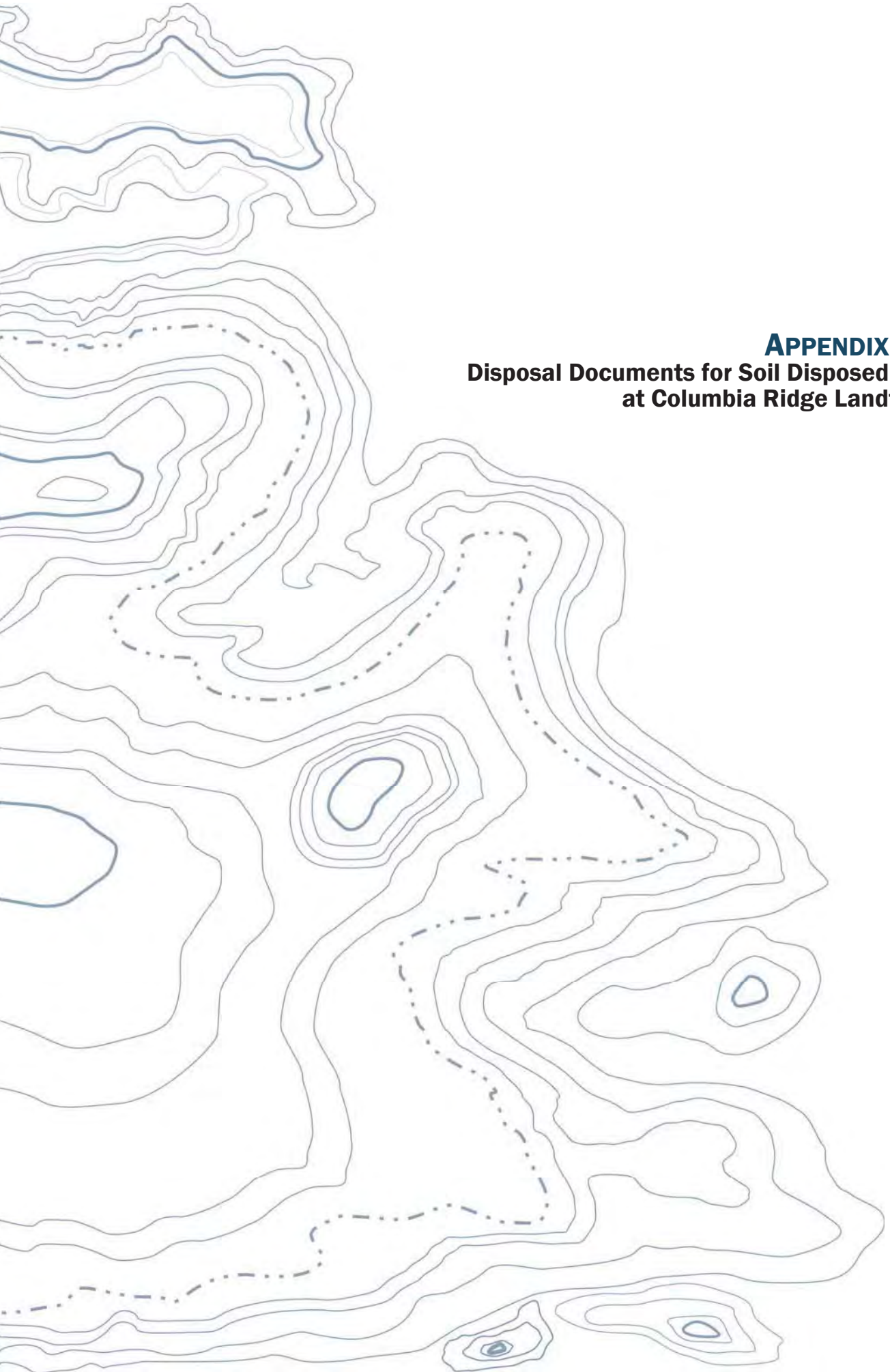
Temperature upon Receipt:

Project Name: PORT ANGELES PHASE I CSO
Project Number: 3217

AmTest ID	Client ID (35 characters max)	Date Sampled	Time Sampled	Matrix	No. of containers	Analysis Requested	QA/QC
14937	HOLCOMB PIT 1						
14938	HOLCOMB PIT 2						

Collected/Relinquished By:	Date	Time	Received By:	Date	Time
TIM YEDINAK	9/28	5:15		10/1/12	9:00
Relinquished By:	Date	Time	Received By:	Date	Time
Relinquished By:	Date	Time	Received By:	Date	Time

COMMENTS:



APPENDIX B
Disposal Documents for Soil Disposed of at Columbia Ridge Landfill

Customer Summary Report (legal)
Criteria: 11/01/2012 12:00 AMto11/14/2012 11:59 PM
Business Unit Name: Columbia Ridge(USA)
Customer Name: GEO ENGINEERS(GEO ENGINEERS)
Profile: 102601WA

Ticket Date	Ticket ID	Cust Code	Generator	Truck	Tons	Total
11/13/2012	113075	549	OR-RAYONIER INC	15020	17.73	$3163.46
Cust. Tot.	1				17.73	$3163.46

OLYMPIC VIEW TRANSFER STATION

OLYMPIC VIEW TRANSFER STATION BILL OF LADING/WEIGH TICKET

CS-2

15020

Date: 11/9/12

Generator Name & Address:
RAYONIER INC
700 NORTH ENNIS STREET
PORT ANGELES, WA

To: GEO ENGINEERS
profile 102601 WA
Via WM Sales

G- 75900
T- 40440
35460
N

17.73 tons

Billing: ROB LEET

Contact Person: (206) 239-3230
Telephone #: (206) 728-2732
360 460-2707
DALE

TRK# R54

Signature:

Acknowledgement of Loading
Dale Stamper
Name (Please Print)
Dale Stamper
Signature

Brueh + Brueh
Company
11-9-12
Date

Deliver To:
Olympic View Transfer Station
9300 SW Barney White Road
Port Orchard, WA 98367
Tel# (360) 674-2297
Monday-Friday 8:00am-5:00pm

Disposal Facility:
Columbia Ridge Landfill & Recycling Facility
18177 Cedar Springs Lane
Arlington, Oregon 97812
Tel# (541)454-2030

Transporter Name:
R TRANSPORT INC
Truck #: R54
Container#: CWMU 8518

Waste Profile#: 102601 WA
Waste Type: CS-2/PCS
Expiration Date: 10/12/13

Jesse BURT
Driver's name (Please Print)

Driver's Signature

11-9-12
Date

8518 Dropped on 9/12/12
Rental = 61 days

Customer Summary Report (legal)
Criteria: 11/15/2012 12:00 AMto11/30/2012 11:59 PM
Business Unit Name: Columbia Ridge(USA)
Customer Name: GEO ENGINEERS(GEO ENGINEERS)
Profile: 102601WA

Ticket Date	Ticket ID	Cust Code	Generator	Truck	Tons	Total
11/16/2012	113459	549	OR-RAYONIER INC	15997	30.58	$1614.46
11/16/2012	113460	549	OR-RAYONIER INC	15998	11.85	$2801.22
11/16/2012	113461	549	OR-RAYONIER INC	20426	25.31	$1336.22
11/16/2012	113462	549	OR-RAYONIER INC	20460	24.22	$1278.69
Cust. Tot.	4				91.96	$7030.59

OLYMPIC VIEW TRANSFER STATION
BILL OF LADING/WEIGH TICKET

OLYMPIC VIEW TRANSFER STATION

15997

Generator Name & Address:
RAYONIER INC
700 NORTH ENNIS STREET
PORT ANGELES, WA

052

Date: 11/12/12

To: Geo Engineers/VIA WM Sales
102601 WA

Billing: Geo Engineers via WM Sales

Contact Person: Rob Leet

Telephone # (206) 728-2732

G- 102740
I- 41580
N- 411160

30.58

TRK # Bruch & Bruch Signature: Dave Benoff

Acknowledgement of Loading

DAVID BENOFF
Name (Please Print)

Dave Benoff
Signature

Bruch & Bruch
Company

11-12-12
Date

Deliver To:
Olympic View Transfer Station
9300 SW Barney White Road
Port Orchard, WA 98367
Tel# (360) 674-2297
Monday-Friday 8:00am-5:00pm

Disposal Facility:
Columbia Ridge Landfill & Recycling Facility
18177 Cedar Springs Lane
Arlington, Oregon 97812
Tel# (541)454-2030

Transporter Name: BRUCH + BRUCH

Truck #: 8

Container #:

Waste Profile#: 102601 WA

Waste Type: CS-2/PCS

Expiration Date: 10-13-2013

DAVID BENOFF
Driver's name (Please Print)

Dave Benoff
Driver's Signature

11-12-12
Date

Customer hauled

11/08/2012 15:20 5414543264

11/08/2012 15:02 FAX 5414543312
NOV-08-2012 15:52 From:574-2402

OLYMPIC VIEW TRANSFER STATION

OLYMPIC VIEW TRANSFER STATION
BILL OF LADING/WEIGH TICKET

CSZ 15998

Date: 11/12/12

Generator Name & Address:
RAYONIER INC
700 NORTH ENNIS STREE
PORT ANGELES, WA

To: Geo Engineers VIA WM Sales
102601 wa

Billing: Geo Engineers V.I.a. WM Sales

Contact Person: Rob Leet

Telephone #: (206) 728-2732
(206) 239-3231

G- 66300
T- 42600
23700
N

11.85 TONS

TRK# R56

Signature:

Acknowledgement of Loading

George E. McDonald
Name (Please Print)

B&B
Company

George E McDonald
Signature

11-12-12
Date

Deliver To:
Olympic View Transfer Station
9300 SW Barney White Road
Port Orchard, WA 98367
Tel# (360) 674-2297
Monday-Friday 8:00am-5:00pm

Disposal Facility:
Columbia Ridge Landfill & Recycling Facility
18177 Cedar Springs Lane
Arlington, Oregon 97812
Tel# (541)454-2030

Transporter Name:
R TRANSPORT INC

Truck #: R 56

Container#: CWMU 8525

Waste Profile#: 102601 WA

Waste Type: CS-2/PCS

Expiration Date: 10/12/13

Curtis
Driver's Name (Please Print)

Driver's Signature

11-12-12
Date

8525 Dropped on 9/17/12
Rent - 5 to dump

OLYMPIC VIEW TRANSFER STATION
BILL OF LADING/WEIGH TICKET

OLYMPIC VIEW TRANSFER STATION

20426 Date: 11/12/12

Generator Name & Address:
RAYONIER INC
700 NORTH ENNIS STREET
PORT ANGELES, WA

To: Geo Engineers
via WM Sales
profile# 102601 WA

CS-2

G-91920 25.31
T-41300
N 50620

Billing Geo Engineers
via WM Sales

Contact Person Rob Leet

Telephone # (206) 728-2732

TRK BENCH8 TONS

Dan Bench
Signature:

Acknowledgement of Loading:

DAVID BENOFF
Name (Please Print)

Dan Bench
Signature

Bench & Bench
Company

11/12/12
Date

Deliver To:
Olympic View Transfer Station
9300 SW Barney White Road
Port Orchard, WA 98367
Tel# (360) 674-2297
Monday-Friday 8:00am-5:00pm

Disposal Facility:
Columbia Ridge Landfill & Recycling Facility
18177 Cedar Springs Lane
Arlington, Oregon 97812
Tel# (541)454-2030

Transporter Name:
Bench + Bench

Truck # B

Container#

Waste Profile#: 102601 WA

Waste Type: CS-2/PCS

Expiration Date: 10-12-13

DAVID BENOFF
Driver's name (Please Print)

Dan Bench
Driver's Signature

11/12/12
Date

Customer hauled

2009
OLYMPIC VIEW TRANSFER STATION
BILL OF LADING/WEIGH TICKET

OLYMPIC VIEW TRANSFER STATION

20460

Date: 11/12/12

Generator Name & Address:
Rayonier Inc.
700 North Ennis Street
Port Angeles, WA 98362

CS-2

To: GeoEngineers via WM Sales

Profile #102601WA

G-89820
T-41380
N 48440

24.22 TONS

TRK BRUCH

Signature: James Waugaman

Billing: GeoEngineers via WM Sales

Contact Person: Rob Leet

Telephone #: (206)239-3230

Acknowledgement of Loading

James Waugaman
Name (Please Print)

BRUCH & BRUCH
Company

James Waugaman
Signature

11/12/12
Date

Deliver To:
Olympic View Transfer Station
9300 SW Barney White Road
Port Orchard, WA 98367
Tel# (360) 674-2297
Monday-Friday 8:00am-5:00pm

Disposal Facility:
Columbia Ridge Landfill & Recycling Facility
18177 Cedar Springs Lane
Arlington, Oregon 97812
Tel# (541)454-2030

Transporter Name: BRUCH & BRUCH

Truck #: 1

Container#:

Waste Profile#: 102601WA

Waste Type: CS-2/PCS

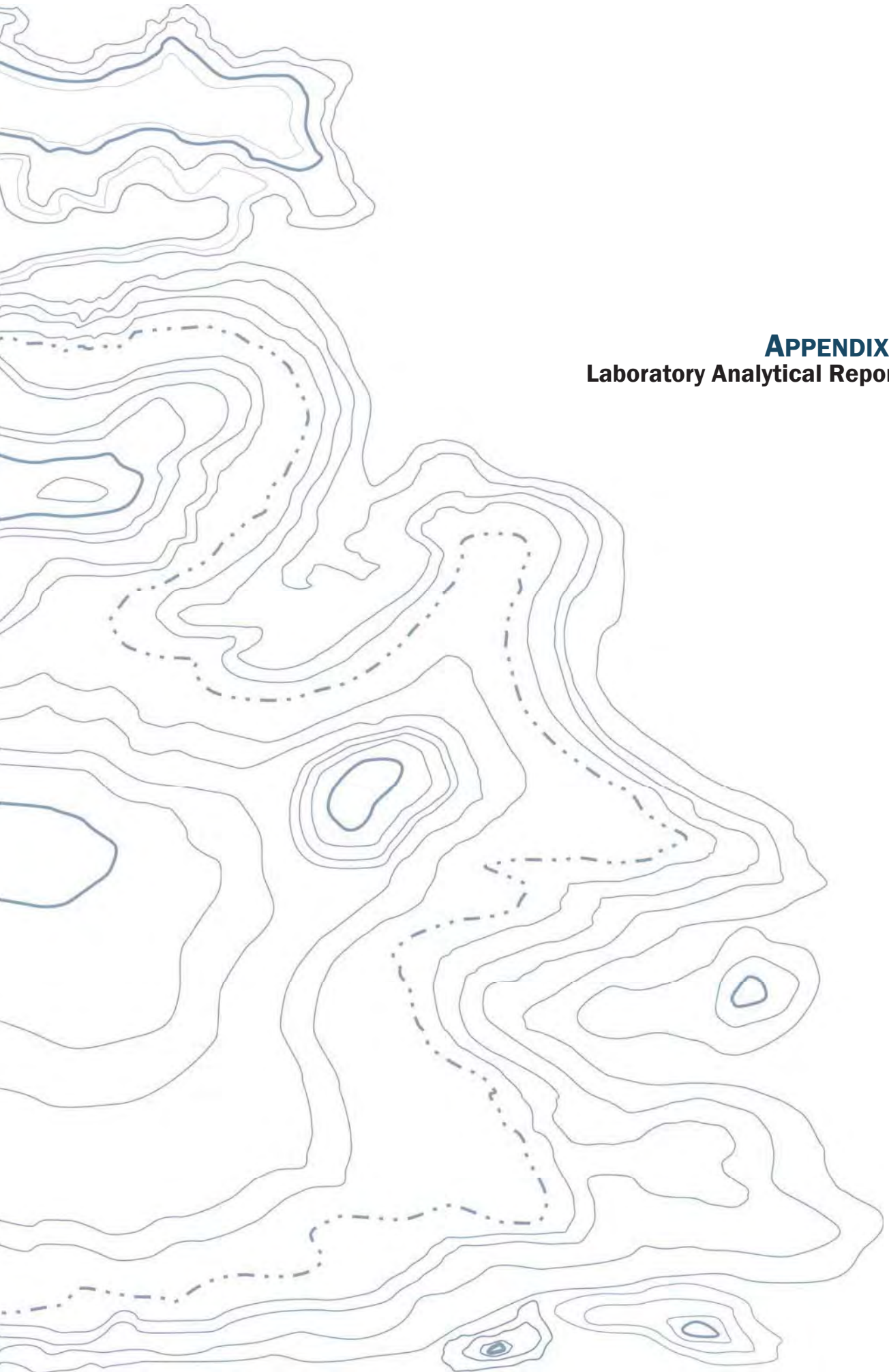
Expiration Date: 10/12/2013

James Waugaman
Driver's name (Please Print)

James Waugaman
Driver's Signature

11/12/12
Date

Customer Handed



APPENDIX C
Laboratory Analytical Reports

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

October 30, 2012

Rob Leet
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 0137-015-03 T0510
Laboratory Reference No. 1210-187

Dear Rob:

Enclosed are the analytical results and associated quality control data for samples submitted on October 22, 2012.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: October 30, 2012
Samples Submitted: October 22, 2012
Laboratory Reference: 1210-187
Project: 0137-015-03 T0510

Case Narrative

Samples were collected on October 16 and 17, 2012 and received by the laboratory on October 22, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: October 30, 2012
Samples Submitted: October 22, 2012
Laboratory Reference: 1210-187
Project: 0137-015-03 T0510

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
EX1-1-7.75	10-187-01	Soil	10-16-12	10-22-12	
EX1-2-7.75	10-187-02	Soil	10-16-12	10-22-12	
EX1-3-7.75	10-187-03	Soil	10-16-12	10-22-12	
EX1-4-8.0	10-187-04	Soil	10-16-12	10-22-12	
EX1-5-7.75	10-187-05	Soil	10-17-12	10-22-12	

Date of Report: October 30, 2012
Samples Submitted: October 22, 2012
Laboratory Reference: 1210-187
Project: 0137-015-03 T0510

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**EX1-1-7.75**					
Laboratory ID:	10-187-01					
Diesel Range Organics	**ND**	27	NWTPH-Dx	10-25-12	10-26-12	
Lube Oil	**120**	55	NWTPH-Dx	10-25-12	10-26-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*110*	*50-150*				
Client ID:	**EX1-2-7.75**					
Laboratory ID:	10-187-02					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-25-12	10-25-12	U1
Lube Oil	**130**	55	NWTPH-Dx	10-25-12	10-25-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*139*	*50-150*				
Client ID:	**EX1-3-7.75**					
Laboratory ID:	10-187-03					
Diesel Range Organics	**ND**	28	NWTPH-Dx	10-25-12	10-25-12	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	10-25-12	10-25-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*114*	*50-150*				
Client ID:	**EX1-4-8.0**					
Laboratory ID:	10-187-04					
Diesel Range Organics	**ND**	32	NWTPH-Dx	10-25-12	10-25-12	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	10-25-12	10-25-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				
Client ID:	**EX1-5-7.75**					
Laboratory ID:	10-187-05					
Diesel Range Organics	**1100**	170	NWTPH-Dx	10-25-12	10-26-12	N
Lube Oil Range Organics	**2500**	330	NWTPH-Dx	10-25-12	10-26-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*121*	*50-150*				

Date of Report: October 30, 2012
Samples Submitted: October 22, 2012
Laboratory Reference: 1210-187
Project: 0137-015-03 T0510

TOTAL LEAD
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	10-187-01					
Client ID:	**EX1-1-7.75**					
Lead	**10**	5.5	6010C	10-22-12	10-22-12	
Lab ID:	10-187-02					
Client ID:	**EX1-2-7.75**					
Lead	**22**	5.5	6010C	10-22-12	10-22-12	
Lab ID:	10-187-03					
Client ID:	**EX1-3-7.75**					
Lead	**ND**	5.7	6010C	10-22-12	10-22-12	
Lab ID:	10-187-04					
Client ID:	**EX1-4-8.0**					
Lead	**6.9**	6.3	6010C	10-22-12	10-22-12	
Lab ID:	10-187-05					
Client ID:	**EX1-5-7.75**					
Lead	**11**	6.6	6010C	10-22-12	10-22-12	

Date of Report: October 30, 2012
Samples Submitted: October 22, 2012
Laboratory Reference: 1210-187
Project: 0137-015-03 T0510

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1025S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	10-25-12	10-25-12	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	10-25-12	10-25-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*131*	*50-150*				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	10-183-01						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	U1
Lube Oil	**792**	**745**			6	NA	
Surrogate:							
o-Terphenyl			*132* *126*	*50-150*			

Date of Report: October 30, 2012
Samples Submitted: October 22, 2012
Laboratory Reference: 1210-187
Project: 0137-015-03 T0510

TOTAL LEAD
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-22-12
Date Analyzed:	10-22-12
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1022SM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	5.0

Date of Report: October 30, 2012
Samples Submitted: October 22, 2012
Laboratory Reference: 1210-187
Project: 0137-015-03 T0510

TOTAL LEAD
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 10-22-12
Date Analyzed: 10-22-12

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-143-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	5.0	

Date of Report: October 30, 2012
Samples Submitted: October 22, 2012
Laboratory Reference: 1210-187
Project: 0137-015-03 T0510

TOTAL LEAD
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 10-22-12
Date Analyzed: 10-22-12

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-143-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**225**	90	**225**	90	0	

Date of Report: October 30, 2012
Samples Submitted: October 22, 2012
Laboratory Reference: 1210-187
Project: 0137-015-03 T0510

% MOISTURE

Date Analyzed: 10-25-12

Client ID	Lab ID	% Moisture
EX1-1-7.75	10-187-01	9
EX1-2-7.75	10-187-02	10
EX1-3-7.75	10-187-03	12
EX1-4-8.0	10-187-04	21
EX1-5-7.75	10-187-05	24

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEI
Project Number: 0137-015-03 TASK 10
Project Name: PA Mill
Project Manager: Rob Lee
Sampled by: TML

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Days
- ☐ 3 Days
- ☒ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

Laboratory Number: 10-187

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	No. of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664	Lead				% Moisture
1	Ex 1-1-7.75	10/16/12	1425	S	1				X													X				
2	Ex 1-2-7.75	10/16/12	1430	S	1				X													X				
3	Ex 1-3-7.75	10/16/12	1435	S	1				X													X				
4	Ex 1-4-8.0	10/16/12	1440	S	1				X													X				
5	Ex 1-5-7.75	10/17/12	1730	S	1				X													X				

	Signature	Company	Date	Time
Relinquished	[signature]	GEI	10/22/12	1045
Received	[signature]	OSE	10/22/12	1045
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

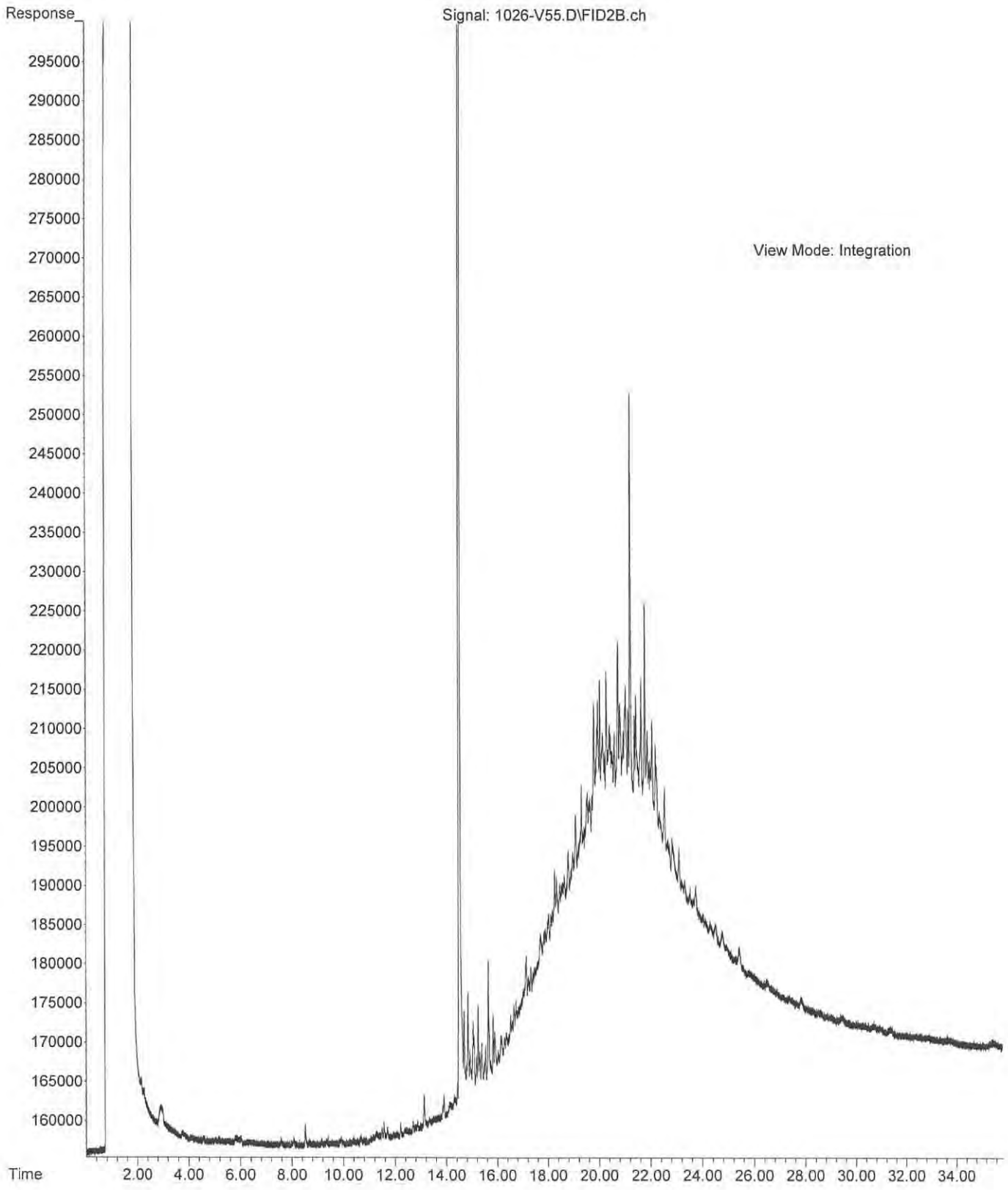
Reviewed/Date

Reviewed/Date

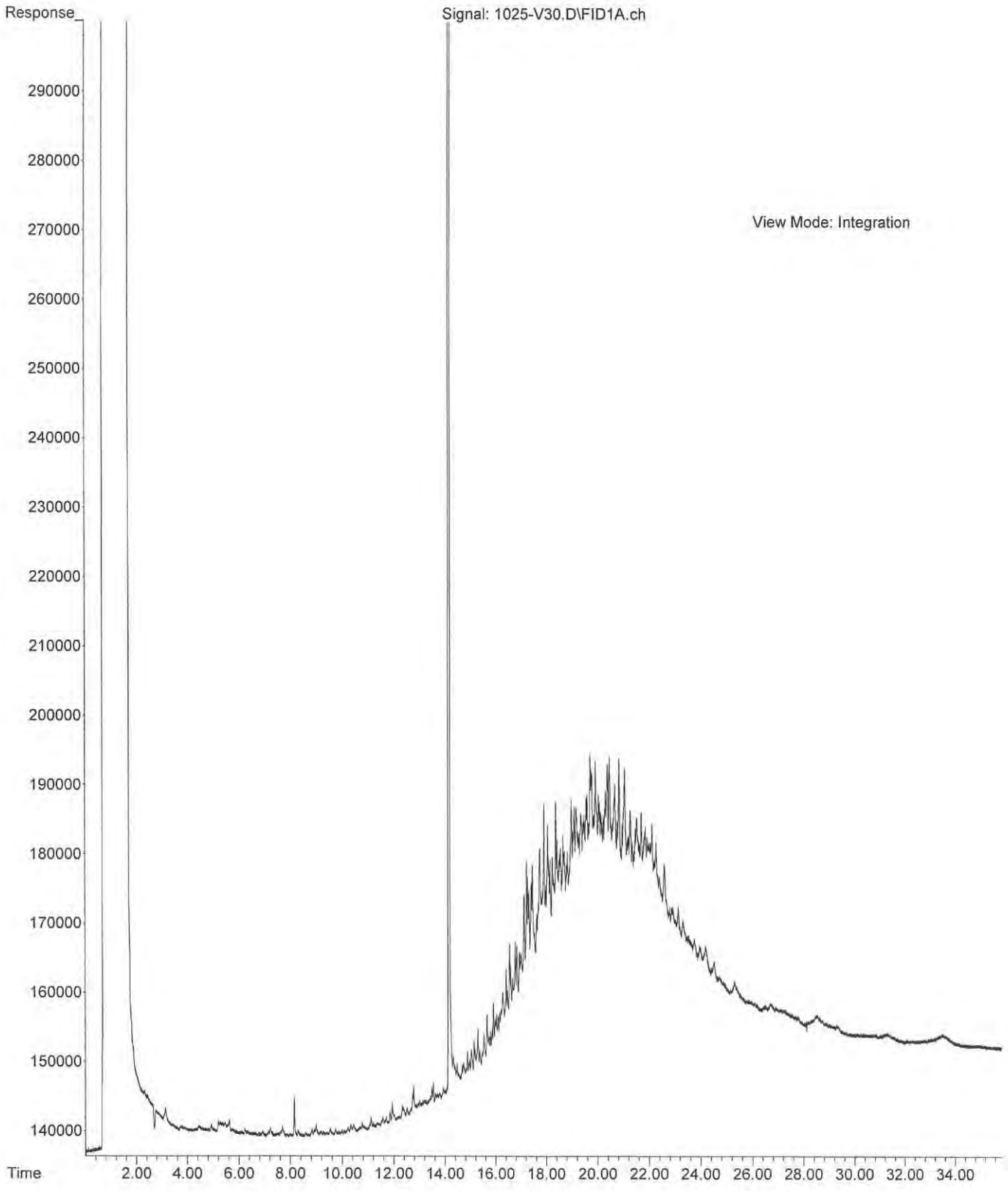
Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

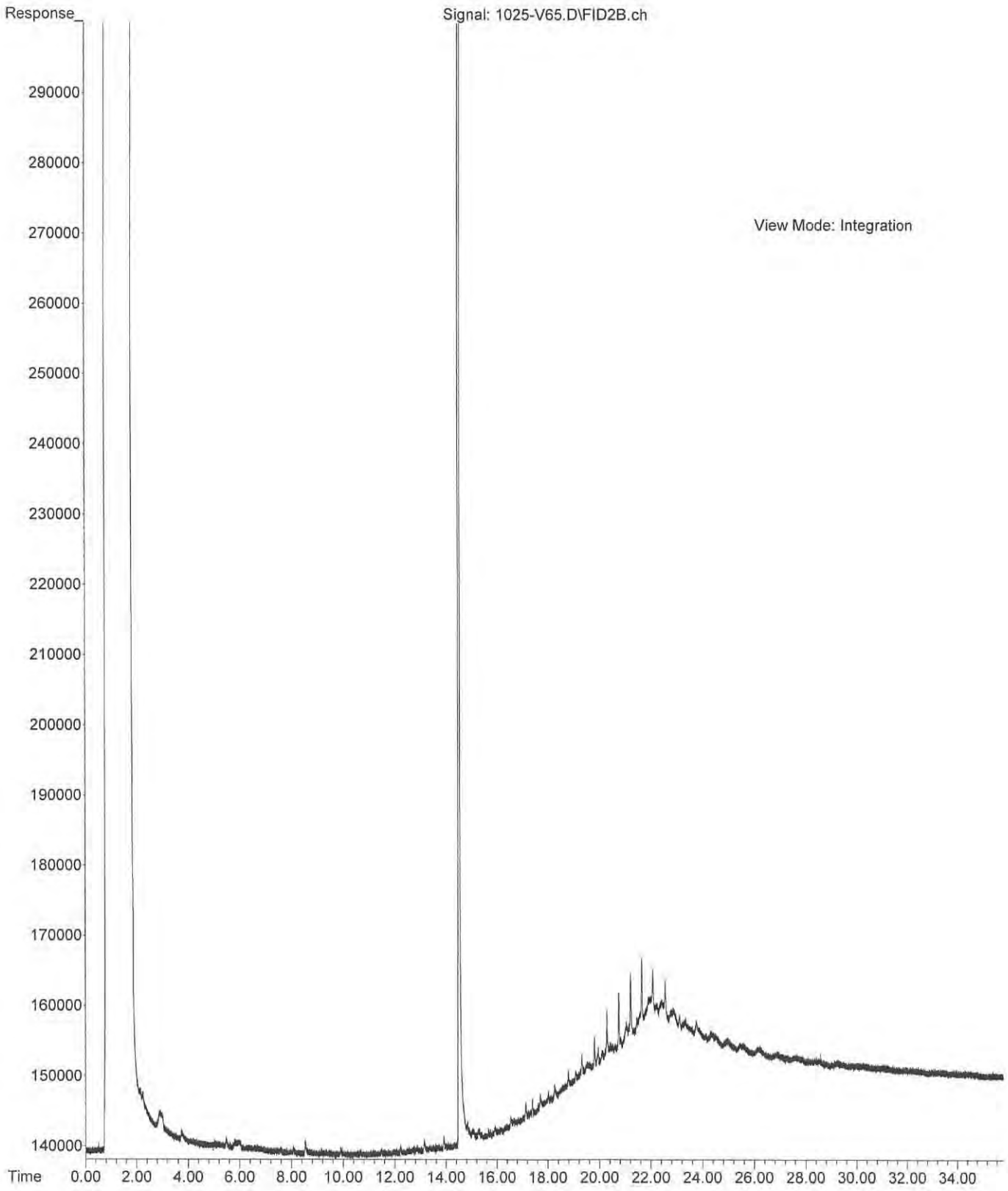
File : C:\msdchem\2\DATA\V121026.SEC\1026-V55.D
Operator :
Acquired : 26 Oct 2012 12:03 using AcqMethod V121024F.M
Instrument : Vigo
Sample Name: 10-187-01 RC
Misc Info :
Vial Number: 55



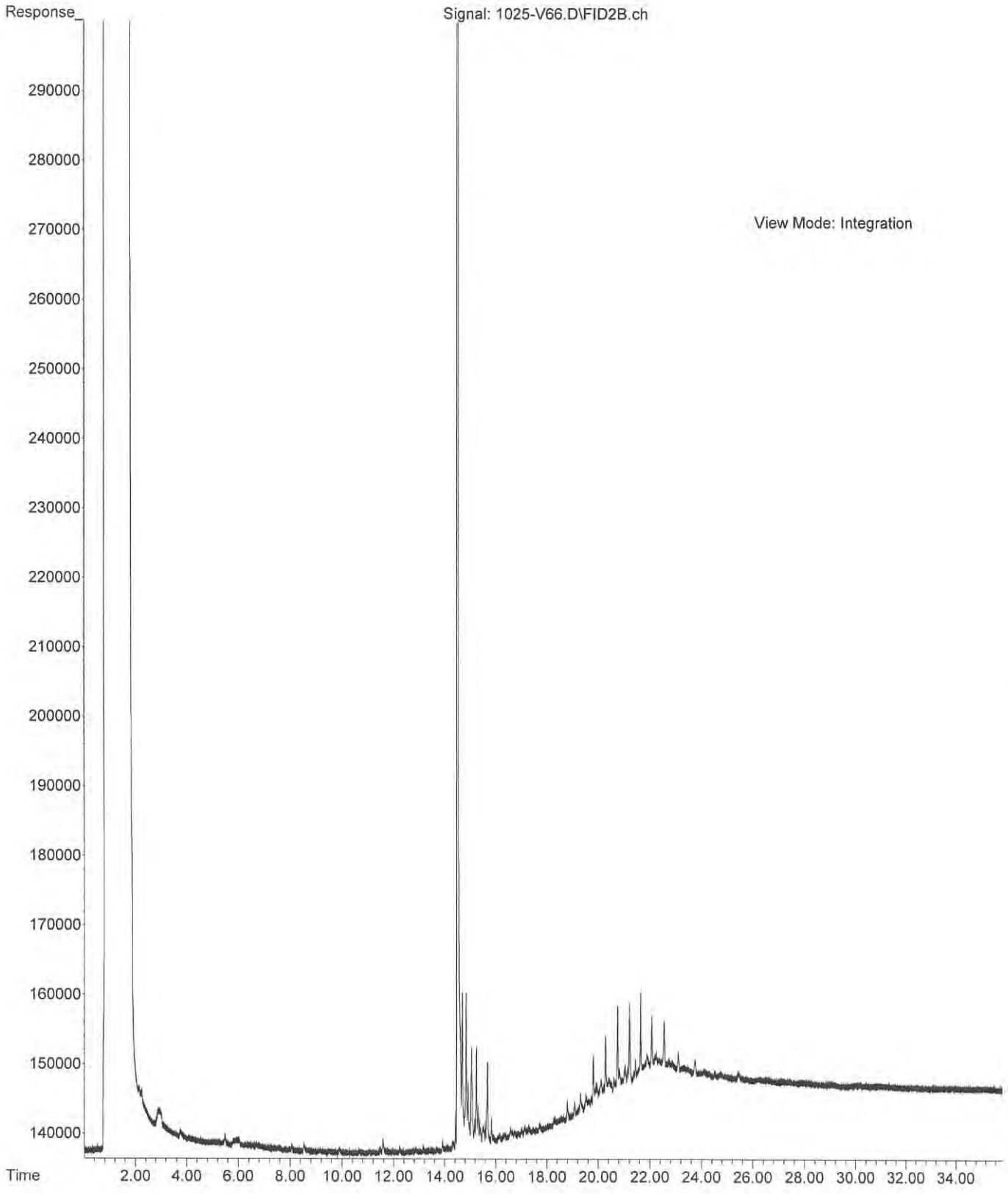
File : C:\msdchem\2\DATA\V121025\1025-V30.D
Operator :
Acquired : 26 Oct 2012 7:11 using AcqMethod V121024F.M
Instrument : Vigo
Sample Name: 10-187-02
Misc Info :
Vial Number: 30



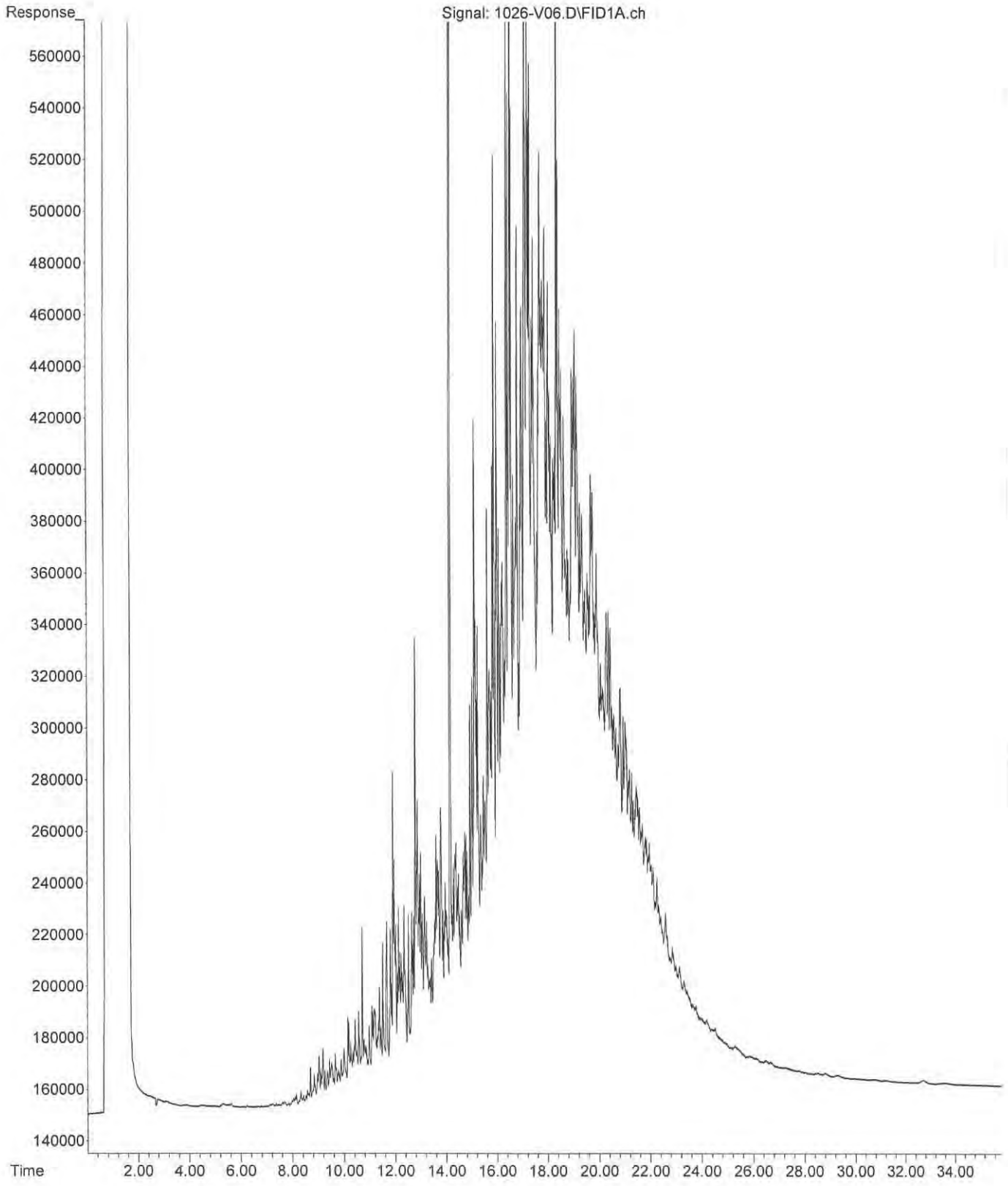
File :C:\msdchem\2\DATA\V121025.SEC\1025-V65.D
Operator :
Acquired : 25 Oct 2012 21:16 using AcqMethod V121024F.M
Instrument : Vigo
Sample Name: 10-187-03
Misc Info :
Vial Number: 65



File :C:\msdchem\2\DATA\V121025.SEC\1025-V66.D
Operator :
Acquired : 25 Oct 2012 21:55 using AcqMethod V121024F.M
Instrument : Vigo
Sample Name: 10-187-04
Misc Info :
Vial Number: 66



File : C:\msdchem\2\DATA\V121026\1026-V06.D
Operator :
Acquired : 26 Oct 2012 12:43 using AcqMethod V121024F.M
Instrument : Vigo
Sample Name: 10-187-05 5X
Misc Info :
Vial Number: 6



Analytical Resources, Incorporated
Analytical Chemists and Consultants

May 16, 2013

Rob Leet
GeoEngineers, Inc.
Plaza 600 Building
600 Stewart Street, Suite 1700
Seattle, WA 98101

RE: PA Mill Stockpile Sampling, 000137-015-03
ARI Job No.: WN15

Dear Rob:

Please find enclosed the original Chain-of-Custody records (COCs), sample receipt documentation, and the data for samples from the project referenced above. Analytical Resources, Inc. accepted sixty discrete soil samples on April 23, 2013. For details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

Discrete soil samples were homogenized and composited into twelve samples. Details regarding compositing can be found in the Geotechnical Case Narrative.

The composite samples were analyzed for Semivolatiles, Dioxin/Furans, Aroclor PCBs, NWTPH-Dx, and Metals, as requested.

The Semivolatile continuing calibration fell outside the 20% control limit low for Benzoic Acid and Pentachlorophenol. All detected results for these compounds have been flagged with a "Q" qualifier. No further corrective action was taken.

Diethylphthalate and bis(2-Ethylhexyl)phthalate were present in **MB-043013** at a level that was greater than ½ the reporting limit. All detected results for these compounds have been flagged with a "B" qualifier. No further corrective action was taken.

The matrix spike and matrix spike duplicate percent recoveries of 3,3'-Dichlorobenzidine fell outside the control limits low for sample **SP1-4-(1-5)**. No corrective action is required for matrix QC.

The Dioxin/Furan method blank contained reportable responses below the reporting limit for several compounds. All associated samples had results for these compounds greater than ten times the level found in the method blank. No corrective action was taken.

Select Dioxin/Furan results have been flagged with an "EMPC" qualifier indicating a response did not meet requirements of positive identification. The "EMPC" values are treated as non-detect results under some programs and as detected results under programs with more conservative protocols.

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Select Dioxin/Furan results have been flagged with an "X" qualifier due to indication of a co-eluting PDBE.

The TEQ is presented with WHO2005 with ND=0 for non-detected results and ND=1/2 for non-detected results with "EMPCs" included as detected results.

The Aroclor PCB surrogate percent recoveries of Tetrachlorometaxylene were outside the control limits high for **MB-043013**, **LCS-043013**, **SP1-5-(1-5)**, and **SP1-2-(1-5)**. All other Aroclor PCB surrogate percent recoveries were within control limits. No corrective action was taken.

Antimony was present in the metals method blank at a level that was less than ½ the reporting limit. All detected sample results were flagged with a "J" qualifier and were less than ½ the reporting limit. No corrective action was taken.

The matrix spike percent recoveries of antimony and copper fell outside the control limits low for sample **SP1-5-(1-5)**. All relevant data have been flagged with an "N" qualifier on the Form V. No further corrective action was taken.

The duplicate RPDs of copper and mercury were outside the control limit for sample **SP1-5-(1-5)**. All relevant data have been flagged with a "*" qualifier on the Form VI. No further corrective action was taken.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile WN15

Enclosures

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard	Page: 1 of 6	
ARI Client Company: GeoEngineers, Inc	Phone: 206.239.3230	Date: 4/22/13	Ice Present? No
Client Contact: Rob Leet		No. of Coolers:	Cooler Temps:
Client Project Name: PA Mill Stockpile Sampling			
Client Project #: 030137-015-03	Samplers: TML		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	SVOC's	TPH-Dx	PCB's	Metals	Dioxins/Furans	Composite Samples			Notes/Comments
					Analysis Requested								
SP1-5-1	4/17/13	1155	Soil	3	X	X	X	X	X				- Metals: Sb, As, Ba, Cd, Cr(Total), Co, Cu, Pb, Mn, Hg, Ni, Se, Ag, Tl, Zn
SP1-5-2		1210		3	X	X	X	X	X				
SP1-5-3		1225		3	X	X	X	X	X				
SP1-5-4		1240		3	X	X	X	X	X				
SP1-5-5		1255		3	X	X	X	X	X				
SP1-1-1		1310		3	X	X	X	X	X				
SP1-1-2		1325		3	X	X	X	X	X				
SP1-1-3		1340		3	X	X	X	X	X				
SP1-1-4		1355		3	X	X	X	X	X				
SP1-1-5	4/17/13	1405	Soil	3	X	X	X	X	X				

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
- Composite all ~~SP1-5~~ SP1-5	Printed Name: Theo M Leonard	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
- Archive all samples	Company: GeoEngineers, Inc	Company: ARI	Company:	Company:
- Composite all SP1-1 samples into 1 Sample	Date & Time: 4/23/13 @ 1230	Date & Time: 4/25/13 1230	Date & Time:	Date & Time:

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard	Page: 2 of 6	
ARI Client Company: GeoEngineers, Inc	Phone: 206.239.3230	Date: 4/22/13	Ice Present?
Client Contact: Rob Leet		No. of Coolers:	Cooler Temps:
Client Project Name: PA Mill Stockpile Sampling			
Client Project #: 030137-015-03	Samplers: TML		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: SVOC's	TPH-Dx	PCB's	Metals	Dioxins/furans	Composite Samples			Notes/Comments
SP1-6-1	4/17/13	1415	Soil	3	X	X	X	X	X				-Metals: Sb, As, Ba Cd, Cr (Total), Co Cu, Pb, Mn, Hg Ni, Se, Ag, Tl, Zn
SP1-6-2	"	1425	"	3	X	X	X	X	X				
SP1-6-3	"	1440	"	3	X	X	X	X	X				
SP1-6-4	"	1450	"	3	X	X	X	X	X				
SP1-6-5	"	1505	"	3	X	X	X	X	X				
SP1-2-1	"	1520	"	3	X	X	X	X	X				
SP1-2-2	"	1530	"	3	X	X	X	X	X				
SP1-2-3	"	1545	"	3	X	X	X	X	X				
SP1-2-4	"	1600	"	3	X	X	X	X	X				
SP1-2-5	4/17/13	1615	Soil	3	X	X	X	X	X				

Comments/Special Instructions
- Composite all SP1-6 samples into 1 Sample
- Archive all samples
- Composite all SP1-2 samples into 1 Sample

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	Theo M Leonard	A. Volgardsen		
Company:	GeoEngineers, Inc	ARI		
Date & Time:	4/23/13 @ 1230	4/23/13 1730		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard	Page: 3 of 6	
ARI Client Company: GeoEngineers, Inc	Phone: 206.239.3230	Date: 4/22/13	Ice Present?
Client Contact: Rob Leet		No. of Coolers:	Cooler Temps:
Client Project Name: PA Mill Stockpile Sampling			
Client Project #: 0301137-015-03	Samplers: TML		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	SVOC's	TPH-Dx	PCB's	Metals	Composite Samples	Disposal/ Storage			Notes/Comments
					Analysis Requested								
SP1-3-1	4/17/13	1630	Soil	3	X	X	X	X		X			- Metals: Sb, As, Ba, Cd, Cr (Total), Co, Cu, Pb, Mn, Hg, Ni, Se, Ag, Tl, Zn
SP1-3-2	4/17/13	1645		3	X	X	X	X		X			
SP1-3-3	4/17/13	1655		3	X	X	X	X		X			
SP1-3-4	4/18/13	0810		3	X	X	X	X		X			
SP1-3-5		0820		3	X	X	X	X		X			
SP1-8-1		0840		3	X	X	X	X		X			
SP1-8-2		0855		3	X	X	X	X		X			
SP1-8-3		0910		3	X	X	X	X		X			
SP1-8-4		0925		3	X	X	X	X		X			
SP1-8-5	4/18/13	0940	Soil	3	X	X	X	X		X			

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
- Composite all SP1-3 samples into 1 Sample - Archive all samples - Composite all SP1-8 samples into 1 Sample	(Signature)	(Signature)	(Signature)	(Signature)
	Printed Name: Theo M Leamed	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: GeoEngineers, Inc	Company: ARI	Company:	Company:
	Date & Time: 4/23/13 @ 1230	Date & Time: 4/23/13 1230	Date & Time:	Date & Time:

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard	Page: 4 of 6	
ARI Client Company: GeoEngineers, Inc	Phone: 206.239.3230	Date: 4/22/13	Ice Present?
Client Contact: Rob Leet		No. of Coolers:	Cooler Temps:
Client Project Name: PA Mill Stockpile Sampling			
Client Project #: 000137-015-03	Samplers: TML		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: SVOC's	TPH-Dx	PCB's	Metals	Composite Samples				Notes/Comments
SP1-7-1	4/18/13	0950	Soil	2	X	X	X	X					-Metals: Sb, As, Ba, Cd, Cr(Total), Co, Cu, Pb, Mn, Hg, Ni, Se, Ag, Tl, Zn
SP1-7-2		1000		2	X	X	X	X					
SP1-7-3		1015		2	X	X	X	X					
SP1-7-4		1030		2	X	X	X	X					
SP1-7-5		1040		2	X	X	X	X					
SP1-4-1		1050		2	X	X	X	X					
SP1-4-2		1100		2	X	X	X	X					
SP1-4-3		1115		2	X	X	X	X					
SP1-4-4		1130		2	X	X	X	X					
SP1-4-5	4/18/13	1145	Soil	2	X	X	X	X					

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
-Composite all SP1-7 samples into 1 Sample -Archive all samples -Composite all SP1-4 samples into 1 Sample	Printed Name: Theo M Leonard	Printed Name: A. Volgarsen	Printed Name:	Printed Name:
	Company: GeoEngineers, Inc	Company: ARI	Company:	Company:
	Date & Time: 4/23/13 @ 1230	Date & Time: 4/23/13 1230	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard	Page: 5 of 6	
ARI Client Company: GeoEngineers, Inc.	Phone: 206.239.3230	Date: 4/22/13	Ice Present?
Client Contact: Rob Lent		No. of Coolers:	Cooler Temps:
Client Project Name: PA M:11 Stockpile Sampling			
Client Project #: 030137-015-03	Samplers: TML		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	SVOC's	TPH-Dx	PCB's	Met.'s	Dioxins/Furans	Composite Samples			Notes/Comments
					Analysis Requested								
SP 2-4-1	4/18/13	1205	Soil	3	X	X	X	X	X				- Metals: Sb, As, Ba, Cd, Cr(Total), Cu, Pb, Mn, Hg, Ni, Se, Ag, Tl, Zn
SP 2-4-2		1215		3	X	X	X	X	X				
SP 2-4-3		1225		3	X	X	X	X	X				
SP 2-4-4		1235		3	X	X	X	X	X				
SP 2-4-5		1245		3	X	X	X	X	X				
SP 2-1-1		1305		3	X	X	X	X	X				
SP 2-1-2		1315		3	X	X	X	X	X				
SP 2-1-3		1330		3	X	X	X	X	X				
SP 2-1-4		1345		3	X	X	X	X	X				
SP 2-1-5	4/18/13	1355	Soil	3	X	X	X	X	X				

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
- Composite all SP 2-4 samples into 1 Sample - Archive all samples - Composite all SP 2-1 samples into 1 Sample	(Signature)	(Signature)	(Signature)	(Signature)
	Printed Name: Theo M Lawrence	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: GeoEngineers, Inc.	Company: ARI	Company:	Company:
	Date & Time: 4/23/13 @ 1230	Date & Time: 4/23/13 1230	Date & Time:	Date & Time:

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard	Page: 6 of 6	
ARI Client Company: Geo Engineers, Inc	Phone: 206. 239. 3230	Date: 4/22/13	Ice Present?
Client Contact: Rob Lent		No. of Coolers:	Cooler Temps:
Client Project Name: PA Mill Stockpile Sampling			
Client Project #: 080137-015-03	Samplers: TML		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: SVOC's	TPH-Dx	PCB's	Metals	Composite Samples				Notes/Comments
SP 2-2-1	4/18/13	1405	Soil	2	X	X	X	X					- Metals: Sb, As, Ba, Cd, Co (Total), Co, Pb, Mn, Hg, Ni, Se, Ag, Tl, Zn
SP 2-2-2		1415		2	X	X	X	X					
SP 2-2-3		1430		2	X	X	X	X					
SP 2-2-4		1445		2	X	X	X	X					
SP 2-2-5		1455		2	X	X	X	X					
SP 2-3-1		1505		2	X	X	X	X					
SP 2-3-2		1515		2	X	X	X	X					
SP 2-3-3		1530		2	X	X	X	X					
SP 2-3-4		1540		2	X	X	X	X					
SP 2-3-5	4/18/13	1550	Soil	2	X	X	X	X					

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
- Composite all SP2-2 samples into 1 Sample - Archive all samples - Composite all SP 2-3 samples into 1 Sample	Printed Name: Theo M Lent	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
	Company: Geo Engineers, Inc	Company: ARI	Company:	Company:
	Date & Time: 4/22/13 @ 1230	Date & Time: 4/23/13 1230	Date & Time:	Date & Time:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: GeoEngineers

Project Name: PA Mill Stockpile Sampling

COC No(s): NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: WN15

Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 0.5 1.4 1.6 ___ ___ ___

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877952

Cooler Accepted by: AV Date: 4/23/13 Time: 1230

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
Were all bottles sealed in individual plastic bags?		YES	NO
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Was Sample Split by ARI: NA YES Date/Time: ___ Equipment: ___ Split by: ___

Samples Logged by: [illegible] Date: 4-23-13 Time: 1614

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
		

Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

WN15 : 00000

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WN15
Client: GeoEngineers
Project Event: 000137-015-03
Project Name: PA Mill Stockpile Sampling

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SP1-5-(1-5)	WN15A	13-8557	Soil	04/17/13 11:55	04/23/13 12:30
2.	SP1-1-(1-5)	WN15B	13-8558	Soil	04/17/13 13:10	04/23/13 12:30
3.	SP1-6-(1-5)	WN15C	13-8559	Soil	04/17/13 14:15	04/23/13 12:30
4.	SP1-2-(1-5)	WN15D	13-8560	Soil	04/17/13 15:20	04/23/13 12:30
5.	SP1-3-(1-5)	WN15E	13-8561	Soil	04/17/13 16:30	04/23/13 12:30
6.	SP1-8-(1-5)	WN15F	13-8562	Soil	04/18/13 08:40	04/23/13 12:30
7.	SP1-7-(1-5)	WN15G	13-8563	Soil	04/18/13 09:50	04/23/13 12:30
8.	SP1-4-(1-5)	WN15H	13-8564	Soil	04/18/13 10:30	04/23/13 12:30
9.	SP2-4-(1-5)	WN15I	13-8565	Soil	04/18/13 12:05	04/23/13 12:30
10.	SP2-1-(1-5)	WN15J	13-8566	Soil	04/18/13 13:05	04/23/13 12:30
11.	SP2-2-(1-5)	WN15K	13-8567	Soil	04/18/13 14:05	04/23/13 12:30
12.	SP2-3-(1-5)	WN15L	13-8568	Soil	04/18/13 15:05	04/23/13 12:30
13.	SP1-5-1	WN15M	13-8569	Soil	04/17/13 11:55	04/23/13 12:30
14.	SP1-5-2	WN15N	13-8570	Soil	04/17/13 12:10	04/23/13 12:30
15.	SP1-5-3	WN15O	13-8571	Soil	04/17/13 12:25	04/23/13 12:30
16.	SP1-5-4	WN15P	13-8572	Soil	04/17/13 12:40	04/23/13 12:30
17.	SP1-5-5	WN15Q	13-8573	Soil	04/17/13 12:55	04/23/13 12:30
18.	SP1-1-1	WN15R	13-8574	Soil	04/17/13 13:10	04/23/13 12:30
19.	SP1-1-2	WN15S	13-8575	Soil	04/17/13 13:25	04/23/13 12:30
20.	SP1-1-3	WN15T	13-8576	Soil	04/17/13 13:40	04/23/13 12:30
21.	SP1-1-4	WN15U	13-8577	Soil	04/17/13 13:55	04/23/13 12:30
22.	SP1-1-5	WN15V	13-8578	Soil	04/17/13 14:05	04/23/13 12:30
23.	SP1-6-1	WN15W	13-8579	Soil	04/17/13 14:15	04/23/13 12:30
24.	SP1-6-2	WN15X	13-8580	Soil	04/17/13 14:25	04/23/13 12:30
25.	SP1-6-3	WN15Y	13-8581	Soil	04/17/13 14:40	04/23/13 12:30
26.	SP1-6-4	WN15Z	13-8582	Soil	04/17/13 14:50	04/23/13 12:30
27.	SP1-6-5	WN15AA	13-8583	Soil	04/17/13 15:05	04/23/13 12:30
28.	SP1-2-1	WN15AB	13-8584	Soil	04/17/13 15:20	04/23/13 12:30
29.	SP1-2-2	WN15AC	13-8585	Soil	04/17/13 15:30	04/23/13 12:30
30.	SP1-2-3	WN15AD	13-8586	Soil	04/17/13 15:45	04/23/13 12:30
31.	SP1-2-4	WN15AE	13-8587	Soil	04/17/13 16:00	04/23/13 12:30
32.	SP1-2-5	WN15AF	13-8588	Soil	04/17/13 16:15	04/23/13 12:30
33.	SP1-3-1	WN15AG	13-8589	Soil	04/17/13 16:30	04/23/13 12:30
34.	SP1-3-2	WN15AH	13-8590	Soil	04/17/13 16:45	04/23/13 12:30
35.	SP1-3-3	WN15AI	13-8591	Soil	04/17/13 16:55	04/23/13 12:30
36.	SP1-3-4	WN15AJ	13-8592	Soil	04/18/13 08:10	04/23/13 12:30
37.	SP1-3-5	WN15AK	13-8593	Soil	04/18/13 08:20	04/23/13 12:30
38.	SP1-8-1	WN15AL	13-8594	Soil	04/18/13 08:40	04/23/13 12:30
39.	SP1-8-2	WN15AM	13-8595	Soil	04/18/13 08:55	04/23/13 12:30
40.	SP1-8-3	WN15AN	13-8596	Soil	04/18/13 09:10	04/23/13 12:30
41.	SP1-8-4	WN15AO	13-8597	Soil	04/18/13 09:25	04/23/13 12:30
42.	SP1-8-5	WN15AP	13-8598	Soil	04/18/13 09:40	04/23/13 12:30
43.	SP1-7-1	WN15AQ	13-8599	Soil	04/18/13 09:50	04/23/13 12:30
44.	SP1-7-2	WN15AR	13-8600	Soil	04/18/13 10:00	04/23/13 12:30
45.	SP1-7-3	WN15AS	13-8601	Soil	04/18/13 10:15	04/23/13 12:30
46.	SP1-7-4	WN15AT	13-8602	Soil	04/18/13 10:30	04/23/13 12:30
47.	SP1-7-5	WN15AU	13-8603	Soil	04/18/13 10:40	04/23/13 12:30

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WN15
Client: GeoEngineers
Project Event: 000137-015-03
Project Name: PA Mill Stockpile Sampling

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
48.	SP1-4-1	WN15AV	13-8604	Soil	04/18/13 10:50	04/23/13 12:30
49.	SP1-4-2	WN15AW	13-8605	Soil	04/18/13 11:00	04/23/13 12:30
50.	SP1-4-3	WN15AX	13-8606	Soil	04/18/13 11:15	04/23/13 12:30
51.	SP1-4-4	WN15AY	13-8607	Soil	04/18/13 11:30	04/23/13 12:30
52.	SP1-4-5	WN15AZ	13-8608	Soil	04/18/13 11:45	04/23/13 12:30
53.	SP2-4-1	WN15BA	13-8609	Soil	04/18/13 12:05	04/23/13 12:30
54.	SP2-4-2	WN15BB	13-8610	Soil	04/18/13 12:15	04/23/13 12:30
55.	SP2-4-3	WN15BC	13-8611	Soil	04/18/13 12:25	04/23/13 12:30
56.	SP2-4-4	WN15BD	13-8612	Soil	04/18/13 12:35	04/23/13 12:30
57.	SP2-4-5	WN15BE	13-8613	Soil	04/18/13 12:45	04/23/13 12:30
58.	SP2-1-1	WN15BF	13-8614	Soil	04/18/13 13:05	04/23/13 12:30
59.	SP2-1-2	WN15BG	13-8615	Soil	04/18/13 13:15	04/23/13 12:30
60.	SP2-1-3	WN15BH	13-8616	Soil	04/18/13 13:30	04/23/13 12:30
61.	SP2-1-4	WN15BI	13-8617	Soil	04/18/13 13:45	04/23/13 12:30
62.	SP2-1-5	WN15BJ	13-8618	Soil	04/18/13 13:55	04/23/13 12:30
63.	SP2-2-1	WN15BK	13-8619	Soil	04/18/13 14:05	04/23/13 12:30
64.	SP2-2-2	WN15BL	13-8620	Soil	04/18/13 14:15	04/23/13 12:30
65.	SP2-2-3	WN15BM	13-8621	Soil	04/18/13 14:30	04/23/13 12:30
66.	SP2-2-4	WN15BN	13-8622	Soil	04/18/13 14:45	04/23/13 12:30
67.	SP2-2-5	WN15BO	13-8623	Soil	04/18/13 14:55	04/23/13 12:30
68.	SP2-3-1	WN15BP	13-8624	Soil	04/18/13 15:05	04/23/13 12:30
69.	SP2-3-2	WN15BQ	13-8625	Soil	04/18/13 15:15	04/23/13 12:30
70.	SP2-3-3	WN15BR	13-8626	Soil	04/18/13 15:30	04/23/13 12:30
71.	SP2-3-4	WN15BS	13-8627	Soil	04/18/13 15:40	04/23/13 12:30
72.	SP2-3-5	WN15BT	13-8628	Soil	04/18/13 15:50	04/23/13 12:30

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: GeoEngineers	**Client Project No.:** 000137-015-03
ARI Project No.: WN15	**Client Project:** PA Mill Stockpile Sampling

Case Narrative

1. Twelve samples were received on April 23, 2013 for sample preparation by means of compositing. Each sample contained five discrete samples. The samples were received in eight ounce glass jars.
2. Each set of five discrete samples were spooned into a stainless steel bowl and homogenized, then spooned back into the original sample jars. All equipment was decontaminated in between sets. The equipment was first washed with a laboratory grade detergent, rinsed with deionized water, allowed to dry and rinsed with dichloromethane.
3. All material was delivered to sample receiving for logging and distribution.
4. There were no noted anomalies in the samples or test method.

Released by: Elizabeth Noble *Technician* Date: May 7, 2013

Reviewed by: Yvonne Curtis *Geotechnical Laboratory Manager* Date: 5/8/13

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
M2	The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-5-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15A
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 14:01
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.05 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 8.8%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	20	< 20 U
111-44-4	Bis-(2-Chloroethyl) Ether	20	< 20 U
95-57-8	2-Chlorophenol	20	< 20 U
541-73-1	1,3-Dichlorobenzene	20	< 20 U
106-46-7	1,4-Dichlorobenzene	20	< 20 U
100-51-6	Benzyl Alcohol	20	< 20 U
95-50-1	1,2-Dichlorobenzene	20	< 20 U
95-48-7	2-Methylphenol	20	< 20 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	20	< 20 U
106-44-5	4-Methylphenol	20	< 20 U
621-64-7	N-Nitroso-Di-N-Propylamine	20	< 20 U
67-72-1	Hexachloroethane	20	< 20 U
98-95-3	Nitrobenzene	20	< 20 U
78-59-1	Isophorone	20	< 20 U
88-75-5	2-Nitrophenol	100	< 100 U
105-67-9	2,4-Dimethylphenol	40	< 40 U
65-85-0	Benzoic Acid	400	< 400 U
111-91-1	bis(2-Chloroethoxy) Methane	20	< 20 U
120-83-2	2,4-Dichlorophenol	200	< 200 U
120-82-1	1,2,4-Trichlorobenzene	20	< 20 U
91-20-3	**Naphthalene**	**20**	**68**
106-47-8	4-Chloroaniline	270	< 270 U
87-68-3	Hexachlorobutadiene	20	< 20 U
59-50-7	4-Chloro-3-methylphenol	100	< 100 U
91-57-6	**2-Methylnaphthalene**	**20**	**37**
77-47-4	Hexachlorocyclopentadiene	400	< 400 U
88-06-2	2,4,6-Trichlorophenol	100	< 100 U
95-95-4	2,4,5-Trichlorophenol	100	< 100 U
91-58-7	2-Chloronaphthalene	20	< 20 U
88-74-4	2-Nitroaniline	100	< 100 U
131-11-3	Dimethylphthalate	20	< 20 U
208-96-8	**Acenaphthylene**	**20**	**26**
99-09-2	3-Nitroaniline	100	< 100 U
83-32-9	**Acenaphthene**	**20**	**27**
51-28-5	2,4-Dinitrophenol	850	< 850 U
100-02-7	4-Nitrophenol	100	< 100 U
132-64-9	**Dibenzofuran**	**20**	**41**

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-5-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15A
LIMS ID: 13-8557
Matrix: Soil
Date Analyzed: 05/11/13 14:01

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	100	< 100 U
121-14-2	2,4-Dinitrotoluene	100	< 100 U
84-66-2	Diethylphthalate	50	< 50 U
7005-72-3	4-Chlorophenyl-phenylether	20	< 20 U
86-73-7	**Fluorene**	**20**	**42**
100-01-6	4-Nitroaniline	100	< 100 U
534-52-1	4,6-Dinitro-2-Methylphenol	200	< 200 U
86-30-6	N-Nitrosodiphenylamine	20	< 20 U
101-55-3	4-Bromophenyl-phenylether	20	< 20 U
118-74-1	Hexachlorobenzene	20	< 20 U
87-86-5	Pentachlorophenol	200	< 200 U
85-01-8	**Phenanthrene**	**20**	**350**
86-74-8	**Carbazole**	**20**	**40**
120-12-7	**Anthracene**	**20**	**110**
84-74-2	Di-n-Butylphthalate	20	< 20 U
206-44-0	**Fluoranthene**	**20**	**410**
129-00-0	**Pyrene**	**20**	**450**
85-68-7	Butylbenzylphthalate	20	< 20 U
91-94-1	3,3'-Dichlorobenzidine	150	< 150 U
56-55-3	**Benzo(a)anthracene**	**20**	**430**
117-81-7	**bis(2-Ethylhexyl)phthalate**	**25**	**33 B**
218-01-9	**Chrysene**	**20**	**860**
117-84-0	Di-n-Octyl phthalate	20	< 20 U
50-32-8	**Benzo(a)pyrene**	**20**	**350**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**20**	**220**
53-70-3	**Dibenz(a,h)anthracene**	**20**	**77**
191-24-2	**Benzo(g,h,i)perylene**	**20**	**220**
90-12-0	**1-Methylnaphthalene**	**20**	**21**
TOTBFA	**Total Benzofluoranthenes**	**40**	**770**

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	65.6%	2-Fluorobiphenyl	69.0%
d14-p-Terphenyl	97.6%	d4-1,2-Dichlorobenzene	62.2%
d5-Phenol	64.1%	2-Fluorophenol	60.7%
2,4,6-Tribromophenol	84.1%	d4-2-Chlorophenol	65.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-1-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15B
LIMS ID: 13-8558
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 14:37
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.76 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 17.5%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	19	< 19 U
111-44-4	Bis-(2-Chloroethyl) Ether	19	< 19 U
95-57-8	2-Chlorophenol	19	< 19 U
541-73-1	1,3-Dichlorobenzene	19	< 19 U
106-46-7	1,4-Dichlorobenzene	19	< 19 U
100-51-6	Benzyl Alcohol	19	< 19 U
95-50-1	1,2-Dichlorobenzene	19	< 19 U
95-48-7	2-Methylphenol	19	< 19 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	19	< 19 U
106-44-5	4-Methylphenol	19	< 19 U
621-64-7	N-Nitroso-Di-N-Propylamine	19	< 19 U
67-72-1	Hexachloroethane	19	< 19 U
98-95-3	Nitrobenzene	19	< 19 U
78-59-1	Isophorone	19	< 19 U
88-75-5	2-Nitrophenol	93	< 93 U
105-67-9	2,4-Dimethylphenol	37	< 37 U
65-85-0	Benzoic Acid	370	< 370 U
111-91-1	bis(2-Chloroethoxy) Methane	19	< 19 U
120-83-2	2,4-Dichlorophenol	190	< 190 U
120-82-1	1,2,4-Trichlorobenzene	19	< 19 U
91-20-3	**Naphthalene**	**19**	**22**
106-47-8	4-Chloroaniline	250	< 250 U
87-68-3	Hexachlorobutadiene	19	< 19 U
59-50-7	4-Chloro-3-methylphenol	93	< 93 U
91-57-6	2-Methylnaphthalene	19	< 19 U
77-47-4	Hexachlorocyclopentadiene	370	< 370 U
88-06-2	2,4,6-Trichlorophenol	93	< 93 U
95-95-4	2,4,5-Trichlorophenol	93	< 93 U
91-58-7	2-Chloronaphthalene	19	< 19 U
88-74-4	2-Nitroaniline	93	< 93 U
131-11-3	Dimethylphthalate	19	< 19 U
208-96-8	Acenaphthylene	19	< 19 U
99-09-2	3-Nitroaniline	93	< 93 U
83-32-9	Acenaphthene	19	< 19 U
51-28-5	2,4-Dinitrophenol	790	< 790 U
100-02-7	4-Nitrophenol	93	< 93 U
132-64-9	Dibenzofuran	19	< 19 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-1-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15B
LIMS ID: 13-8558
Matrix: Soil
Date Analyzed: 05/11/13 14:37

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	93	< 93 U
121-14-2	2,4-Dinitrotoluene	93	< 93 U
84-66-2	Diethylphthalate	46	< 46 U
7005-72-3	4-Chlorophenyl-phenylether	19	< 19 U
86-73-7	Fluorene	19	< 19 U
100-01-6	4-Nitroaniline	93	< 93 U
534-52-1	4,6-Dinitro-2-Methylphenol	190	< 190 U
86-30-6	N-Nitrosodiphenylamine	19	< 19 U
101-55-3	4-Bromophenyl-phenylether	19	< 19 U
118-74-1	Hexachlorobenzene	19	< 19 U
87-86-5	Pentachlorophenol	190	< 190 U
85-01-8	**Phenanthrene**	**19**	**32**
86-74-8	Carbazole	19	< 19 U
120-12-7	Anthracene	19	< 19 U
84-74-2	Di-n-Butylphthalate	19	< 19 U
206-44-0	**Fluoranthene**	**19**	**28**
129-00-0	**Pyrene**	**19**	**27**
85-68-7	Butylbenzylphthalate	19	< 19 U
91-94-1	3,3'-Dichlorobenzidine	140	< 140 U
56-55-3	Benzo(a)anthracene	19	< 19 U
117-81-7	bis(2-Ethylhexyl)phthalate	23	< 23 U
218-01-9	Chrysene	19	< 19 U
117-84-0	Di-n-Octyl phthalate	19	< 19 U
50-32-8	Benzo(a)pyrene	19	< 19 U
193-39-5	Indeno(1,2,3-cd)pyrene	19	< 19 U
53-70-3	Dibenz(a,h)anthracene	19	< 19 U
191-24-2	Benzo(g,h,i)perylene	19	< 19 U
90-12-0	1-Methylnaphthalene	19	< 19 U
TOTBFA	Total Benzofluoranthenes	37	< 37 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	64.0%	2-Fluorobiphenyl	67.2%
d14-p-Terphenyl	95.2%	d4-1,2-Dichlorobenzene	61.4%
d5-Phenol	63.5%	2-Fluorophenol	60.0%
2,4,6-Tribromophenol	89.6%	d4-2-Chlorophenol	65.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-6-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15C
LIMS ID: 13-8559
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 15:14
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.43 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 20.0%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	19	< 19 U
111-44-4	Bis-(2-Chloroethyl) Ether	19	< 19 U
95-57-8	2-Chlorophenol	19	< 19 U
541-73-1	1,3-Dichlorobenzene	19	< 19 U
106-46-7	1,4-Dichlorobenzene	19	< 19 U
100-51-6	Benzyl Alcohol	19	< 19 U
95-50-1	1,2-Dichlorobenzene	19	< 19 U
95-48-7	2-Methylphenol	19	< 19 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	19	< 19 U
106-44-5	4-Methylphenol	19	< 19 U
621-64-7	N-Nitroso-Di-N-Propylamine	19	< 19 U
67-72-1	Hexachloroethane	19	< 19 U
98-95-3	Nitrobenzene	19	< 19 U
78-59-1	Isophorone	19	< 19 U
88-75-5	2-Nitrophenol	96	< 96 U
105-67-9	2,4-Dimethylphenol	38	< 38 U
65-85-0	Benzoic Acid	380	< 380 U
111-91-1	bis(2-Chloroethoxy) Methane	19	< 19 U
120-83-2	2,4-Dichlorophenol	190	< 190 U
120-82-1	1,2,4-Trichlorobenzene	19	< 19 U
91-20-3	**Naphthalene**	**19**	**20**
106-47-8	4-Chloroaniline	260	< 260 U
87-68-3	Hexachlorobutadiene	19	< 19 U
59-50-7	4-Chloro-3-methylphenol	96	< 96 U
91-57-6	2-Methylnaphthalene	19	< 19 U
77-47-4	Hexachlorocyclopentadiene	380	< 380 U
88-06-2	2,4,6-Trichlorophenol	96	< 96 U
95-95-4	2,4,5-Trichlorophenol	96	< 96 U
91-58-7	2-Chloronaphthalene	19	< 19 U
88-74-4	2-Nitroaniline	96	< 96 U
131-11-3	Dimethylphthalate	19	< 19 U
208-96-8	Acenaphthylene	19	< 19 U
99-09-2	3-Nitroaniline	96	< 96 U
83-32-9	Acenaphthene	19	< 19 U
51-28-5	2,4-Dinitrophenol	820	< 820 U
100-02-7	4-Nitrophenol	96	< 96 U
132-64-9	Dibenzofuran	19	< 19 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-6-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15C
LIMS ID: 13-8559
Matrix: Soil
Date Analyzed: 05/11/13 15:14

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	96	< 96 U
121-14-2	2,4-Dinitrotoluene	96	< 96 U
84-66-2	**Diethylphthalate**	**48**	**55 B**
7005-72-3	4-Chlorophenyl-phenylether	19	< 19 U
86-73-7	Fluorene	19	< 19 U
100-01-6	4-Nitroaniline	96	< 96 U
534-52-1	4,6-Dinitro-2-Methylphenol	190	< 190 U
86-30-6	N-Nitrosodiphenylamine	19	< 19 U
101-55-3	4-Bromophenyl-phenylether	19	< 19 U
118-74-1	Hexachlorobenzene	19	< 19 U
87-86-5	Pentachlorophenol	190	< 190 U
85-01-8	**Phenanthrene**	**19**	**28**
86-74-8	Carbazole	19	< 19 U
120-12-7	Anthracene	19	< 19 U
84-74-2	Di-n-Butylphthalate	19	< 19 U
206-44-0	**Fluoranthene**	**19**	**24**
129-00-0	**Pyrene**	**19**	**26**
85-68-7	Butylbenzylphthalate	19	< 19 U
91-94-1	3,3'-Dichlorobenzidine	140	< 140 U
56-55-3	Benzo(a)anthracene	19	< 19 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**24**	**25 B**
218-01-9	Chrysene	19	< 19 U
117-84-0	Di-n-Octyl phthalate	19	< 19 U
50-32-8	Benzo(a)pyrene	19	< 19 U
193-39-5	Indeno(1,2,3-cd)pyrene	19	< 19 U
53-70-3	Dibenz(a,h)anthracene	19	< 19 U
191-24-2	Benzo(g,h,i)perylene	19	< 19 U
90-12-0	1-Methylnaphthalene	19	< 19 U
TOTBFA	Total Benzofluoranthenes	38	< 38 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	65.0%	2-Fluorobiphenyl	69.8%
d14-p-Terphenyl	82.6%	d4-1,2-Dichlorobenzene	63.8%
d5-Phenol	65.2%	2-Fluorophenol	62.7%
2,4,6-Tribromophenol	85.7%	d4-2-Chlorophenol	66.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-2-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15D
LIMS ID: 13-8560
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 15:51
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.61 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 11.8%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	19	< 19 U
111-44-4	Bis-(2-Chloroethyl) Ether	19	< 19 U
95-57-8	2-Chlorophenol	19	< 19 U
541-73-1	1,3-Dichlorobenzene	19	< 19 U
106-46-7	1,4-Dichlorobenzene	19	< 19 U
100-51-6	Benzyl Alcohol	19	< 19 U
95-50-1	1,2-Dichlorobenzene	19	< 19 U
95-48-7	2-Methylphenol	19	< 19 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	19	< 19 U
106-44-5	4-Methylphenol	19	< 19 U
621-64-7	N-Nitroso-Di-N-Propylamine	19	< 19 U
67-72-1	Hexachloroethane	19	< 19 U
98-95-3	Nitrobenzene	19	< 19 U
78-59-1	Isophorone	19	< 19 U
88-75-5	2-Nitrophenol	94	< 94 U
105-67-9	2,4-Dimethylphenol	38	< 38 U
65-85-0	Benzoic Acid	380	< 380 U
111-91-1	bis(2-Chloroethoxy) Methane	19	< 19 U
120-83-2	2,4-Dichlorophenol	190	< 190 U
120-82-1	1,2,4-Trichlorobenzene	19	< 19 U
91-20-3	**Naphthalene**	**19**	**38**
106-47-8	4-Chloroaniline	250	< 250 U
87-68-3	Hexachlorobutadiene	19	< 19 U
59-50-7	4-Chloro-3-methylphenol	94	< 94 U
91-57-6	**2-Methylnaphthalene**	**19**	**25**
77-47-4	Hexachlorocyclopentadiene	380	< 380 U
88-06-2	2,4,6-Trichlorophenol	94	< 94 U
95-95-4	2,4,5-Trichlorophenol	94	< 94 U
91-58-7	2-Chloronaphthalene	19	< 19 U
88-74-4	2-Nitroaniline	94	< 94 U
131-11-3	Dimethylphthalate	19	< 19 U
208-96-8	Acenaphthylene	19	< 19 U
99-09-2	3-Nitroaniline	94	< 94 U
83-32-9	Acenaphthene	19	< 19 U
51-28-5	2,4-Dinitrophenol	800	< 800 U
100-02-7	4-Nitrophenol	94	< 94 U
132-64-9	Dibenzofuran	19	< 19 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-2-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15D
LIMS ID: 13-8560
Matrix: Soil
Date Analyzed: 05/11/13 15:51

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	94	< 94 U
121-14-2	2,4-Dinitrotoluene	94	< 94 U
84-66-2	Diethylphthalate	47	< 47 U
7005-72-3	4-Chlorophenyl-phenylether	19	< 19 U
86-73-7	Fluorene	19	< 19 U
100-01-6	4-Nitroaniline	94	< 94 U
534-52-1	4,6-Dinitro-2-Methylphenol	190	< 190 U
86-30-6	N-Nitrosodiphenylamine	19	< 19 U
101-55-3	4-Bromophenyl-phenylether	19	< 19 U
118-74-1	Hexachlorobenzene	19	< 19 U
87-86-5	Pentachlorophenol	190	< 190 U
85-01-8	**Phenanthrene**	**19**	**92**
86-74-8	Carbazole	19	< 19 U
120-12-7	Anthracene	19	< 19 U
84-74-2	Di-n-Butylphthalate	19	< 19 U
206-44-0	**Fluoranthene**	**19**	**77**
129-00-0	**Pyrene**	**19**	**91**
85-68-7	Butylbenzylphthalate	19	< 19 U
91-94-1	3,3'-Dichlorobenzidine	140	< 140 U
56-55-3	**Benzo(a)anthracene**	**19**	**34**
117-81-7	**bis(2-Ethylhexyl)phthalate**	**24**	**26 B**
218-01-9	**Chrysene**	**19**	**74**
117-84-0	Di-n-Octyl phthalate	19	< 19 U
50-32-8	**Benzo(a)pyrene**	**19**	**39**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**19**	**52**
53-70-3	Dibenz(a,h)anthracene	19	< 19 U
191-24-2	**Benzo(g,h,i)perylene**	**19**	**77**
90-12-0	1-Methylnaphthalene	19	< 19 U
TOTBFA	**Total Benzofluoranthenes**	**38**	**110**

Reported in ug/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	62.0%	2-Fluorobiphenyl	66.6%
d14-p-Terphenyl	86.6%	d4-1,2-Dichlorobenzene	59.4%
d5-Phenol	62.7%	2-Fluorophenol	59.1%
2,4,6-Tribromophenol	81.9%	d4-2-Chlorophenol	62.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-3-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15E
LIMS ID: 13-8561
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 16:28
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.61 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 18.4%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	19	< 19 U
111-44-4	Bis-(2-Chloroethyl) Ether	19	< 19 U
95-57-8	2-Chlorophenol	19	< 19 U
541-73-1	1,3-Dichlorobenzene	19	< 19 U
106-46-7	1,4-Dichlorobenzene	19	< 19 U
100-51-6	Benzyl Alcohol	19	< 19 U
95-50-1	1,2-Dichlorobenzene	19	< 19 U
95-48-7	2-Methylphenol	19	< 19 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	19	< 19 U
106-44-5	4-Methylphenol	19	< 19 U
621-64-7	N-Nitroso-Di-N-Propylamine	19	< 19 U
67-72-1	Hexachloroethane	19	< 19 U
98-95-3	Nitrobenzene	19	< 19 U
78-59-1	Isophorone	19	< 19 U
88-75-5	2-Nitrophenol	94	< 94 U
105-67-9	2,4-Dimethylphenol	38	< 38 U
65-85-0	Benzoic Acid	380	< 380 U
111-91-1	bis(2-Chloroethoxy) Methane	19	< 19 U
120-83-2	2,4-Dichlorophenol	190	< 190 U
120-82-1	1,2,4-Trichlorobenzene	19	< 19 U
91-20-3	**Naphthalene**	**19**	**150**
106-47-8	4-Chloroaniline	250	< 250 U
87-68-3	Hexachlorobutadiene	19	< 19 U
59-50-7	4-Chloro-3-methylphenol	94	< 94 U
91-57-6	**2-Methylnaphthalene**	**19**	**30**
77-47-4	Hexachlorocyclopentadiene	380	< 380 U
88-06-2	2,4,6-Trichlorophenol	94	< 94 U
95-95-4	2,4,5-Trichlorophenol	94	< 94 U
91-58-7	2-Chloronaphthalene	19	< 19 U
88-74-4	2-Nitroaniline	94	< 94 U
131-11-3	Dimethylphthalate	19	< 19 U
208-96-8	Acenaphthylene	19	< 19 U
99-09-2	3-Nitroaniline	94	< 94 U
83-32-9	Acenaphthene	19	< 19 U
51-28-5	2,4-Dinitrophenol	800	< 800 U
100-02-7	4-Nitrophenol	94	< 94 U
132-64-9	**Dibenzofuran**	**19**	**40**

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-3-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15E
LIMS ID: 13-8561
Matrix: Soil
Date Analyzed: 05/11/13 16:28

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	94	< 94 U
121-14-2	2,4-Dinitrotoluene	94	< 94 U
84-66-2	Diethylphthalate	47	< 47 U
7005-72-3	4-Chlorophenyl-phenylether	19	< 19 U
86-73-7	**Fluorene**	**19**	**20**
100-01-6	4-Nitroaniline	94	< 94 U
534-52-1	4,6-Dinitro-2-Methylphenol	190	< 190 U
86-30-6	N-Nitrosodiphenylamine	19	< 19 U
101-55-3	4-Bromophenyl-phenylether	19	< 19 U
118-74-1	Hexachlorobenzene	19	< 19 U
87-86-5	Pentachlorophenol	190	< 190 U
85-01-8	**Phenanthrene**	**19**	**230**
86-74-8	Carbazole	19	< 19 U
120-12-7	**Anthracene**	**19**	**20**
84-74-2	Di-n-Butylphthalate	19	< 19 U
206-44-0	**Fluoranthene**	**19**	**200**
129-00-0	**Pyrene**	**19**	**180**
85-68-7	Butylbenzylphthalate	19	< 19 U
91-94-1	3,3'-Dichlorobenzidine	140	< 140 U
56-55-3	**Benzo(a)anthracene**	**19**	**40**
117-81-7	**bis(2-Ethylhexyl)phthalate**	**24**	**27 B**
218-01-9	**Chrysene**	**19**	**66**
117-84-0	Di-n-Octyl phthalate	19	< 19 U
50-32-8	**Benzo(a)pyrene**	**19**	**32**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**19**	**24**
53-70-3	Dibenz(a,h)anthracene	19	< 19 U
191-24-2	**Benzo(g,h,i)perylene**	**19**	**34**
90-12-0	1-Methylnaphthalene	19	< 19 U
TOTBFA	**Total Benzofluoranthenes**	**38**	**74**

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	67.4%	2-Fluorobiphenyl	71.0%
d14-p-Terphenyl	94.8%	d4-1,2-Dichlorobenzene	65.2%
d5-Phenol	69.6%	2-Fluorophenol	64.7%
2,4,6-Tribromophenol	92.3%	d4-2-Chlorophenol	69.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-8-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15F
LIMS ID: 13-8562
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 17:05
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.40 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 20.0%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	19	< 19 U
111-44-4	Bis-(2-Chloroethyl) Ether	19	< 19 U
95-57-8	2-Chlorophenol	19	< 19 U
541-73-1	1,3-Dichlorobenzene	19	< 19 U
106-46-7	1,4-Dichlorobenzene	19	< 19 U
100-51-6	Benzyl Alcohol	19	< 19 U
95-50-1	1,2-Dichlorobenzene	19	< 19 U
95-48-7	2-Methylphenol	19	< 19 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	19	< 19 U
106-44-5	4-Methylphenol	19	< 19 U
621-64-7	N-Nitroso-Di-N-Propylamine	19	< 19 U
67-72-1	Hexachloroethane	19	< 19 U
98-95-3	Nitrobenzene	19	< 19 U
78-59-1	Isophorone	19	< 19 U
88-75-5	2-Nitrophenol	96	< 96 U
105-67-9	2,4-Dimethylphenol	38	< 38 U
65-85-0	Benzoic Acid	380	< 380 U
111-91-1	bis(2-Chloroethoxy) Methane	19	< 19 U
120-83-2	2,4-Dichlorophenol	190	< 190 U
120-82-1	1,2,4-Trichlorobenzene	19	< 19 U
91-20-3	Naphthalene	19	< 19 U
106-47-8	4-Chloroaniline	260	< 260 U
87-68-3	Hexachlorobutadiene	19	< 19 U
59-50-7	4-Chloro-3-methylphenol	96	< 96 U
91-57-6	2-Methylnaphthalene	19	< 19 U
77-47-4	Hexachlorocyclopentadiene	380	< 380 U
88-06-2	2,4,6-Trichlorophenol	96	< 96 U
95-95-4	2,4,5-Trichlorophenol	96	< 96 U
91-58-7	2-Chloronaphthalene	19	< 19 U
88-74-4	2-Nitroaniline	96	< 96 U
131-11-3	Dimethylphthalate	19	< 19 U
208-96-8	Acenaphthylene	19	< 19 U
99-09-2	3-Nitroaniline	96	< 96 U
83-32-9	Acenaphthene	19	< 19 U
51-28-5	2,4-Dinitrophenol	820	< 820 U
100-02-7	4-Nitrophenol	96	< 96 U
132-64-9	Dibenzofuran	19	< 19 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-8-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15F
LIMS ID: 13-8562
Matrix: Soil
Date Analyzed: 05/11/13 17:05

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	96	< 96 U
121-14-2	2,4-Dinitrotoluene	96	< 96 U
84-66-2	Diethylphthalate	48	< 48 U
7005-72-3	4-Chlorophenyl-phenylether	19	< 19 U
86-73-7	Fluorene	19	< 19 U
100-01-6	4-Nitroaniline	96	< 96 U
534-52-1	4,6-Dinitro-2-Methylphenol	190	< 190 U
86-30-6	N-Nitrosodiphenylamine	19	< 19 U
101-55-3	4-Bromophenyl-phenylether	19	< 19 U
118-74-1	Hexachlorobenzene	19	< 19 U
87-86-5	Pentachlorophenol	190	< 190 U
85-01-8	Phenanthrene	19	< 19 U
86-74-8	Carbazole	19	< 19 U
120-12-7	Anthracene	19	< 19 U
84-74-2	Di-n-Butylphthalate	19	< 19 U
206-44-0	Fluoranthene	19	< 19 U
129-00-0	Pyrene	19	< 19 U
85-68-7	Butylbenzylphthalate	19	< 19 U
91-94-1	3,3'-Dichlorobenzidine	140	< 140 U
56-55-3	Benzo(a)anthracene	19	< 19 U
117-81-7	bis(2-Ethylhexyl)phthalate	24	< 24 U
218-01-9	Chrysene	19	< 19 U
117-84-0	Di-n-Octyl phthalate	19	< 19 U
50-32-8	Benzo(a)pyrene	19	< 19 U
193-39-5	Indeno(1,2,3-cd)pyrene	19	< 19 U
53-70-3	Dibenz(a,h)anthracene	19	< 19 U
191-24-2	Benzo(g,h,i)perylene	19	< 19 U
90-12-0	1-Methylnaphthalene	19	< 19 U
TOTBFA	Total Benzofluoranthenes	38	< 38 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	64.6%	2-Fluorobiphenyl	66.6%
d14-p-Terphenyl	83.8%	d4-1,2-Dichlorobenzene	60.2%
d5-Phenol	60.9%	2-Fluorophenol	59.5%
2,4,6-Tribromophenol	85.9%	d4-2-Chlorophenol	62.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-7-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15G
LIMS ID: 13-8563
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 17:41
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.88 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 9.5%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	18	< 18 U
111-44-4	Bis-(2-Chloroethyl) Ether	18	< 18 U
95-57-8	2-Chlorophenol	18	< 18 U
541-73-1	1,3-Dichlorobenzene	18	< 18 U
106-46-7	1,4-Dichlorobenzene	18	< 18 U
100-51-6	Benzyl Alcohol	18	< 18 U
95-50-1	1,2-Dichlorobenzene	18	< 18 U
95-48-7	2-Methylphenol	18	< 18 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	18	< 18 U
106-44-5	4-Methylphenol	18	< 18 U
621-64-7	N-Nitroso-Di-N-Propylamine	18	< 18 U
67-72-1	Hexachloroethane	18	< 18 U
98-95-3	Nitrobenzene	18	< 18 U
78-59-1	Isophorone	18	< 18 U
88-75-5	2-Nitrophenol	92	< 92 U
105-67-9	2,4-Dimethylphenol	37	< 37 U
65-85-0	Benzoic Acid	370	< 370 U
111-91-1	bis(2-Chloroethoxy) Methane	18	< 18 U
120-83-2	2,4-Dichlorophenol	180	< 180 U
120-82-1	1,2,4-Trichlorobenzene	18	< 18 U
91-20-3	**Naphthalene**	**18**	**28**
106-47-8	4-Chloroaniline	250	< 250 U
87-68-3	Hexachlorobutadiene	18	< 18 U
59-50-7	4-Chloro-3-methylphenol	92	< 92 U
91-57-6	2-Methylnaphthalene	18	< 18 U
77-47-4	Hexachlorocyclopentadiene	370	< 370 U
88-06-2	2,4,6-Trichlorophenol	92	< 92 U
95-95-4	2,4,5-Trichlorophenol	92	< 92 U
91-58-7	2-Chloronaphthalene	18	< 18 U
88-74-4	2-Nitroaniline	92	< 92 U
131-11-3	Dimethylphthalate	18	< 18 U
208-96-8	Acenaphthylene	18	< 18 U
99-09-2	3-Nitroaniline	92	< 92 U
83-32-9	Acenaphthene	18	< 18 U
51-28-5	2,4-Dinitrophenol	780	< 780 U
100-02-7	4-Nitrophenol	92	< 92 U
132-64-9	Dibenzofuran	18	< 18 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-7-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15G
LIMS ID: 13-8563
Matrix: Soil
Date Analyzed: 05/11/13 17:41

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	92	< 92 U
121-14-2	2,4-Dinitrotoluene	92	< 92 U
84-66-2	Diethylphthalate	46	< 46 U
7005-72-3	4-Chlorophenyl-phenylether	18	< 18 U
86-73-7	Fluorene	18	< 18 U
100-01-6	4-Nitroaniline	92	< 92 U
534-52-1	4,6-Dinitro-2-Methylphenol	180	< 180 U
86-30-6	N-Nitrosodiphenylamine	18	< 18 U
101-55-3	4-Bromophenyl-phenylether	18	< 18 U
118-74-1	Hexachlorobenzene	18	< 18 U
87-86-5	Pentachlorophenol	180	< 180 U
85-01-8	**Phenanthrene**	**18**	**57**
86-74-8	Carbazole	18	< 18 U
120-12-7	Anthracene	18	< 18 U
84-74-2	Di-n-Butylphthalate	18	< 18 U
206-44-0	**Fluoranthene**	**18**	**130**
129-00-0	**Pyrene**	**18**	**120**
85-68-7	Butylbenzylphthalate	18	< 18 U
91-94-1	3,3'-Dichlorobenzidine	140	< 140 U
56-55-3	**Benzo(a)anthracene**	**18**	**25**
117-81-7	bis(2-Ethylhexyl)phthalate	23	< 23 U
218-01-9	**Chrysene**	**18**	**57**
117-84-0	Di-n-Octyl phthalate	18	< 18 U
50-32-8	**Benzo(a)pyrene**	**18**	**24**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**18**	**21**
53-70-3	Dibenz(a,h)anthracene	18	< 18 U
191-24-2	**Benzo(g,h,i)perylene**	**18**	**30**
90-12-0	1-Methylnaphthalene	18	< 18 U
TOTBFA	**Total Benzofluoranthenes**	**37**	**68**

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	66.2%	2-Fluorobiphenyl	69.4%
d14-p-Terphenyl	86.8%	d4-1,2-Dichlorobenzene	61.8%
d5-Phenol	63.1%	2-Fluorophenol	59.7%
2,4,6-Tribromophenol	87.3%	d4-2-Chlorophenol	63.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-4-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15H
LIMS ID: 13-8564
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 18:18
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.47 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 13.0%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	19	< 19 U
111-44-4	Bis-(2-Chloroethyl) Ether	19	< 19 U
95-57-8	2-Chlorophenol	19	< 19 U
541-73-1	1,3-Dichlorobenzene	19	< 19 U
106-46-7	1,4-Dichlorobenzene	19	< 19 U
100-51-6	Benzyl Alcohol	19	< 19 U
95-50-1	1,2-Dichlorobenzene	19	< 19 U
95-48-7	2-Methylphenol	19	< 19 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	19	< 19 U
106-44-5	4-Methylphenol	19	< 19 U
621-64-7	N-Nitroso-Di-N-Propylamine	19	< 19 U
67-72-1	Hexachloroethane	19	< 19 U
98-95-3	Nitrobenzene	19	< 19 U
78-59-1	Isophorone	19	< 19 U
88-75-5	2-Nitrophenol	96	< 96 U
105-67-9	2,4-Dimethylphenol	38	< 38 U
65-85-0	Benzoic Acid	380	< 380 U
111-91-1	bis(2-Chloroethoxy) Methane	19	< 19 U
120-83-2	2,4-Dichlorophenol	190	< 190 U
120-82-1	1,2,4-Trichlorobenzene	19	< 19 U
91-20-3	Naphthalene	19	< 19 U
106-47-8	4-Chloroaniline	260	< 260 U
87-68-3	Hexachlorobutadiene	19	< 19 U
59-50-7	4-Chloro-3-methylphenol	96	< 96 U
91-57-6	2-Methylnaphthalene	19	< 19 U
77-47-4	Hexachlorocyclopentadiene	380	< 380 U
88-06-2	2,4,6-Trichlorophenol	96	< 96 U
95-95-4	2,4,5-Trichlorophenol	96	< 96 U
91-58-7	2-Chloronaphthalene	19	< 19 U
88-74-4	2-Nitroaniline	96	< 96 U
131-11-3	**Dimethylphthalate**	**19**	**20**
208-96-8	Acenaphthylene	19	< 19 U
99-09-2	3-Nitroaniline	96	< 96 U
83-32-9	Acenaphthene	19	< 19 U
51-28-5	2,4-Dinitrophenol	810	< 810 U
100-02-7	4-Nitrophenol	96	< 96 U
132-64-9	Dibenzofuran	19	< 19 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-4-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15H
LIMS ID: 13-8564
Matrix: Soil
Date Analyzed: 05/11/13 18:18

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	96	< 96 U
121-14-2	2,4-Dinitrotoluene	96	< 96 U
84-66-2	Diethylphthalate	48	< 48 U
7005-72-3	4-Chlorophenyl-phenylether	19	< 19 U
86-73-7	Fluorene	19	< 19 U
100-01-6	4-Nitroaniline	96	< 96 U
534-52-1	4,6-Dinitro-2-Methylphenol	190	< 190 U
86-30-6	N-Nitrosodiphenylamine	19	< 19 U
101-55-3	4-Bromophenyl-phenylether	19	< 19 U
118-74-1	Hexachlorobenzene	19	< 19 U
87-86-5	Pentachlorophenol	190	< 190 U
85-01-8	**Phenanthrene**	**19**	**32**
86-74-8	Carbazole	19	< 19 U
120-12-7	Anthracene	19	< 19 U
84-74-2	Di-n-Butylphthalate	19	< 19 U
206-44-0	**Fluoranthene**	**19**	**35**
129-00-0	**Pyrene**	**19**	**31**
85-68-7	Butylbenzylphthalate	19	< 19 U
91-94-1	3,3'-Dichlorobenzidine	140	< 140 U
56-55-3	Benzo(a)anthracene	19	< 19 U
117-81-7	bis(2-Ethylhexyl)phthalate	24	< 24 U
218-01-9	Chrysene	19	< 19 U
117-84-0	Di-n-Octyl phthalate	19	< 19 U
50-32-8	Benzo(a)pyrene	19	< 19 U
193-39-5	Indeno(1,2,3-cd)pyrene	19	< 19 U
53-70-3	Dibenz(a,h)anthracene	19	< 19 U
191-24-2	Benzo(g,h,i)perylene	19	< 19 U
90-12-0	1-Methylnaphthalene	19	< 19 U
TOTBFA	Total Benzofluoranthenes	38	< 38 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	56.0%	2-Fluorobiphenyl	58.4%
d14-p-Terphenyl	84.0%	d4-1,2-Dichlorobenzene	53.8%
d5-Phenol	54.7%	2-Fluorophenol	52.7%
2,4,6-Tribromophenol	75.3%	d4-2-Chlorophenol	56.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP2-4-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15I
LIMS ID: 13-8565
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 20:09
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.20 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 15.1%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	20	< 20 U
111-44-4	Bis-(2-Chloroethyl) Ether	20	< 20 U
95-57-8	2-Chlorophenol	20	< 20 U
541-73-1	1,3-Dichlorobenzene	20	< 20 U
106-46-7	1,4-Dichlorobenzene	20	< 20 U
100-51-6	Benzyl Alcohol	20	< 20 U
95-50-1	1,2-Dichlorobenzene	20	< 20 U
95-48-7	2-Methylphenol	20	< 20 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	20	< 20 U
106-44-5	4-Methylphenol	20	< 20 U
621-64-7	N-Nitroso-Di-N-Propylamine	20	< 20 U
67-72-1	Hexachloroethane	20	< 20 U
98-95-3	Nitrobenzene	20	< 20 U
78-59-1	Isophorone	20	< 20 U
88-75-5	2-Nitrophenol	98	< 98 U
105-67-9	2,4-Dimethylphenol	39	< 39 U
65-85-0	Benzoic Acid	390	< 390 U
111-91-1	bis(2-Chloroethoxy) Methane	20	< 20 U
120-83-2	2,4-Dichlorophenol	200	< 200 U
120-82-1	1,2,4-Trichlorobenzene	20	< 20 U
91-20-3	**Naphthalene**	**20**	**43**
106-47-8	4-Chloroaniline	260	< 260 U
87-68-3	Hexachlorobutadiene	20	< 20 U
59-50-7	4-Chloro-3-methylphenol	98	< 98 U
91-57-6	2-Methylnaphthalene	20	< 20 U
77-47-4	Hexachlorocyclopentadiene	390	< 390 U
88-06-2	2,4,6-Trichlorophenol	98	< 98 U
95-95-4	2,4,5-Trichlorophenol	98	< 98 U
91-58-7	2-Chloronaphthalene	20	< 20 U
88-74-4	2-Nitroaniline	98	< 98 U
131-11-3	Dimethylphthalate	20	< 20 U
208-96-8	Acenaphthylene	20	< 20 U
99-09-2	3-Nitroaniline	98	< 98 U
83-32-9	Acenaphthene	20	< 20 U
51-28-5	2,4-Dinitrophenol	830	< 830 U
100-02-7	4-Nitrophenol	98	< 98 U
132-64-9	Dibenzofuran	20	< 20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP2-4-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15I
LIMS ID: 13-8565
Matrix: Soil
Date Analyzed: 05/11/13 20:09

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	98	< 98 U
121-14-2	2,4-Dinitrotoluene	98	< 98 U
84-66-2	Diethylphthalate	49	< 49 U
7005-72-3	4-Chlorophenyl-phenylether	20	< 20 U
86-73-7	Fluorene	20	< 20 U
100-01-6	4-Nitroaniline	98	< 98 U
534-52-1	4,6-Dinitro-2-Methylphenol	200	< 200 U
86-30-6	N-Nitrosodiphenylamine	20	< 20 U
101-55-3	4-Bromophenyl-phenylether	20	< 20 U
118-74-1	Hexachlorobenzene	20	< 20 U
87-86-5	Pentachlorophenol	200	< 200 U
85-01-8	**Phenanthrene**	**20**	**120**
86-74-8	Carbazole	20	< 20 U
120-12-7	Anthracene	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
206-44-0	**Fluoranthene**	**20**	**160**
129-00-0	**Pyrene**	**20**	**150**
85-68-7	Butylbenzylphthalate	20	< 20 U
91-94-1	3,3'-Dichlorobenzidine	150	< 150 U
56-55-3	**Benzo(a)anthracene**	**20**	**47**
117-81-7	**bis(2-Ethylhexyl)phthalate**	**24**	**52 B**
218-01-9	**Chrysene**	**20**	**67**
117-84-0	Di-n-Octyl phthalate	20	< 20 U
50-32-8	**Benzo(a)pyrene**	**20**	**58**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**20**	**41**
53-70-3	Dibenz(a,h)anthracene	20	< 20 U
191-24-2	**Benzo(g,h,i)perylene**	**20**	**53**
90-12-0	1-Methylnaphthalene	20	< 20 U
TOTBFA	**Total Benzofluoranthenes**	**39**	**100**

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	64.2%	2-Fluorobiphenyl	67.8%
d14-p-Terphenyl	91.2%	d4-1,2-Dichlorobenzene	62.2%
d5-Phenol	61.3%	2-Fluorophenol	61.5%
2,4,6-Tribromophenol	81.9%	d4-2-Chlorophenol	64.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP2-1-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15J
LIMS ID: 13-8566
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 20:45
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.79 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 10.4%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	18	< 18 U
111-44-4	Bis-(2-Chloroethyl) Ether	18	< 18 U
95-57-8	2-Chlorophenol	18	< 18 U
541-73-1	1,3-Dichlorobenzene	18	< 18 U
106-46-7	1,4-Dichlorobenzene	18	< 18 U
100-51-6	Benzyl Alcohol	18	< 18 U
95-50-1	1,2-Dichlorobenzene	18	< 18 U
95-48-7	2-Methylphenol	18	< 18 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	18	< 18 U
106-44-5	4-Methylphenol	18	< 18 U
621-64-7	N-Nitroso-Di-N-Propylamine	18	< 18 U
67-72-1	Hexachloroethane	18	< 18 U
98-95-3	Nitrobenzene	18	< 18 U
78-59-1	Isophorone	18	< 18 U
88-75-5	2-Nitrophenol	93	< 93 U
105-67-9	2,4-Dimethylphenol	37	< 37 U
65-85-0	Benzoic Acid	370	< 370 U
111-91-1	bis(2-Chloroethoxy) Methane	18	< 18 U
120-83-2	2,4-Dichlorophenol	180	< 180 U
120-82-1	1,2,4-Trichlorobenzene	18	< 18 U
91-20-3	**Naphthalene**	**18**	**31**
106-47-8	4-Chloroaniline	250	< 250 U
87-68-3	Hexachlorobutadiene	18	< 18 U
59-50-7	4-Chloro-3-methylphenol	93	< 93 U
91-57-6	**2-Methylnaphthalene**	**18**	**20**
77-47-4	Hexachlorocyclopentadiene	370	< 370 U
88-06-2	2,4,6-Trichlorophenol	93	< 93 U
95-95-4	2,4,5-Trichlorophenol	93	< 93 U
91-58-7	2-Chloronaphthalene	18	< 18 U
88-74-4	2-Nitroaniline	93	< 93 U
131-11-3	**Dimethylphthalate**	**18**	**56**
208-96-8	Acenaphthylene	18	< 18 U
99-09-2	3-Nitroaniline	93	< 93 U
83-32-9	Acenaphthene	18	< 18 U
51-28-5	2,4-Dinitrophenol	790	< 790 U
100-02-7	4-Nitrophenol	93	< 93 U
132-64-9	**Dibenzofuran**	**18**	**23**

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP2-1-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15J
LIMS ID: 13-8566
Matrix: Soil
Date Analyzed: 05/11/13 20:45

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	93	< 93 U
121-14-2	2,4-Dinitrotoluene	93	< 93 U
84-66-2	Diethylphthalate	46	< 46 U
7005-72-3	4-Chlorophenyl-phenylether	18	< 18 U
86-73-7	Fluorene	18	< 18 U
100-01-6	4-Nitroaniline	93	< 93 U
534-52-1	4,6-Dinitro-2-Methylphenol	180	< 180 U
86-30-6	N-Nitrosodiphenylamine	18	< 18 U
101-55-3	4-Bromophenyl-phenylether	18	< 18 U
118-74-1	Hexachlorobenzene	18	< 18 U
87-86-5	Pentachlorophenol	180	< 180 U
85-01-8	**Phenanthrene**	**18**	**100**
86-74-8	**Carbazole**	**18**	**20**
120-12-7	**Anthracene**	**18**	**21**
84-74-2	Di-n-Butylphthalate	18	< 18 U
206-44-0	**Fluoranthene**	**18**	**130**
129-00-0	**Pyrene**	**18**	**110**
85-68-7	Butylbenzylphthalate	18	< 18 U
91-94-1	3,3'-Dichlorobenzidine	140	< 140 U
56-55-3	**Benzo(a)anthracene**	**18**	**56**
117-81-7	bis(2-Ethylhexyl)phthalate	23	< 23 U
218-01-9	**Chrysene**	**18**	**99**
117-84-0	Di-n-Octyl phthalate	18	< 18 U
50-32-8	**Benzo(a)pyrene**	**18**	**44**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**18**	**37**
53-70-3	Dibenz(a,h)anthracene	18	< 18 U
191-24-2	**Benzo(g,h,i)perylene**	**18**	**41**
90-12-0	1-Methylnaphthalene	18	< 18 U
TOTBFA	**Total Benzofluoranthenes**	**37**	**130**

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	66.0%	2-Fluorobiphenyl	70.0%
d14-p-Terphenyl	81.0%	d4-1,2-Dichlorobenzene	64.4%
d5-Phenol	64.0%	2-Fluorophenol	63.6%
2,4,6-Tribromophenol	83.3%	d4-2-Chlorophenol	66.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP2-2-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15K
LIMS ID: 13-8567
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 21:22
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.49 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 12.9%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	19	< 19 U
111-44-4	Bis-(2-Chloroethyl) Ether	19	< 19 U
95-57-8	2-Chlorophenol	19	< 19 U
541-73-1	1,3-Dichlorobenzene	19	< 19 U
106-46-7	1,4-Dichlorobenzene	19	< 19 U
100-51-6	Benzyl Alcohol	19	< 19 U
95-50-1	1,2-Dichlorobenzene	19	< 19 U
95-48-7	2-Methylphenol	19	< 19 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	19	< 19 U
106-44-5	4-Methylphenol	19	< 19 U
621-64-7	N-Nitroso-Di-N-Propylamine	19	< 19 U
67-72-1	Hexachloroethane	19	< 19 U
98-95-3	Nitrobenzene	19	< 19 U
78-59-1	Isophorone	19	< 19 U
88-75-5	2-Nitrophenol	95	< 95 U
105-67-9	2,4-Dimethylphenol	38	< 38 U
65-85-0	Benzoic Acid	380	< 380 U
111-91-1	bis(2-Chloroethoxy) Methane	19	< 19 U
120-83-2	2,4-Dichlorophenol	190	< 190 U
120-82-1	1,2,4-Trichlorobenzene	19	< 19 U
91-20-3	**Naphthalene**	**19**	**58**
106-47-8	4-Chloroaniline	260	< 260 U
87-68-3	Hexachlorobutadiene	19	< 19 U
59-50-7	4-Chloro-3-methylphenol	95	< 95 U
91-57-6	**2-Methylnaphthalene**	**19**	**24**
77-47-4	Hexachlorocyclopentadiene	380	< 380 U
88-06-2	2,4,6-Trichlorophenol	95	< 95 U
95-95-4	2,4,5-Trichlorophenol	95	< 95 U
91-58-7	2-Chloronaphthalene	19	< 19 U
88-74-4	2-Nitroaniline	95	< 95 U
131-11-3	Dimethylphthalate	19	< 19 U
208-96-8	Acenaphthylene	19	< 19 U
99-09-2	3-Nitroaniline	95	< 95 U
83-32-9	Acenaphthene	19	< 19 U
51-28-5	2,4-Dinitrophenol	810	< 810 U
100-02-7	4-Nitrophenol	95	< 95 U
132-64-9	**Dibenzofuran**	**19**	**20**

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP2-2-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15K
LIMS ID: 13-8567
Matrix: Soil
Date Analyzed: 05/11/13 21:22

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	95	< 95 U
121-14-2	2,4-Dinitrotoluene	95	< 95 U
84-66-2	Diethylphthalate	48	< 48 U
7005-72-3	4-Chlorophenyl-phenylether	19	< 19 U
86-73-7	Fluorene	19	< 19 U
100-01-6	4-Nitroaniline	95	< 95 U
534-52-1	4,6-Dinitro-2-Methylphenol	190	< 190 U
86-30-6	N-Nitrosodiphenylamine	19	< 19 U
101-55-3	4-Bromophenyl-phenylether	19	< 19 U
118-74-1	Hexachlorobenzene	19	< 19 U
87-86-5	Pentachlorophenol	190	< 190 U
85-01-8	**Phenanthrene**	**19**	**130**
86-74-8	Carbazole	19	< 19 U
120-12-7	Anthracene	19	< 19 U
84-74-2	Di-n-Butylphthalate	19	< 19 U
206-44-0	**Fluoranthene**	**19**	**140**
129-00-0	**Pyrene**	**19**	**140**
85-68-7	Butylbenzylphthalate	19	< 19 U
91-94-1	3,3'-Dichlorobenzidine	140	< 140 U
56-55-3	**Benzo(a)anthracene**	**19**	**44**
117-81-7	bis(2-Ethylhexyl)phthalate	24	< 24 U
218-01-9	**Chrysene**	**19**	**62**
117-84-0	Di-n-Octyl phthalate	19	< 19 U
50-32-8	**Benzo(a)pyrene**	**19**	**52**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**19**	**35**
53-70-3	Dibenz(a,h)anthracene	19	< 19 U
191-24-2	**Benzo(g,h,i)perylene**	**19**	**46**
90-12-0	1-Methylnaphthalene	19	< 19 U
TOTBFA	**Total Benzofluoranthenes**	**38**	**92**

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	61.2%	2-Fluorobiphenyl	63.2%
d14-p-Terphenyl	83.8%	d4-1,2-Dichlorobenzene	60.0%
d5-Phenol	58.3%	2-Fluorophenol	57.7%
2,4,6-Tribromophenol	75.1%	d4-2-Chlorophenol	60.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP2-3-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15L
LIMS ID: 13-8568
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 21:59
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.23 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 21.3%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	20	< 20 U
111-44-4	Bis-(2-Chloroethyl) Ether	20	< 20 U
95-57-8	2-Chlorophenol	20	< 20 U
541-73-1	1,3-Dichlorobenzene	20	< 20 U
106-46-7	1,4-Dichlorobenzene	20	< 20 U
100-51-6	Benzyl Alcohol	20	< 20 U
95-50-1	1,2-Dichlorobenzene	20	< 20 U
95-48-7	2-Methylphenol	20	< 20 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	20	< 20 U
106-44-5	4-Methylphenol	20	< 20 U
621-64-7	N-Nitroso-Di-N-Propylamine	20	< 20 U
67-72-1	Hexachloroethane	20	< 20 U
98-95-3	Nitrobenzene	20	< 20 U
78-59-1	Isophorone	20	< 20 U
88-75-5	2-Nitrophenol	98	< 98 U
105-67-9	2,4-Dimethylphenol	39	< 39 U
65-85-0	Benzoic Acid	390	< 390 U
111-91-1	bis(2-Chloroethoxy) Methane	20	< 20 U
120-83-2	2,4-Dichlorophenol	200	< 200 U
120-82-1	1,2,4-Trichlorobenzene	20	< 20 U
91-20-3	**Naphthalene**	**20**	**140**
106-47-8	4-Chloroaniline	260	< 260 U
87-68-3	Hexachlorobutadiene	20	< 20 U
59-50-7	4-Chloro-3-methylphenol	98	< 98 U
91-57-6	**2-Methylnaphthalene**	**20**	**35**
77-47-4	Hexachlorocyclopentadiene	390	< 390 U
88-06-2	2,4,6-Trichlorophenol	98	< 98 U
95-95-4	2,4,5-Trichlorophenol	98	< 98 U
91-58-7	2-Chloronaphthalene	20	< 20 U
88-74-4	2-Nitroaniline	98	< 98 U
131-11-3	Dimethylphthalate	20	< 20 U
208-96-8	Acenaphthylene	20	< 20 U
99-09-2	3-Nitroaniline	98	< 98 U
83-32-9	**Acenaphthene**	**20**	**41**
51-28-5	2,4-Dinitrophenol	830	< 830 U
100-02-7	4-Nitrophenol	98	< 98 U
132-64-9	**Dibenzofuran**	**20**	**56**

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP2-3-(1-5)**
Extraction Method: SW3546 **SAMPLE**

Lab Sample ID: WN15L
LIMS ID: 13-8568
Matrix: Soil
Date Analyzed: 05/11/13 21:59

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	98	< 98 U
121-14-2	2,4-Dinitrotoluene	98	< 98 U
84-66-2	Diethylphthalate	49	< 49 U
7005-72-3	4-Chlorophenyl-phenylether	20	< 20 U
86-73-7	**Fluorene**	**20**	**42**
100-01-6	4-Nitroaniline	98	< 98 U
534-52-1	4,6-Dinitro-2-Methylphenol	200	< 200 U
86-30-6	N-Nitrosodiphenylamine	20	< 20 U
101-55-3	4-Bromophenyl-phenylether	20	< 20 U
118-74-1	Hexachlorobenzene	20	< 20 U
87-86-5	Pentachlorophenol	200	< 200 U
85-01-8	**Phenanthrene**	**20**	**290**
86-74-8	**Carbazole**	**20**	**29**
120-12-7	**Anthracene**	**20**	**34**
84-74-2	Di-n-Butylphthalate	20	< 20 U
206-44-0	**Fluoranthene**	**20**	**250**
129-00-0	**Pyrene**	**20**	**240**
85-68-7	Butylbenzylphthalate	20	< 20 U
91-94-1	3,3'-Dichlorobenzidine	150	< 150 U
56-55-3	**Benzo(a)anthracene**	**20**	**63**
117-81-7	bis(2-Ethylhexyl)phthalate	24	< 24 U
218-01-9	**Chrysene**	**20**	**89**
117-84-0	Di-n-Octyl phthalate	20	< 20 U
50-32-8	**Benzo(a)pyrene**	**20**	**58**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**20**	**44**
53-70-3	Dibenz(a,h)anthracene	20	< 20 U
191-24-2	**Benzo(g,h,i)perylene**	**20**	**55**
90-12-0	**1-Methylnaphthalene**	**20**	**22**
TOTBFA	**Total Benzofluoranthenes**	**39**	**110**

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	65.4%	2-Fluorobiphenyl	70.6%
d14-p-Terphenyl	97.8%	d4-1,2-Dichlorobenzene	62.4%
d5-Phenol	64.9%	2-Fluorophenol	63.3%
2,4,6-Tribromophenol	86.5%	d4-2-Chlorophenol	66.0%

ANALYTICAL RESOURCES INCORPORATED

SW8270 SEMIVOLATILES SOIL/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

Client ID	NBZ	FBP	TPH	DCB	PHL	2FP	TBP	2CP	TOT OUT
SP1-5-(1-5)	65.6%	69.0%	97.6%	62.2%	64.1%	60.7%	84.1%	65.5%	0
SP1-1-(1-5)	64.0%	67.2%	95.2%	61.4%	63.5%	60.0%	89.6%	65.7%	0
SP1-6-(1-5)	65.0%	69.8%	82.6%	63.8%	65.2%	62.7%	85.7%	66.0%	0
SP1-2-(1-5)	62.0%	66.6%	86.6%	59.4%	62.7%	59.1%	81.9%	62.9%	0
SP1-3-(1-5)	67.4%	71.0%	94.8%	65.2%	69.6%	64.7%	92.3%	69.3%	0
SP1-8-(1-5)	64.6%	66.6%	83.8%	60.2%	60.9%	59.5%	85.9%	62.9%	0
SP1-7-(1-5)	66.2%	69.4%	86.8%	61.8%	63.1%	59.7%	87.3%	63.7%	0
MB-043013	63.2%	63.4%	78.6%	62.6%	60.8%	58.1%	54.9%	61.6%	0
LCS-043013	71.6%	74.6%	88.4%	70.2%	74.9%	70.4%	85.5%	73.2%	0
SP1-4-(1-5)	56.0%	58.4%	84.0%	53.8%	54.7%	52.7%	75.3%	56.1%	0
SP1-4-(1-5) MS	66.8%	68.4%	92.0%	63.6%	67.7%	65.2%	91.2%	67.1%	0
SP1-4-(1-5) MSD	73.2%	74.2%	104%	68.0%	71.3%	69.2%	94.3%	72.1%	0
SP2-4-(1-5)	64.2%	67.8%	91.2%	62.2%	61.3%	61.5%	81.9%	64.7%	0
SP2-1-(1-5)	66.0%	70.0%	81.0%	64.4%	64.0%	63.6%	83.3%	66.1%	0
SP2-2-(1-5)	61.2%	63.2%	83.8%	60.0%	58.3%	57.7%	75.1%	60.5%	0
SP2-3-(1-5)	65.4%	70.6%	97.8%	62.4%	64.9%	63.3%	86.5%	66.0%	0

	LCS/MB LIMITS	QC LIMITS
(NBZ) = d5-Nitrobenzene	(33-102)	(30-100)
(FBP) = 2-Fluorobiphenyl	(35-101)	(35-100)
(TPH) = d14-p-Terphenyl	(42-124)	(37-111)
(DCB) = d4-1,2-Dichlorobenzene	(37-100)	(32-100)
(PHL) = d5-Phenol	(32-101)	(29-100)
(2FP) = 2-Fluorophenol	(32-100)	(27-100)
(TBP) = 2,4,6-Tribromophenol	(23-133)	(24-134)
(2CP) = d4-2-Chlorophenol	(37-100)	(31-100)

Prep Method: SW3546
Log Number Range: 13-8557 to 13-8568

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-4-(1-5)**
 MS/MSD

Lab Sample ID: WN15H
LIMS ID: 13-8564
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted MS/MSD: 04/30/13

Sample Amount MS: 10.45 g-dry-wt
MSD: 10.46 g-dry-wt

Date Analyzed MS: 05/11/13 18:55
MSD: 05/11/13 19:32

Final Extract Volume MS: 1.0 mL
MSD: 1.0 mL

Instrument/Analyst MS: NT10/VTS
MSD: NT10/VTS

Dilution Factor MS: 1.00
MSD: 1.00

GPC Cleanup: Yes

Percent Moisture: 13.0 %

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Phenol	< 19 U	313	478	65.5%	332	478	69.5%	5.9%
Bis-(2-Chloroethyl) Ether	< 19 U	330	478	69.0%	360	478	75.3%	8.7%
2-Chlorophenol	< 19 U	296	478	61.9%	315	478	65.9%	6.2%
1,3-Dichlorobenzene	< 19 U	312	478	65.3%	333	478	69.7%	6.5%
1,4-Dichlorobenzene	< 19 U	320	478	66.9%	335	478	70.1%	4.6%
Benzyl Alcohol	< 19 U	354	478	74.1%	369	478	77.2%	4.1%
1,2-Dichlorobenzene	< 19 U	320	478	66.9%	338	478	70.7%	5.5%
2-Methylphenol	< 19 U	289	478	60.5%	304	478	63.6%	5.1%
2,2'-Oxybis(1-Chloropropane)	< 19 U	344	478	72.0%	356	478	74.5%	3.4%
4-Methylphenol	< 19 U	592	957	61.9%	628	956	65.7%	5.9%
N-Nitroso-Di-N-Propylamine	< 19 U	328	478	68.6%	351	478	73.4%	6.8%
Hexachloroethane	< 19 U	325	478	68.0%	341	478	71.3%	4.8%
Nitrobenzene	< 19 U	334	478	69.9%	366	478	76.6%	9.1%
Isophorone	< 19 U	328	478	68.6%	356	478	74.5%	8.2%
2-Nitrophenol	< 96 U	307	478	64.2%	331	478	69.2%	7.5%
2,4-Dimethylphenol	< 38 U	1000	1440	69.4%	1110	1430	77.6%	10.4%
Benzoic Acid	< 380 U	1460 Q	2630	55.5%	1510 Q	2630	57.4%	3.4%
bis(2-Chloroethoxy) Methane	< 19 U	359	478	75.1%	391	478	81.8%	8.5%
2,4-Dichlorophenol	< 190 U	898	1440	62.4%	960	1430	67.1%	6.7%
1,2,4-Trichlorobenzene	< 19 U	325	478	68.0%	387	478	81.0%	17.4%
Naphthalene	< 19 U	321	478	67.2%	352	478	73.6%	9.2%
4-Chloroaniline	< 260 U	190 J	1440	13.2%	172 J	1430	12.0%	9.9%
Hexachlorobutadiene	< 19 U	335	478	70.1%	366	478	76.6%	8.8%
4-Chloro-3-methylphenol	< 96 U	1190	1440	82.6%	1270	1430	88.8%	6.5%
2-Methylnaphthalene	< 19 U	337	478	70.5%	364	478	76.2%	7.7%
Hexachlorocyclopentadiene	< 380 U	479	1440	33.3%	550	1430	38.5%	13.8%
2,4,6-Trichlorophenol	< 96 U	1090	1440	75.7%	1180	1430	82.5%	7.9%
2,4,5-Trichlorophenol	< 96 U	1160	1440	80.6%	1250	1430	87.4%	7.5%
2-Chloronaphthalene	< 19 U	359	478	75.1%	397	478	83.1%	10.1%
2-Nitroaniline	< 96 U	1340	1440	93.1%	1450	1430	101%	7.9%
Dimethylphthalate	20	432	478	86.2%	464	478	92.9%	7.1%
Acenaphthylene	< 19 U	320	478	66.9%	350	478	73.2%	9.0%
3-Nitroaniline	< 96 U	411	1440	28.5%	407	1430	28.5%	1.0%
Acenaphthene	< 19 U	346	478	72.4%	376	478	78.7%	8.3%
2,4-Dinitrophenol	< 810 U	1360	2630	51.7%	1490	2630	56.7%	9.1%
4-Nitrophenol	< 96 U	1200	1440	83.3%	1280	1430	89.5%	6.5%
Dibenzofuran	< 19 U	368	478	77.0%	402	478	84.1%	8.8%
2,6-Dinitrotoluene	< 96 U	1240	1440	86.1%	1330	1430	93.0%	7.0%
2,4-Dinitrotoluene	< 96 U	1330	1440	92.4%	1410	1430	98.6%	5.8%
Diethylphthalate	< 48 U	521 B	478	109%	538 B	478	113%	3.2%
4-Chlorophenyl-phenylether	< 19 U	361	478	75.5%	401	478	83.9%	10.5%
Fluorene	< 19 U	349	478	73.0%	383	478	80.1%	9.3%
4-Nitroaniline	< 96 U	584	1440	40.6%	509	1430	35.6%	13.7%
4,6-Dinitro-2-Methylphenol	< 190 U	1730	2630	65.8%	1850	2630	70.3%	6.7%
N-Nitrosodiphenylamine	< 19 U	429	478	89.7%	449	478	93.9%	4.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-4-(1-5)**
Page 2 of 2 **MS/MSD**

Lab Sample ID: WN15H QC Report No: WN15-GeoEngineers
LIMS ID: 13-8564 Project: PA Mill Stockpile Sampling
Matrix: Soil 000137-015-03
Date Analyzed MS: 05/11/13 18:55
MSD: 05/11/13 19:32

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
4-Bromophenyl-phenylether	< 19 U	419	478	87.7%	435	478	91.0%	3.7%
Hexachlorobenzene	< 19 U	414	478	86.6%	461	478	96.4%	10.7%
Pentachlorophenol	< 190 U	979 Q	1440	68.0%	1030 Q	1430	72.0%	5.1%
Phenanthrene	32	433	478	83.9%	447	478	86.8%	3.2%
Carbazole	< 19 U	599	478	125%	614	478	128%	2.5%
Anthracene	< 19 U	365	478	76.4%	381	478	79.7%	4.3%
Di-n-Butylphthalate	< 19 U	491	478	103%	503	478	105%	2.4%
Fluoranthene	35	443	478	85.4%	457	478	88.3%	3.1%
Pyrene	31	461	478	90.0%	470	478	91.8%	1.9%
Butylbenzylphthalate	< 19 U	548	478	115%	549	478	115%	0.2%
3,3'-Dichlorobenzidine	< 140 U	51.7 J	1440	3.6%	49.7 J	1430	3.5%	3.9%
Benzo(a)anthracene	< 19 U	399	478	83.5%	400	478	83.7%	0.3%
bis(2-Ethylhexyl)phthalate	< 24 U	434 B	478	90.8%	445 B	478	93.1%	2.5%
Chrysene	< 19 U	414	478	86.6%	411	478	86.0%	0.7%
Di-n-Octyl phthalate	< 19 U	404	478	84.5%	418	478	87.4%	3.4%
Benzo(a)pyrene	< 19 U	374	478	78.2%	381	478	79.7%	1.9%
Indeno(1,2,3-cd)pyrene	< 19 U	406	478	84.9%	415	478	86.8%	2.2%
Dibenz(a,h)anthracene	< 19 U	415	478	86.8%	422	478	88.3%	1.7%
Benzo(g,h,i)perylene	< 19 U	394	478	82.4%	387	478	81.0%	1.8%
1-Methylnaphthalene	< 19 U	353	478	73.8%	388	478	81.2%	9.4%
Total Benzofluoranthenes	< 38 U	794	957	83.0%	816	956	85.4%	2.7%

Reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-4-(1-5)**
Extraction Method: SW3546 **MATRIX SPIKE**

Lab Sample ID: WN15H
LIMS ID: 13-8564
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 18:55
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.45 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 13.0%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	19	---
111-44-4	Bis-(2-Chloroethyl) Ether	19	---
95-57-8	2-Chlorophenol	19	---
541-73-1	1,3-Dichlorobenzene	19	---
106-46-7	1,4-Dichlorobenzene	19	---
100-51-6	Benzyl Alcohol	19	---
95-50-1	1,2-Dichlorobenzene	19	---
95-48-7	2-Methylphenol	19	---
108-60-1	2,2'-Oxybis(1-Chloropropane)	19	---
106-44-5	4-Methylphenol	19	---
621-64-7	N-Nitroso-Di-N-Propylamine	19	---
67-72-1	Hexachloroethane	19	---
98-95-3	Nitrobenzene	19	---
78-59-1	Isophorone	19	---
88-75-5	2-Nitrophenol	96	---
105-67-9	2,4-Dimethylphenol	38	---
65-85-0	Benzoic Acid	380	---
111-91-1	bis(2-Chloroethoxy) Methane	19	---
120-83-2	2,4-Dichlorophenol	190	---
120-82-1	1,2,4-Trichlorobenzene	19	---
91-20-3	Naphthalene	19	---
106-47-8	4-Chloroaniline	260	---
87-68-3	Hexachlorobutadiene	19	---
59-50-7	4-Chloro-3-methylphenol	96	---
91-57-6	2-Methylnaphthalene	19	---
77-47-4	Hexachlorocyclopentadiene	380	---
88-06-2	2,4,6-Trichlorophenol	96	---
95-95-4	2,4,5-Trichlorophenol	96	---
91-58-7	2-Chloronaphthalene	19	---
88-74-4	2-Nitroaniline	96	---
131-11-3	Dimethylphthalate	19	---
208-96-8	Acenaphthylene	19	---
99-09-2	3-Nitroaniline	96	---
83-32-9	Acenaphthene	19	---
51-28-5	2,4-Dinitrophenol	810	---
100-02-7	4-Nitrophenol	96	---
132-64-9	Dibenzofuran	19	---

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-4-(1-5)**
Extraction Method: SW3546 **MATRIX SPIKE**

Lab Sample ID: WN15H
LIMS ID: 13-8564
Matrix: Soil
Date Analyzed: 05/11/13 18:55

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	96	---
121-14-2	2,4-Dinitrotoluene	96	---
84-66-2	Diethylphthalate	48	---
7005-72-3	4-Chlorophenyl-phenylether	19	---
86-73-7	Fluorene	19	---
100-01-6	4-Nitroaniline	96	---
534-52-1	4,6-Dinitro-2-Methylphenol	190	---
86-30-6	N-Nitrosodiphenylamine	19	---
101-55-3	4-Bromophenyl-phenylether	19	---
118-74-1	Hexachlorobenzene	19	---
87-86-5	Pentachlorophenol	190	---
85-01-8	Phenanthrene	19	---
86-74-8	Carbazole	19	---
120-12-7	Anthracene	19	---
84-74-2	Di-n-Butylphthalate	19	---
206-44-0	Fluoranthene	19	---
129-00-0	Pyrene	19	---
85-68-7	Butylbenzylphthalate	19	---
91-94-1	3,3'-Dichlorobenzidine	140	---
56-55-3	Benzo(a)anthracene	19	---
117-81-7	bis(2-Ethylhexyl)phthalate	24	---
218-01-9	Chrysene	19	---
117-84-0	Di-n-Octyl phthalate	19	---
50-32-8	Benzo(a)pyrene	19	---
193-39-5	Indeno(1,2,3-cd)pyrene	19	---
53-70-3	Dibenz(a,h)anthracene	19	---
191-24-2	Benzo(g,h,i)perylene	19	---
90-12-0	1-Methylnaphthalene	19	---
TOTBFA	Total Benzofluoranthenes	38	---

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	66.8%	2-Fluorobiphenyl	68.4%
d14-p-Terphenyl	92.0%	d4-1,2-Dichlorobenzene	63.6%
d5-Phenol	67.7%	2-Fluorophenol	65.2%
2,4,6-Tribromophenol	91.2%	d4-2-Chlorophenol	67.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-4-(1-5)**
Extraction Method: SW3546 **MATRIX SPIKE DUPLICATE**

Lab Sample ID: WN15H
LIMS ID: 13-8564
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 19:32
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.46 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: 13.0%

CAS Number	Analyte	RL	Result
108-95-2	Phenol	19	---
111-44-4	Bis-(2-Chloroethyl) Ether	19	---
95-57-8	2-Chlorophenol	19	---
541-73-1	1,3-Dichlorobenzene	19	---
106-46-7	1,4-Dichlorobenzene	19	---
100-51-6	Benzyl Alcohol	19	---
95-50-1	1,2-Dichlorobenzene	19	---
95-48-7	2-Methylphenol	19	---
108-60-1	2,2'-Oxybis(1-Chloropropane)	19	---
106-44-5	4-Methylphenol	19	---
621-64-7	N-Nitroso-Di-N-Propylamine	19	---
67-72-1	Hexachloroethane	19	---
98-95-3	Nitrobenzene	19	---
78-59-1	Isophorone	19	---
88-75-5	2-Nitrophenol	96	---
105-67-9	2,4-Dimethylphenol	38	---
65-85-0	Benzoic Acid	380	---
111-91-1	bis(2-Chloroethoxy) Methane	19	---
120-83-2	2,4-Dichlorophenol	190	---
120-82-1	1,2,4-Trichlorobenzene	19	---
91-20-3	Naphthalene	19	---
106-47-8	4-Chloroaniline	260	---
87-68-3	Hexachlorobutadiene	19	---
59-50-7	4-Chloro-3-methylphenol	96	---
91-57-6	2-Methylnaphthalene	19	---
77-47-4	Hexachlorocyclopentadiene	380	---
88-06-2	2,4,6-Trichlorophenol	96	---
95-95-4	2,4,5-Trichlorophenol	96	---
91-58-7	2-Chloronaphthalene	19	---
88-74-4	2-Nitroaniline	96	---
131-11-3	Dimethylphthalate	19	---
208-96-8	Acenaphthylene	19	---
99-09-2	3-Nitroaniline	96	---
83-32-9	Acenaphthene	19	---
51-28-5	2,4-Dinitrophenol	810	---
100-02-7	4-Nitrophenol	96	---
132-64-9	Dibenzofuran	19	---

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: SP1-4-(1-5)**
Extraction Method: SW3546 **MATRIX SPIKE DUPLICATE**

Lab Sample ID: WN15H QC Report No: WN15-GeoEngineers
LIMS ID: 13-8564 Project: PA Mill Stockpile Sampling
Matrix: Soil 000137-015-03
Date Analyzed: 05/11/13 19:32

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	96	---
121-14-2	2,4-Dinitrotoluene	96	---
84-66-2	Diethylphthalate	48	---
7005-72-3	4-Chlorophenyl-phenylether	19	---
86-73-7	Fluorene	19	---
100-01-6	4-Nitroaniline	96	---
534-52-1	4,6-Dinitro-2-Methylphenol	190	---
86-30-6	N-Nitrosodiphenylamine	19	---
101-55-3	4-Bromophenyl-phenylether	19	---
118-74-1	Hexachlorobenzene	19	---
87-86-5	Pentachlorophenol	190	---
85-01-8	Phenanthrene	19	---
86-74-8	Carbazole	19	---
120-12-7	Anthracene	19	---
84-74-2	Di-n-Butylphthalate	19	---
206-44-0	Fluoranthene	19	---
129-00-0	Pyrene	19	---
85-68-7	Butylbenzylphthalate	19	---
91-94-1	3,3'-Dichlorobenzidine	140	---
56-55-3	Benzo(a)anthracene	19	---
117-81-7	bis(2-Ethylhexyl)phthalate	24	---
218-01-9	Chrysene	19	---
117-84-0	Di-n-Octyl phthalate	19	---
50-32-8	Benzo(a)pyrene	19	---
193-39-5	Indeno(1,2,3-cd)pyrene	19	---
53-70-3	Dibenz(a,h)anthracene	19	---
191-24-2	Benzo(g,h,i)perylene	19	---
90-12-0	1-Methylnaphthalene	19	---
TOTBFA	Total Benzofluoranthenes	38	---

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	73.2%	2-Fluorobiphenyl	74.2%
d14-p-Terphenyl	104%	d4-1,2-Dichlorobenzene	68.0%
d5-Phenol	71.3%	2-Fluorophenol	69.2%
2,4,6-Tribromophenol	94.3%	d4-2-Chlorophenol	72.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: LCS-043013**
Page 1 of 2 **LAB CONTROL**

Lab Sample ID: LCS-043013
LIMS ID: 13-8564
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 13:24
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.00 g
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Phenol	355	500	71.0%
Bis-(2-Chloroethyl) Ether	359	500	71.8%
2-Chlorophenol	322	500	64.4%
1,3-Dichlorobenzene	349	500	69.8%
1,4-Dichlorobenzene	352	500	70.4%
Benzyl Alcohol	294	500	58.8%
1,2-Dichlorobenzene	361	500	72.2%
2-Methylphenol	295	500	59.0%
2,2'-Oxybis(1-Chloropropane)	366	500	73.2%
4-Methylphenol	643	1000	64.3%
N-Nitroso-Di-N-Propylamine	329	500	65.8%
Hexachloroethane	357	500	71.4%
Nitrobenzene	379	500	75.8%
Isophorone	359	500	71.8%
2-Nitrophenol	342	500	68.4%
2,4-Dimethylphenol	756	1500	50.4%
Benzoic Acid	1130 Q	2750	41.1%
bis(2-Chloroethoxy) Methane	393	500	78.6%
2,4-Dichlorophenol	964	1500	64.3%
1,2,4-Trichlorobenzene	430	500	86.0%
Naphthalene	337	500	67.4%
4-Chloroaniline	339	1500	22.6%
Hexachlorobutadiene	372	500	74.4%
4-Chloro-3-methylphenol	1250	1500	83.3%
2-Methylnaphthalene	366	500	73.2%
Hexachlorocyclopentadiene	680	1500	45.3%
2,4,6-Trichlorophenol	1100	1500	73.3%
2,4,5-Trichlorophenol	1190	1500	79.3%
2-Chloronaphthalene	392	500	78.4%
2-Nitroaniline	1470	1500	98.0%
Dimethylphthalate	446	500	89.2%
Acenaphthylene	348	500	69.6%
3-Nitroaniline	819	1500	54.6%
Acenaphthene	372	500	74.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: LCS-043013**
 LAB CONTROL

Lab Sample ID: LCS-043013 QC Report No: WN15-GeoEngineers
LIMS ID: 13-8564 Project: PA Mill Stockpile Sampling
Matrix: Soil 000137-015-03
Date Analyzed: 05/11/13 13:24

Analyte	Lab Control	Spike Added	Recovery
2,4-Dinitrophenol	1450	2750	52.7%
4-Nitrophenol	1030	1500	68.7%
Dibenzofuran	393	500	78.6%
2,6-Dinitrotoluene	1370	1500	91.3%
2,4-Dinitrotoluene	1430	1500	95.3%
Diethylphthalate	459 B	500	91.8%
4-Chlorophenyl-phenylether	387	500	77.4%
Fluorene	371	500	74.2%
4-Nitroaniline	928	1500	61.9%
4,6-Dinitro-2-Methylphenol	1880	2750	68.4%
N-Nitrosodiphenylamine	445	500	89.0%
4-Bromophenyl-phenylether	436	500	87.2%
Hexachlorobenzene	378	500	75.6%
Pentachlorophenol	962 Q	1500	64.1%
Phenanthrene	409	500	81.8%
Carbazole	608	500	122%
Anthracene	370	500	74.0%
Di-n-Butylphthalate	505	500	101%
Fluoranthene	429	500	85.8%
Pyrene	422	500	84.4%
Butylbenzylphthalate	547	500	109%
3,3'-Dichlorobenzidine	312	1500	20.8%
Benzo(a)anthracene	416	500	83.2%
bis(2-Ethylhexyl)phthalate	469 B	500	93.8%
Chrysene	414	500	82.8%
Di-n-Octyl phthalate	430	500	86.0%
Benzo(a)pyrene	407	500	81.4%
Indeno(1,2,3-cd)pyrene	424	500	84.8%
Dibenz(a,h)anthracene	434	500	86.8%
Benzo(g,h,i)perylene	399	500	79.8%
1-Methylnaphthalene	390	500	78.0%
Total Benzofluoranthenes	869	1000	86.9%

Semivolatile Surrogate Recovery	
d5-Nitrobenzene	71.6%
2-Fluorobiphenyl	74.6%
d14-p-Terphenyl	88.4%
d4-1,2-Dichlorobenzene	70.2%
d5-Phenol	74.9%
2-Fluorophenol	70.4%
2,4,6-Tribromophenol	85.5%
d4-2-Chlorophenol	73.2%

Reported in µg/kg (ppb)

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: MB-043013**
Extraction Method: SW3546 **METHOD BLANK**

Lab Sample ID: MB-043013
LIMS ID: 13-8564
Matrix: Soil
Data Release Authorized:
Reported: 05/14/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: NA
Date Received: NA

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 12:48
Instrument/Analyst: NT10/VTS
GPC Cleanup: Yes

Sample Amount: 10.00 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
108-95-2	Phenol	20	< 20 U
111-44-4	Bis-(2-Chloroethyl) Ether	20	< 20 U
95-57-8	2-Chlorophenol	20	< 20 U
541-73-1	1,3-Dichlorobenzene	20	< 20 U
106-46-7	1,4-Dichlorobenzene	20	< 20 U
100-51-6	Benzyl Alcohol	20	< 20 U
95-50-1	1,2-Dichlorobenzene	20	< 20 U
95-48-7	2-Methylphenol	20	< 20 U
108-60-1	2,2'-Oxybis(1-Chloropropane)	20	< 20 U
106-44-5	4-Methylphenol	20	< 20 U
621-64-7	N-Nitroso-Di-N-Propylamine	20	< 20 U
67-72-1	Hexachloroethane	20	< 20 U
98-95-3	Nitrobenzene	20	< 20 U
78-59-1	Isophorone	20	< 20 U
88-75-5	2-Nitrophenol	100	< 100 U
105-67-9	2,4-Dimethylphenol	40	< 40 U
65-85-0	Benzoic Acid	400	< 400 U
111-91-1	bis(2-Chloroethoxy) Methane	20	< 20 U
120-83-2	2,4-Dichlorophenol	200	< 200 U
120-82-1	1,2,4-Trichlorobenzene	20	< 20 U
91-20-3	Naphthalene	20	< 20 U
106-47-8	4-Chloroaniline	270	< 270 U
87-68-3	Hexachlorobutadiene	20	< 20 U
59-50-7	4-Chloro-3-methylphenol	100	< 100 U
91-57-6	2-Methylnaphthalene	20	< 20 U
77-47-4	Hexachlorocyclopentadiene	400	< 400 U
88-06-2	2,4,6-Trichlorophenol	100	< 100 U
95-95-4	2,4,5-Trichlorophenol	100	< 100 U
91-58-7	2-Chloronaphthalene	20	< 20 U
88-74-4	2-Nitroaniline	100	< 100 U
131-11-3	Dimethylphthalate	20	< 20 U
208-96-8	Acenaphthylene	20	< 20 U
99-09-2	3-Nitroaniline	100	< 100 U
83-32-9	Acenaphthene	20	< 20 U
51-28-5	2,4-Dinitrophenol	850	< 850 U
100-02-7	4-Nitrophenol	100	< 100 U
132-64-9	Dibenzofuran	20	< 20 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA Semivolatiles by SW8270D GC/MS **Sample ID: MB-043013**
Extraction Method: SW3546 **METHOD BLANK**

Lab Sample ID: MB-043013 QC Report No: WN15-GeoEngineers
LIMS ID: 13-8564 Project: PA Mill Stockpile Sampling
Matrix: Soil 000137-015-03
Date Analyzed: 05/11/13 12:48

CAS Number	Analyte	RL	Result
606-20-2	2,6-Dinitrotoluene	100	< 100 U
121-14-2	2,4-Dinitrotoluene	100	< 100 U
84-66-2	**Diethylphthalate**	**50**	**43 J**
7005-72-3	4-Chlorophenyl-phenylether	20	< 20 U
86-73-7	Fluorene	20	< 20 U
100-01-6	4-Nitroaniline	100	< 100 U
534-52-1	4,6-Dinitro-2-Methylphenol	200	< 200 U
86-30-6	N-Nitrosodiphenylamine	20	< 20 U
101-55-3	4-Bromophenyl-phenylether	20	< 20 U
118-74-1	Hexachlorobenzene	20	< 20 U
87-86-5	Pentachlorophenol	200	< 200 U
85-01-8	Phenanthrene	20	< 20 U
86-74-8	Carbazole	20	< 20 U
120-12-7	Anthracene	20	< 20 U
84-74-2	Di-n-Butylphthalate	20	< 20 U
206-44-0	Fluoranthene	20	< 20 U
129-00-0	Pyrene	20	< 20 U
85-68-7	Butylbenzylphthalate	20	< 20 U
91-94-1	3,3'-Dichlorobenzidine	150	< 150 U
56-55-3	Benzo(a)anthracene	20	< 20 U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**25**	**21 J**
218-01-9	Chrysene	20	< 20 U
117-84-0	Di-n-Octyl phthalate	20	< 20 U
50-32-8	Benzo(a)pyrene	20	< 20 U
193-39-5	Indeno(1,2,3-cd)pyrene	20	< 20 U
53-70-3	Dibenz(a,h)anthracene	20	< 20 U
191-24-2	Benzo(g,h,i)perylene	20	< 20 U
90-12-0	1-Methylnaphthalene	20	< 20 U
TOTBFA	Total Benzofluoranthenes	40	< 40 U

Reported in µg/kg (ppb)

Semivolatile Surrogate Recovery

d5-Nitrobenzene	63.2%	2-Fluorobiphenyl	63.4%
d14-p-Terphenyl	78.6%	d4-1,2-Dichlorobenzene	62.6%
d5-Phenol	60.8%	2-Fluorophenol	58.1%
2,4,6-Tribromophenol	54.9%	d4-2-Chlorophenol	61.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
Page 1 of 1

Sample ID: SP1-5-(1-5)

Lab Sample ID: WN15A
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 13:41
Instrument/Analyst: AS1/PK
Acid Cleanup: Yes
Silica-Carbon Cleanup: No

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00
Silica-Florisil Cleanup: Yes

Analyte	Ion Ratio	Ratio Limits	EDL	RL	Result	
2,3,7,8-TCDF	0.77	0.65-0.89		0.996	26.0	
2,3,7,8-TCDD	0.75	0.65-0.89		0.996	6.49	
1,2,3,7,8-PeCDF	1.52	1.32-1.78		0.996	26.1	X
2,3,4,7,8-PeCDF	1.53	1.32-1.78		0.996	25.7	
1,2,3,7,8-PeCDD	1.52	1.32-1.78		0.996	51.0	
1,2,3,4,7,8-HxCDF	1.24	1.05-1.43		0.996	34.2	X
1,2,3,6,7,8-HxCDF	1.23	1.05-1.43		0.996	19.5	
2,3,4,6,7,8-HxCDF	1.18	1.05-1.43		0.996	18.5	X
1,2,3,7,8,9-HxCDF	1.21	1.05-1.43		0.996	5.00	
1,2,3,4,7,8-HxCDD	1.23	1.05-1.43		0.996	41.2	
1,2,3,6,7,8-HxCDD	1.25	1.05-1.43		0.996	88.2	
1,2,3,7,8,9-HxCDD	1.23	1.05-1.43		0.996	57.6	
1,2,3,4,6,7,8-HpCDF	1.03	0.88-1.20		0.996	99.0	
1,2,3,4,7,8,9-HpCDF	0.97	0.88-1.20		0.996	7.43	
1,2,3,4,6,7,8-HpCDD	1.03	0.88-1.20		0.996	643	
OCDF	0.88	0.76-1.02		1.99	246	
OCDD	0.89	0.76-1.02		1.99	3,120	

Homologue Group	EDL	RL	Result	
Total TCDF		0.996	322	EMPC
Total TCDD		0.996	739	EMPC
Total PeCDF		1.99	303	
Total PeCDD		0.996	932	
Total HxCDF		1.99	228	EMPC
Total HxCDD		1.99	1,180	
Total HpCDF		1.99	272	EMPC
Total HpCDD		1.99	1,250	

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 104

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 104

Reported in pg/g

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B

Sample ID: SP1-5-(1-5)

Lab Sample ID: WN15A
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 13:41
Instrument/Analyst: AS1/PK

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.77	0.65-0.89	107	24-169	
13C-2,3,7,8-TCDD	0.79	0.65-0.89	90.0	25-164	
13C-1,2,3,7,8-PeCDF	1.59	1.32-1.78	104	24-185	
13C-2,3,4,7,8-PeCDF	1.56	1.32-1.78	107	21-178	
13C-1,2,3,7,8-PeCDD	1.60	1.32-1.78	95.8	25-181	
13C-1,2,3,4,7,8-HxCDF	0.51	0.43-0.59	101	26-152	
13C-1,2,3,6,7,8-HxCDF	0.52	0.43-0.59	95.4	26-123	
13C-2,3,4,6,7,8-HxCDF	0.52	0.43-0.59	92.7	28-136	
13C-1,2,3,7,8,9-HxCDF	0.52	0.43-0.59	114	29-147	
13C-1,2,3,4,7,8-HxCDD	1.26	1.05-1.43	93.6	32-141	
13C-1,2,3,6,7,8-HxCDD	1.25	1.05-1.43	89.9	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.45	0.37-0.51	95.8	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.45	0.37-0.51	102	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.05	0.88-1.20	96.3	23-140	
13C-OCDD	0.90	0.76-1.02	85.8	17-157	
37Cl4-2,3,7,8-TCDD			95.4	35-197	

Reported in Percent Recovery

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
Page 1 of 1

Sample ID: SP1-1-(1-5)

Lab Sample ID: WN15B
LIMS ID: 13-8558
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 14:32
Instrument/Analyst: AS1/PK
Acid Cleanup: Yes
Silica-Carbon Cleanup: No

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00
Silica-Florisil Cleanup: Yes

Analyte	Ion Ratio	Ratio Limits	EDL	RL	Result	
2,3,7,8-TCDF	0.77	0.65-0.89		0.997	1.38	
2,3,7,8-TCDD	0.57	0.65-0.89		0.997	0.676	EMPC
1,2,3,7,8-PeCDF	1.61	1.32-1.78		0.997	0.975	JX
2,3,4,7,8-PeCDF	1.35	1.32-1.78		0.997	1.01	
1,2,3,7,8-PeCDD	1.54	1.32-1.78		0.997	2.19	
1,2,3,4,7,8-HxCDF	1.13	1.05-1.43		0.997	0.829	JX
1,2,3,6,7,8-HxCDF	1.19	1.05-1.43		0.997	0.638	J
2,3,4,6,7,8-HxCDF	1.40	1.05-1.43		0.997	0.744	JX
1,2,3,7,8,9-HxCDF	1.18	1.05-1.43		0.997	0.233	J
1,2,3,4,7,8-HxCDD	1.28	1.05-1.43		0.997	1.65	
1,2,3,6,7,8-HxCDD	1.22	1.05-1.43		0.997	4.09	
1,2,3,7,8,9-HxCDD	1.19	1.05-1.43		0.997	2.93	
1,2,3,4,6,7,8-HpCDF	1.07	0.88-1.20		0.997	4.59	
1,2,3,4,7,8,9-HpCDF	1.37	0.88-1.20		0.997	0.305	JEMPC
1,2,3,4,6,7,8-HpCDD	1.05	0.88-1.20		0.997	46.1	
OCDF	0.89	0.76-1.02		1.99	9.17	
OCDD	0.88	0.76-1.02		1.99	304	

Homologue Group	EDL	RL	Result	
Total TCDF		0.997	19.2	EMPC
Total TCDD		0.997	49.0	EMPC
Total PeCDF		1.99	12.6	EMPC
Total PeCDD		0.997	58.0	EMPC
Total HxCDF		1.99	11.5	EMPC
Total HxCDD		1.99	71.3	EMPC
Total HpCDF		1.99	13.3	EMPC
Total HpCDD		1.99	124	

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 5.05

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 5.05

Reported in pg/g

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B

Sample ID: SP1-1-(1-5)

Lab Sample ID: WN15B
LIMS ID: 13-8558
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 14:32
Instrument/Analyst: AS1/PK

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.77	0.65-0.89	106	24-169	
13C-2,3,7,8-TCDD	0.77	0.65-0.89	87.1	25-164	
13C-1,2,3,7,8-PeCDF	1.56	1.32-1.78	103	24-185	
13C-2,3,4,7,8-PeCDF	1.57	1.32-1.78	107	21-178	
13C-1,2,3,7,8-PeCDD	1.57	1.32-1.78	95.4	25-181	
13C-1,2,3,4,7,8-HxCDF	0.52	0.43-0.59	91.7	26-152	
13C-1,2,3,6,7,8-HxCDF	0.53	0.43-0.59	88.2	26-123	
13C-2,3,4,6,7,8-HxCDF	0.52	0.43-0.59	88.0	28-136	
13C-1,2,3,7,8,9-HxCDF	0.53	0.43-0.59	102	29-147	
13C-1,2,3,4,7,8-HxCDD	1.28	1.05-1.43	84.1	32-141	
13C-1,2,3,6,7,8-HxCDD	1.25	1.05-1.43	81.9	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.44	0.37-0.51	90.5	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.45	0.37-0.51	97.0	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.05	0.88-1.20	92.4	23-140	
13C-OCDD	0.88	0.76-1.02	72.1	17-157	
37Cl4-2,3,7,8-TCDD			95.4	35-197	

Reported in Percent Recovery

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
Page 1 of 1

Sample ID: SP1-6-(1-5)

Lab Sample ID: WN15C
LIMS ID: 13-8559
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 15:24
Instrument/Analyst: AS1/PK
Acid Cleanup: Yes
Silica-Carbon Cleanup: No

Sample Amount: 10.1 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00
Silica-Florisil Cleanup: Yes

Analyte	Ion Ratio	Ratio Limits	EDL	RL	Result	
2,3,7,8-TCDF	0.74	0.65-0.89		0.994	1.10	
2,3,7,8-TCDD	0.49	0.65-0.89		0.994	0.738	EMPC
1,2,3,7,8-PeCDF	1.50	1.32-1.78		0.994	0.649	JX
2,3,4,7,8-PeCDF	1.43	1.32-1.78		0.994	0.834	J
1,2,3,7,8-PeCDD	1.53	1.32-1.78		0.994	1.64	
1,2,3,4,7,8-HxCDF	1.26	1.05-1.43		0.994	0.930	JX
1,2,3,6,7,8-HxCDF	1.54	1.05-1.43		0.994	0.626	JEMPC
2,3,4,6,7,8-HxCDF	1.38	1.05-1.43		0.994	0.716	J
1,2,3,7,8,9-HxCDF	0.95	1.05-1.43		0.994	0.260	JEMPC
1,2,3,4,7,8-HxCDD	1.26	1.05-1.43		0.994	1.14	
1,2,3,6,7,8-HxCDD	1.20	1.05-1.43		0.994	3.34	
1,2,3,7,8,9-HxCDD	1.20	1.05-1.43		0.994	2.26	
1,2,3,4,6,7,8-HpCDF	1.01	0.88-1.20		0.994	7.11	
1,2,3,4,7,8,9-HpCDF	1.23	0.88-1.20		0.994	0.485	JEMPC
1,2,3,4,6,7,8-HpCDD	1.02	0.88-1.20		0.994	40.3	
OCDF	0.88	0.76-1.02		1.99	18.3	
OCDD	0.87	0.76-1.02		1.99	318	

Homologue Group	EDL	RL	Result	
Total TCDF		0.994	17.7	EMPC
Total TCDD		0.994	36.7	EMPC
Total PeCDF		1.99	11.0	EMPC
Total PeCDD		0.994	41.4	EMPC
Total HxCDF		1.99	13.4	EMPC
Total HxCDD		1.99	49.6	EMPC
Total HpCDF		1.99	23.0	EMPC
Total HpCDD		1.99	78.2	

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 4.26

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 4.26

Reported in pg/g

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
Page 1 of 1

Sample ID: SP1-6-(1-5)

Lab Sample ID: WN15C
LIMS ID: 13-8559
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 15:24
Instrument/Analyst: AS1/PK

Sample Amount: 10.1 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.78	0.65-0.89	108	24-169	
13C-2,3,7,8-TCDD	0.78	0.65-0.89	88.7	25-164	
13C-1,2,3,7,8-PeCDF	1.58	1.32-1.78	102	24-185	
13C-2,3,4,7,8-PeCDF	1.58	1.32-1.78	101	21-178	
13C-1,2,3,7,8-PeCDD	1.58	1.32-1.78	90.8	25-181	
13C-1,2,3,4,7,8-HxCDF	0.52	0.43-0.59	98.7	26-152	
13C-1,2,3,6,7,8-HxCDF	0.52	0.43-0.59	95.3	26-123	
13C-2,3,4,6,7,8-HxCDF	0.53	0.43-0.59	91.8	28-136	
13C-1,2,3,7,8,9-HxCDF	0.52	0.43-0.59	101	29-147	
13C-1,2,3,4,7,8-HxCDD	1.27	1.05-1.43	88.0	32-141	
13C-1,2,3,6,7,8-HxCDD	1.25	1.05-1.43	86.0	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.46	0.37-0.51	89.1	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.45	0.37-0.51	93.2	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.04	0.88-1.20	87.5	23-140	
13C-OCDD	0.89	0.76-1.02	65.7	17-157	
37Cl4-2,3,7,8-TCDD			94.9	35-197	

Reported in Percent Recovery

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
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Sample ID: SP1-2-(1-5)

Lab Sample ID: WN15D
LIMS ID: 13-8560
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 16:16
Instrument/Analyst: AS1/PK
Acid Cleanup: Yes
Silica-Carbon Cleanup: No

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00
Silica-Florisil Cleanup: Yes

Analyte	Ion Ratio	Ratio Limits	EDL	RL	Result	
2,3,7,8-TCDF	0.78	0.65-0.89		0.997	16.3	
2,3,7,8-TCDD	0.73	0.65-0.89		0.997	4.34	
1,2,3,7,8-PeCDF	1.58	1.32-1.78		0.997	12.2	X
2,3,4,7,8-PeCDF	1.44	1.32-1.78		0.997	12.9	
1,2,3,7,8-PeCDD	1.51	1.32-1.78		0.997	23.9	
1,2,3,4,7,8-HxCDF	1.24	1.05-1.43		0.997	10.7	X
1,2,3,6,7,8-HxCDF	1.19	1.05-1.43		0.997	9.02	
2,3,4,6,7,8-HxCDF	1.24	1.05-1.43		0.997	7.96	X
1,2,3,7,8,9-HxCDF	1.26	1.05-1.43		0.997	2.11	
1,2,3,4,7,8-HxCDD	1.24	1.05-1.43		0.997	17.0	
1,2,3,6,7,8-HxCDD	1.21	1.05-1.43		0.997	37.4	
1,2,3,7,8,9-HxCDD	1.23	1.05-1.43		0.997	26.9	
1,2,3,4,6,7,8-HpCDF	1.00	0.88-1.20		0.997	31.7	
1,2,3,4,7,8,9-HpCDF	0.97	0.88-1.20		0.997	2.52	
1,2,3,4,6,7,8-HpCDD	1.03	0.88-1.20		0.997	257	
OCDF	0.88	0.76-1.02		1.99	47.7	
OCDD	0.89	0.76-1.02		1.99	1,020	

Homologue Group	EDL	RL	Result	
Total TCDF		0.997	229	EMPC
Total TCDD		0.997	555	
Total PeCDF		1.99	169	EMPC
Total PeCDD		0.997	679	
Total HxCDF		1.99	98.3	EMPC
Total HxCDD		1.99	692	
Total HpCDF		1.99	72.7	EMPC
Total HpCDD		1.99	539	

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 48.4

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 48.4

Reported in pg/g

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
Page 1 of 1

Sample ID: SP1-2-(1-5)

Lab Sample ID: WN15D
LIMS ID: 13-8560
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 16:16
Instrument/Analyst: AS1/PK

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.77	0.65-0.89	115	24-169	
13C-2,3,7,8-TCDD	0.78	0.65-0.89	90.2	25-164	
13C-1,2,3,7,8-PeCDF	1.56	1.32-1.78	102	24-185	
13C-2,3,4,7,8-PeCDF	1.57	1.32-1.78	103	21-178	
13C-1,2,3,7,8-PeCDD	1.58	1.32-1.78	91.9	25-181	
13C-1,2,3,4,7,8-HxCDF	0.52	0.43-0.59	102	26-152	
13C-1,2,3,6,7,8-HxCDF	0.52	0.43-0.59	95.8	26-123	
13C-2,3,4,6,7,8-HxCDF	0.53	0.43-0.59	93.8	28-136	
13C-1,2,3,7,8,9-HxCDF	0.51	0.43-0.59	110	29-147	
13C-1,2,3,4,7,8-HxCDD	1.25	1.05-1.43	94.2	32-141	
13C-1,2,3,6,7,8-HxCDD	1.24	1.05-1.43	87.5	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.44	0.37-0.51	95.3	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.44	0.37-0.51	99.4	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.04	0.88-1.20	92.3	23-140	
13C-OCDD	0.90	0.76-1.02	73.5	17-157	
37Cl4-2,3,7,8-TCDD			96.6	35-197	

Reported in Percent Recovery

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
Page 1 of 1

Sample ID: SP1-3-(1-5)

Lab Sample ID: WN15E
LIMS ID: 13-8561
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 17:08
Instrument/Analyst: AS1/PK
Acid Cleanup: Yes
Silica-Carbon Cleanup: No

Sample Amount: 10.2 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00
Silica-Florisil Cleanup: Yes

Analyte	Ion Ratio	Ratio Limits	EDL	RL	Result	
2,3,7,8-TCDF	0.73	0.65-0.89		0.985	11.7	
2,3,7,8-TCDD	0.75	0.65-0.89		0.985	2.31	
1,2,3,7,8-PeCDF	1.49	1.32-1.78		0.985	7.00	X
2,3,4,7,8-PeCDF	1.56	1.32-1.78		0.985	9.01	
1,2,3,7,8-PeCDD	1.61	1.32-1.78		0.985	8.91	
1,2,3,4,7,8-HxCDF	1.23	1.05-1.43		0.985	7.43	X
1,2,3,6,7,8-HxCDF	1.24	1.05-1.43		0.985	6.21	
2,3,4,6,7,8-HxCDF	1.20	1.05-1.43		0.985	6.67	X
1,2,3,7,8,9-HxCDF	1.16	1.05-1.43		0.985	1.81	
1,2,3,4,7,8-HxCDD	1.22	1.05-1.43		0.985	5.98	
1,2,3,6,7,8-HxCDD	1.23	1.05-1.43		0.985	14.0	
1,2,3,7,8,9-HxCDD	1.19	1.05-1.43		0.985	10.2	
1,2,3,4,6,7,8-HpCDF	1.00	0.88-1.20		0.985	33.3	
1,2,3,4,7,8,9-HpCDF	1.07	0.88-1.20		0.985	2.69	
1,2,3,4,6,7,8-HpCDD	1.05	0.88-1.20		0.985	131	
OCDF	0.89	0.76-1.02		1.97	46.5	
OCDD	0.89	0.76-1.02		1.97	679	

Homologue Group	EDL	RL	Result	
Total TCDF		0.985	217	EMPC
Total TCDD		0.985	296	EMPC
Total PeCDF		1.97	119	EMPC
Total PeCDD		0.985	287	EMPC
Total HxCDF		1.97	74.3	EMPC
Total HxCDD		1.97	308	
Total HpCDF		1.97	76.6	EMPC
Total HpCDD		1.97	320	

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 22.4

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 22.4

Reported in pg/g

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
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Sample ID: SP1-3-(1-5)

Lab Sample ID: WN15E
LIMS ID: 13-8561
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 17:08
Instrument/Analyst: AS1/PK

Sample Amount: 10.2 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.77	0.65-0.89	97.8	24-169	
13C-2,3,7,8-TCDD	0.80	0.65-0.89	87.1	25-164	
13C-1,2,3,7,8-PeCDF	1.57	1.32-1.78	105	24-185	
13C-2,3,4,7,8-PeCDF	1.56	1.32-1.78	104	21-178	
13C-1,2,3,7,8-PeCDD	1.58	1.32-1.78	91.6	25-181	
13C-1,2,3,4,7,8-HxCDF	0.52	0.43-0.59	98.6	26-152	
13C-1,2,3,6,7,8-HxCDF	0.52	0.43-0.59	93.9	26-123	
13C-2,3,4,6,7,8-HxCDF	0.52	0.43-0.59	91.4	28-136	
13C-1,2,3,7,8,9-HxCDF	0.52	0.43-0.59	116	29-147	
13C-1,2,3,4,7,8-HxCDD	1.26	1.05-1.43	93.3	32-141	
13C-1,2,3,6,7,8-HxCDD	1.25	1.05-1.43	85.7	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.44	0.37-0.51	91.0	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.44	0.37-0.51	91.1	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.05	0.88-1.20	86.5	23-140	
13C-OCDD	0.90	0.76-1.02	63.6	17-157	
37Cl4-2,3,7,8-TCDD			94.3	35-197	

Reported in Percent Recovery

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
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Sample ID: SP1-8-(1-5)

Lab Sample ID: WN15F
LIMS ID: 13-8562
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 18:01
Instrument/Analyst: AS1/PK
Acid Cleanup: Yes
Silica-Carbon Cleanup: No

Sample Amount: 10.1 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00
Silica-Florisil Cleanup: Yes

Analyte	Ion Ratio	Ratio Limits	EDL	RL	Result	
2,3,7,8-TCDF	0.71	0.65-0.89		0.990	1.32	
2,3,7,8-TCDD	0.75	0.65-0.89		0.990	0.966	
1,2,3,7,8-PeCDF	1.67	1.32-1.78		0.990	0.994	X
2,3,4,7,8-PeCDF	1.47	1.32-1.78		0.990	1.17	
1,2,3,7,8-PeCDD	1.45	1.32-1.78		0.990	3.08	
1,2,3,4,7,8-HxCDF	1.15	1.05-1.43		0.990	0.781	JX
1,2,3,6,7,8-HxCDF	1.31	1.05-1.43		0.990	0.710	J
2,3,4,6,7,8-HxCDF	1.24	1.05-1.43		0.990	0.802	J
1,2,3,7,8,9-HxCDF	1.46	1.05-1.43		0.990	0.210	JEMPC
1,2,3,4,7,8-HxCDD	1.13	1.05-1.43		0.990	1.65	
1,2,3,6,7,8-HxCDD	1.20	1.05-1.43		0.990	3.41	
1,2,3,7,8,9-HxCDD	1.31	1.05-1.43		0.990	2.63	
1,2,3,4,6,7,8-HpCDF	1.04	0.88-1.20		0.990	4.17	
1,2,3,4,7,8,9-HpCDF	1.23	0.88-1.20		0.990	0.230	JEMPC
1,2,3,4,6,7,8-HpCDD	1.05	0.88-1.20		0.990	24.3	
OCDF	0.81	0.76-1.02		1.98	5.52	
OCDD	0.88	0.76-1.02		1.98	104	

Homologue Group	EDL	RL	Result	
Total TCDF		0.990	20.3	EMPC
Total TCDD		0.990	30.4	EMPC
Total PeCDF		1.98	13.6	EMPC
Total PeCDD		0.990	38.0	EMPC
Total HxCDF		1.98	10.7	EMPC
Total HxCDD		1.98	44.8	EMPC
Total HpCDF		1.98	11.5	EMPC
Total HpCDD		1.98	64.5	EMPC

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 5.90

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 5.90

Reported in pg/g

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B

Sample ID: SP1-8-(1-5)

Lab Sample ID: WN15F
LIMS ID: 13-8562
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 18:01
Instrument/Analyst: AS1/PK

Sample Amount: 10.1 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.78	0.65-0.89	101	24-169	
13C-2,3,7,8-TCDD	0.80	0.65-0.89	86.2	25-164	
13C-1,2,3,7,8-PeCDF	1.56	1.32-1.78	98.3	24-185	
13C-2,3,4,7,8-PeCDF	1.56	1.32-1.78	99.4	21-178	
13C-1,2,3,7,8-PeCDD	1.57	1.32-1.78	88.4	25-181	
13C-1,2,3,4,7,8-HxCDF	0.51	0.43-0.59	94.8	26-152	
13C-1,2,3,6,7,8-HxCDF	0.52	0.43-0.59	90.9	26-123	
13C-2,3,4,6,7,8-HxCDF	0.53	0.43-0.59	87.6	28-136	
13C-1,2,3,7,8,9-HxCDF	0.52	0.43-0.59	99.5	29-147	
13C-1,2,3,4,7,8-HxCDD	1.27	1.05-1.43	84.8	32-141	
13C-1,2,3,6,7,8-HxCDD	1.25	1.05-1.43	81.4	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.45	0.37-0.51	87.6	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.44	0.37-0.51	92.3	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.06	0.88-1.20	85.5	23-140	
13C-OCDD	0.89	0.76-1.02	65.8	17-157	
37Cl4-2,3,7,8-TCDD			91.4	35-197	

Reported in Percent Recovery

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
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Sample ID: SP2-4-(1-5)

Lab Sample ID: WN15I
LIMS ID: 13-8565
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 18:53
Instrument/Analyst: AS1/PK
Acid Cleanup: Yes
Silica-Carbon Cleanup: No

Sample Amount: 10.2 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00
Silica-Florisil Cleanup: Yes

Analyte	Ion Ratio	Ratio Limits	EDL	RL	Result	
2,3,7,8-TCDF	0.74	0.65-0.89		0.981	7.48	
2,3,7,8-TCDD	0.73	0.65-0.89		0.981	1.48	
1,2,3,7,8-PeCDF	1.49	1.32-1.78		0.981	4.32	X
2,3,4,7,8-PeCDF	1.60	1.32-1.78		0.981	5.69	
1,2,3,7,8-PeCDD	1.53	1.32-1.78		0.981	6.02	
1,2,3,4,7,8-HxCDF	1.30	1.05-1.43		0.981	4.72	X
1,2,3,6,7,8-HxCDF	1.22	1.05-1.43		0.981	3.97	
2,3,4,6,7,8-HxCDF	1.11	1.05-1.43		0.981	4.04	X
1,2,3,7,8,9-HxCDF	1.27	1.05-1.43		0.981	1.07	
1,2,3,4,7,8-HxCDD	1.22	1.05-1.43		0.981	4.24	
1,2,3,6,7,8-HxCDD	1.18	1.05-1.43		0.981	10.8	
1,2,3,7,8,9-HxCDD	1.26	1.05-1.43		0.981	7.73	
1,2,3,4,6,7,8-HpCDF	1.01	0.88-1.20		0.981	20.3	
1,2,3,4,7,8,9-HpCDF	1.04	0.88-1.20		0.981	1.55	
1,2,3,4,6,7,8-HpCDD	1.04	0.88-1.20		0.981	95.8	
OCDF	0.90	0.76-1.02		1.96	31.3	
OCDD	0.88	0.76-1.02		1.96	514	

Homologue Group	EDL	RL	Result	
Total TCDF		0.981	128	EMPC
Total TCDD		0.981	224	
Total PeCDF		1.96	76.2	EMPC
Total PeCDD		0.981	217	
Total HxCDF		1.96	46.8	EMPC
Total HxCDD		1.96	241	
Total HpCDF		1.96	45.4	EMPC
Total HpCDD		1.96	201	EMPC

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 15.1

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 15.1

Reported in pg/g

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B

Sample ID: SP2-4-(1-5)

Lab Sample ID: WN15I
LIMS ID: 13-8565
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 18:53
Instrument/Analyst: AS1/PK

Sample Amount: 10.2 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.78	0.65-0.89	99.0	24-169	
13C-2,3,7,8-TCDD	0.78	0.65-0.89	80.7	25-164	
13C-1,2,3,7,8-PeCDF	1.57	1.32-1.78	98.5	24-185	
13C-2,3,4,7,8-PeCDF	1.56	1.32-1.78	100	21-178	
13C-1,2,3,7,8-PeCDD	1.57	1.32-1.78	89.8	25-181	
13C-1,2,3,4,7,8-HxCDF	0.53	0.43-0.59	90.2	26-152	
13C-1,2,3,6,7,8-HxCDF	0.52	0.43-0.59	87.3	26-123	
13C-2,3,4,6,7,8-HxCDF	0.52	0.43-0.59	87.2	28-136	
13C-1,2,3,7,8,9-HxCDF	0.52	0.43-0.59	108	29-147	
13C-1,2,3,4,7,8-HxCDD	1.27	1.05-1.43	88.3	32-141	
13C-1,2,3,6,7,8-HxCDD	1.25	1.05-1.43	81.5	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.45	0.37-0.51	88.6	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.45	0.37-0.51	91.5	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.05	0.88-1.20	88.6	23-140	
13C-OCDD	0.89	0.76-1.02	64.5	17-157	
37Cl4-2,3,7,8-TCDD			86.8	35-197	

Reported in Percent Recovery

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
Page 1 of 1

Sample ID: SP2-1-(1-5)

Lab Sample ID: WN15J
LIMS ID: 13-8566
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 19:45
Instrument/Analyst: AS1/PK
Acid Cleanup: Yes
Silica-Carbon Cleanup: No

Sample Amount: 10.1 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00
Silica-Florisil Cleanup: Yes

Analyte	Ion Ratio	Ratio Limits	EDL	RL	Result	
2,3,7,8-TCDF	0.77	0.65-0.89		0.990	4.57	
2,3,7,8-TCDD	0.71	0.65-0.89		0.990	1.45	
1,2,3,7,8-PeCDF	1.43	1.32-1.78		0.990	2.72	X
2,3,4,7,8-PeCDF	1.45	1.32-1.78		0.990	3.19	
1,2,3,7,8-PeCDD	1.53	1.32-1.78		0.990	6.12	
1,2,3,4,7,8-HxCDF	1.23	1.05-1.43		0.990	3.16	X
1,2,3,6,7,8-HxCDF	1.29	1.05-1.43		0.990	2.33	
2,3,4,6,7,8-HxCDF	1.26	1.05-1.43		0.990	3.00	X
1,2,3,7,8,9-HxCDF	1.22	1.05-1.43		0.990	1.12	
1,2,3,4,7,8-HxCDD	1.28	1.05-1.43		0.990	5.11	
1,2,3,6,7,8-HxCDD	1.23	1.05-1.43		0.990	12.7	
1,2,3,7,8,9-HxCDD	1.30	1.05-1.43		0.990	8.25	
1,2,3,4,6,7,8-HpCDF	1.00	0.88-1.20		0.990	23.1	
1,2,3,4,7,8,9-HpCDF	0.96	0.88-1.20		0.990	1.65	
1,2,3,4,6,7,8-HpCDD	1.04	0.88-1.20		0.990	224	
OCDF	0.87	0.76-1.02		1.98	38.5	
OCDD	0.89	0.76-1.02		1.98	1,220	

Homologue Group	EDL	RL	Result	
Total TCDF		0.990	63.9	EMPC
Total TCDD		0.990	192	EMPC
Total PeCDF		1.98	47.8	EMPC
Total PeCDD		0.990	199	
Total HxCDF		1.98	49.6	EMPC
Total HxCDD		1.98	286	
Total HpCDF		1.98	69.9	EMPC
Total HpCDD		1.98	828	

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 15.5

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 15.5

Reported in pg/g

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
Page 1 of 1

Sample ID: SP2-1-(1-5)

Lab Sample ID: WN15J
LIMS ID: 13-8566
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 19:45
Instrument/Analyst: AS1/PK

Sample Amount: 10.1 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.78	0.65-0.89	98.3	24-169	
13C-2,3,7,8-TCDD	0.79	0.65-0.89	79.1	25-164	
13C-1,2,3,7,8-PeCDF	1.57	1.32-1.78	96.0	24-185	
13C-2,3,4,7,8-PeCDF	1.56	1.32-1.78	95.5	21-178	
13C-1,2,3,7,8-PeCDD	1.57	1.32-1.78	84.4	25-181	
13C-1,2,3,4,7,8-HxCDF	0.52	0.43-0.59	95.3	26-152	
13C-1,2,3,6,7,8-HxCDF	0.52	0.43-0.59	90.0	26-123	
13C-2,3,4,6,7,8-HxCDF	0.52	0.43-0.59	83.0	28-136	
13C-1,2,3,7,8,9-HxCDF	0.52	0.43-0.59	105	29-147	
13C-1,2,3,4,7,8-HxCDD	1.26	1.05-1.43	83.4	32-141	
13C-1,2,3,6,7,8-HxCDD	1.25	1.05-1.43	78.8	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.45	0.37-0.51	81.5	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.45	0.37-0.51	85.0	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.05	0.88-1.20	79.6	23-140	
13C-OCDD	0.88	0.76-1.02	62.9	17-157	
37Cl4-2,3,7,8-TCDD			86.1	35-197	

Reported in Percent Recovery

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
Page 1 of 1

Sample ID: OPR-050213

Lab Sample ID: OPR-050213
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: NA
Date Received: NA

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 12:44
Instrument/Analyst: AS1/PK
Acid Cleanup: Yes
Silica-Carbon Cleanup: No

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00
Silica-Florisil Cleanup: Yes

Analyte	Ion Ratio	Ratio Limits	RL	Result
2,3,7,8-TCDF	0.75	0.65-0.89	1.00	24.4
2,3,7,8-TCDD	0.76	0.65-0.89	1.00	21.5
1,2,3,7,8-PeCDF	1.55	1.32-1.78	1.00	111
2,3,4,7,8-PeCDF	1.51	1.32-1.78	1.00	113
1,2,3,7,8-PeCDD	1.53	1.32-1.78	1.00	108
1,2,3,4,7,8-HxCDF	1.24	1.05-1.43	1.00	109
1,2,3,6,7,8-HxCDF	1.22	1.05-1.43	1.00	108
2,3,4,6,7,8-HxCDF	1.20	1.05-1.43	1.00	113
1,2,3,7,8,9-HxCDF	1.24	1.05-1.43	1.00	110
1,2,3,4,7,8-HxCDD	1.26	1.05-1.43	1.00	106
1,2,3,6,7,8-HxCDD	1.25	1.05-1.43	1.00	105
1,2,3,7,8,9-HxCDD	1.24	1.05-1.43	1.00	109
1,2,3,4,6,7,8-HpCDF	1.04	0.88-1.20	1.00	121
1,2,3,4,7,8,9-HpCDF	1.03	0.88-1.20	1.00	112
1,2,3,4,6,7,8-HpCDD	1.05	0.88-1.20	1.00	107
OCDF	0.88	0.76-1.02	2.00	238
OCDD	0.88	0.76-1.02	2.00	208

Homologue Group	EDL	RL	Result	
Total TCDF		1.00	25.7	EMPC
Total TCDD		1.00	22.3	EMPC
Total PeCDF		2.00	230	EMPC
Total PeCDD		1.00	109	EMPC
Total HxCDF		2.00	441	
Total HxCDD		2.00	320	EMPC
Total HpCDF		2.00	234	EMPC
Total HpCDD		2.00	109	

Reported in pg/g

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B

Sample ID: OPR-050213

Lab Sample ID: OPR-050213
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: NA
Date Received: NA

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 12:44
Instrument/Analyst: AS1/PK

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.77	0.65-0.89	108	22-152	
13C-2,3,7,8-TCDD	0.79	0.65-0.89	94.0	20-175	
13C-1,2,3,7,8-PeCDF	1.57	1.32-1.78	111	21-192	
13C-2,3,4,7,8-PeCDF	1.57	1.32-1.78	113	13-328	
13C-1,2,3,7,8-PeCDD	1.57	1.32-1.78	102	21-227	
13C-1,2,3,4,7,8-HxCDF	0.51	0.43-0.59	97.4	19-202	
13C-1,2,3,6,7,8-HxCDF	0.52	0.43-0.59	96.2	21-159	
13C-2,3,4,6,7,8-HxCDF	0.52	0.43-0.59	93.2	22-176	
13C-1,2,3,7,8,9-HxCDF	0.52	0.43-0.59	100	17-205	
13C-1,2,3,4,7,8-HxCDD	1.25	1.05-1.43	91.3	21-193	
13C-1,2,3,6,7,8-HxCDD	1.26	1.05-1.43	88.8	25-163	
13C-1,2,3,4,6,7,8-HpCDF	0.45	0.37-0.51	90.7	21-158	
13C-1,2,3,4,7,8,9-HpCDF	0.44	0.37-0.51	97.6	20-186	
13C-1,2,3,4,6,7,8-HpCDD	1.04	0.88-1.20	91.7	26-166	
13C-OCDD	0.88	0.76-1.02	71.4	13-198	
37Cl4-2,3,7,8-TCDD			98.9	31-191	

Reported in Percent Recovery

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
Page 1 of 1

Sample ID: OPR-050213

Lab Sample ID: OPR-050213
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: NA
Date Received: NA

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 12:44
Instrument/Analyst: AS1/PK

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00

Analyte	OPR	Spiked	Recovery	Limits
2,3,7,8-TCDF	24.4	20.0	122	75-158
2,3,7,8-TCDD	21.5	20.0	108	67-158
1,2,3,7,8-PeCDF	111	100	111	80-134
2,3,4,7,8-PeCDF	113	100	113	68-160
1,2,3,7,8-PeCDD	108	100	108	70-142
1,2,3,4,7,8-HxCDF	109	100	109	72-134
1,2,3,6,7,8-HxCDF	108	100	108	84-130
2,3,4,6,7,8-HxCDF	113	100	113	70-156
1,2,3,7,8,9-HxCDF	110	100	110	78-130
1,2,3,4,7,8-HxCDD	106	100	106	70-164
1,2,3,6,7,8-HxCDD	105	100	105	76-134
1,2,3,7,8,9-HxCDD	109	100	109	64-162
1,2,3,4,6,7,8-HpCDF	121	100	121	82-132
1,2,3,4,7,8,9-HpCDF	112	100	112	78-138
1,2,3,4,6,7,8-HpCDD	107	100	107	70-140
OCDF	238	200	119	63-170
OCDD	208	200	104	78-144

Reported in pg/g

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B
Page 1 of 1

Sample ID: MB-050213

Lab Sample ID: MB-050213
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: NA
Date Received: NA

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 11:54
Instrument/Analyst: AS1/PK
Acid Cleanup: Yes
Silica-Carbon Cleanup: No

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00
Silica-Florisil Cleanup: Yes

Analyte	Ion Ratio	Ratio Limits	EDL	RL	Result	
2,3,7,8-TCDF		0.65-0.89	0.0340	1.00	< 0.0340	U
2,3,7,8-TCDD		0.65-0.89	0.0560	1.00	< 0.0560	U
1,2,3,7,8-PeCDF		1.32-1.78	0.0340	1.00	< 0.0340	U
2,3,4,7,8-PeCDF		1.32-1.78	0.0360	1.00	< 0.0360	U
1,2,3,7,8-PeCDD		1.32-1.78	0.0400	1.00	< 0.0400	U
1,2,3,4,7,8-HxCDF		1.05-1.43	0.0240	1.00	< 0.0240	U
1,2,3,6,7,8-HxCDF		1.05-1.43	0.0240	1.00	< 0.0240	U
2,3,4,6,7,8-HxCDF		1.05-1.43	0.0260	1.00	< 0.0260	U
1,2,3,7,8,9-HxCDF		1.05-1.43	0.0300	1.00	< 0.0300	U
1,2,3,4,7,8-HxCDD		1.05-1.43	0.0460	1.00	< 0.0460	U
1,2,3,6,7,8-HxCDD		1.05-1.43	0.0460	1.00	< 0.0460	U
1,2,3,7,8,9-HxCDD		1.05-1.43	0.0480	1.00	< 0.0480	U
1,2,3,4,6,7,8-HpCDF	0.83	0.88-1.20		1.00	0.0700	JEMPC
1,2,3,4,7,8,9-HpCDF		0.88-1.20	0.0520	1.00	< 0.0520	U
1,2,3,4,6,7,8-HpCDD	0.78	0.88-1.20		1.00	0.156	JEMPC
OCDF	1.21	0.76-1.02		2.00	0.114	JEMPC
OCDD	0.94	0.76-1.02		2.00	1.01	J

Homologue Group	EDL	RL	Result	
Total TCDF	0.0340	1.00	< 0.0340	U
Total TCDD	0.0560	1.00	0.132	EMPC
Total PeCDF	0.0360	2.00	< 0.0360	U
Total PeCDD	0.0400	1.00	0.167	EMPC
Total HxCDF	0.0300	2.00	< 0.0300	U
Total HxCDD	0.0480	2.00	0.369	EMPC
Total HpCDF		2.00	0.149	EMPC
Total HpCDD		2.00	0.294	EMPC

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.00

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 0.07

Reported in pg/g

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Dioxins/Furans by EPA 1613B

Sample ID: MB-050213

Lab Sample ID: MB-050213
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/16/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: NA
Date Received: NA

Date Extracted: 05/02/13
Date Analyzed: 05/08/13 11:54
Instrument/Analyst: AS1/PK

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 20 uL
Dilution Factor: 1.00

Analyte	Ion Ratio	Ratio Limits	Result	Limits	Exceedance
13C-2,3,7,8-TCDF	0.78	0.65-0.89	114	24-169	
13C-2,3,7,8-TCDD	0.78	0.65-0.89	94.0	25-164	
13C-1,2,3,7,8-PeCDF	1.56	1.32-1.78	112	24-185	
13C-2,3,4,7,8-PeCDF	1.57	1.32-1.78	106	21-178	
13C-1,2,3,7,8-PeCDD	1.59	1.32-1.78	97.2	25-181	
13C-1,2,3,4,7,8-HxCDF	0.52	0.43-0.59	99.0	26-152	
13C-1,2,3,6,7,8-HxCDF	0.52	0.43-0.59	97.9	26-123	
13C-2,3,4,6,7,8-HxCDF	0.52	0.43-0.59	94.1	28-136	
13C-1,2,3,7,8,9-HxCDF	0.52	0.43-0.59	100	29-147	
13C-1,2,3,4,7,8-HxCDD	1.26	1.05-1.43	90.2	32-141	
13C-1,2,3,6,7,8-HxCDD	1.24	1.05-1.43	89.8	28-130	
13C-1,2,3,4,6,7,8-HpCDF	0.45	0.37-0.51	90.1	28-143	
13C-1,2,3,4,7,8,9-HpCDF	0.45	0.37-0.51	97.2	26-138	
13C-1,2,3,4,6,7,8-HpCDD	1.05	0.88-1.20	91.8	23-140	
13C-OCDD	0.88	0.76-1.02	69.9	17-157	
37Cl4-2,3,7,8-TCDD			100	35-197	

Reported in Percent Recovery

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: SP1-5-(1-5)
SAMPLE

Lab Sample ID: WN15A
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized: MW
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 19:33
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 8.8%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	31	< 31 U
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	**Aroclor 1254**	**31**	**180**
11096-82-5	**Aroclor 1260**	**31**	**120**
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	94.8%
Tetrachlorometaxylene	120%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: SP1-1-(1-5)
SAMPLE

Lab Sample ID: WN15B
LIMS ID: 13-8558
Matrix: Soil
Data Release Authorized: MW
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 19:53
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 17.5%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	< 32 U
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	85.5%
Tetrachlorometaxylene	112%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: SP1-6-(1-5)
SAMPLE

Lab Sample ID: WN15C
LIMS ID: 13-8559
Matrix: Soil
Data Release Authorized:
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 20:13
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 20.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	94.8%
Tetrachlorometaxylene	113%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: SP1-2-(1-5)
SAMPLE

Lab Sample ID: WN15D
LIMS ID: 13-8560
Matrix: Soil
Data Release Authorized:
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 20:33
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.4 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.8%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	**Aroclor 1260**	**32**	**44**
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	83.0%
Tetrachlorometaxylene	117%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: SP1-3-(1-5)
SAMPLE

Lab Sample ID: WN15E
LIMS ID: 13-8561
Matrix: Soil
Data Release Authorized:
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 20:53
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.3 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 18.4%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	**Aroclor 1254**	**33**	**39**
11096-82-5	**Aroclor 1260**	**33**	**78**
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	87.5%
Tetrachlorometaxylene	106%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: SP1-8-(1-5)
SAMPLE

Lab Sample ID: WN15F
LIMS ID: 13-8562
Matrix: Soil
Data Release Authorized: MW
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 21:14
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 20.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	88.5%
Tetrachlorometaxylene	109%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: SP1-7-(1-5)
SAMPLE

Lab Sample ID: WN15G
LIMS ID: 13-8563
Matrix: Soil
Data Release Authorized: MW
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 22:55
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.7 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.5%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	< 32 U
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	88.2%
Tetrachlorometaxylene	110%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546

Sample ID: SP1-4-(1-5)
SAMPLE

Lab Sample ID: WN15H
LIMS ID: 13-8564
Matrix: Soil
Data Release Authorized: MW
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 23:15
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.2 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 13.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	94.0%
Tetrachlorometaxylene	115%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: SP2-4-(1-5)
SAMPLE

Lab Sample ID: WN15I
LIMS ID: 13-8565
Matrix: Soil
Data Release Authorized: MW
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 23:35
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.8 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 15.1%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	31	< 31 U
53469-21-9	Aroclor 1242	31	< 31 U
12672-29-6	Aroclor 1248	31	< 31 U
11097-69-1	**Aroclor 1254**	**31**	**33**
11096-82-5	**Aroclor 1260**	**31**	**55**
11104-28-2	Aroclor 1221	31	< 31 U
11141-16-5	Aroclor 1232	31	< 31 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	95.0%
Tetrachlorometaxylene	108%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: SP2-1-(1-5)
SAMPLE

Lab Sample ID: WN15J
LIMS ID: 13-8566
Matrix: Soil
Data Release Authorized: MW
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 23:56
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 10.4%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	Aroclor 1254	32	< 32 U
11096-82-5	Aroclor 1260	32	< 32 U
11104-28-2	Aroclor 1221	32	< 32 U
11141-16-5	Aroclor 1232	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	94.2%
Tetrachlorometaxylene	114%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546

Sample ID: SP2-2-(1-5)
SAMPLE

Lab Sample ID: WN15K
LIMS ID: 13-8567
Matrix: Soil
Data Release Authorized: MW
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 00:16
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.2 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 12.9%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	**Aroclor 1260**	**33**	**54**
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	96.2%
Tetrachlorometaxylene	111%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: SP2-3-(1-5)
SAMPLE

Lab Sample ID: WN15L
LIMS ID: 13-8568
Matrix: Soil
Data Release Authorized: MW
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/11/13 00:36
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.6 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 21.3%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	32	< 32 U
53469-21-9	Aroclor 1242	32	< 32 U
12672-29-6	Aroclor 1248	32	< 32 U
11097-69-1	**Aroclor 1254**	**32**	**39**
11096-82-5	**Aroclor 1260**	**32**	**67**
11104-28-2	**Aroclor 1221**	**32**	**85 P**
11141-16-5	Aroclor 1232	32	< 32 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	86.8%
Tetrachlorometaxylene	98.5%

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB SOIL/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
SP1-5-(1-5)	94.8%	35-133	120%*	53-116	1
SP1-1-(1-5)	85.5%	35-133	112%	53-116	0
SP1-6-(1-5)	94.8%	35-133	113%	53-116	0
SP1-2-(1-5)	83.0%	35-133	117%*	53-116	1
SP1-3-(1-5)	87.5%	35-133	106%	53-116	0
MB-043013	97.2%	59-115	116%*	58-112	1
LCS-043013	95.5%	59-115	116%*	58-112	1
SP1-8-(1-5)	88.5%	35-133	109%	53-116	0
SP1-8-(1-5) MS	91.2%	35-133	112%	53-116	0
SP1-8-(1-5) MSD	92.0%	35-133	114%	53-116	0
SP1-7-(1-5)	88.2%	35-133	110%	53-116	0
SP1-4-(1-5)	94.0%	35-133	115%	53-116	0
SP2-4-(1-5)	95.0%	35-133	108%	53-116	0
SP2-1-(1-5)	94.2%	35-133	114%	53-116	0
SP2-2-(1-5)	96.2%	35-133	111%	53-116	0
SP2-3-(1-5)	86.8%	35-133	98.5%	53-116	0

Microwave (MARS) Control Limits PCBSMI
Prep Method: SW3546
Log Number Range: 13-8557 to 13-8568

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
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Sample ID: SP1-8-(1-5)
MS/MSD

Lab Sample ID: WN15F
LIMS ID: 13-8562
Matrix: Soil
Data Release Authorized: MW
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted MS/MSD: 04/30/13

Date Analyzed MS: 05/10/13 21:34
MSD: 05/10/13 21:54
Instrument/Analyst MS: ECD5/VTS
MSD: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount MS: 12.0 g-dry-wt
MSD: 12.0 g-dry-wt
Final Extract Volume MS: 4.0 mL
MSD: 4.0 mL
Dilution Factor MS: 1.00
MSD: 1.00
Silica Gel: No

Percent Moisture: 20.0%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 33 U	124	167	74.3%	129	166	77.7%	4.0%
Aroclor 1260	< 33 U	118	167	70.7%	118	166	71.1%	0.0%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
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Sample ID: SP1-8-(1-5)
MATRIX SPIKE

Lab Sample ID: WN15F
LIMS ID: 13-8562
Matrix: Soil
Data Release Authorized:
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 21:34
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 20.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	---
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	---
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	91.2%
Tetrachlorometaxylene	112%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546
Page 1 of 1

Sample ID: SP1-8-(1-5)
MATRIX SPIKE DUP

Lab Sample ID: WN15F
LIMS ID: 13-8562
Matrix: Soil
Data Release Authorized:
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 21:54
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 20.0%

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	---
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	---
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery	
Decachlorobiphenyl	92.0%
Tetrachlorometaxylene	114%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
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Sample ID: LCS-043013
LAB CONTROL

Lab Sample ID: LCS-043013
LIMS ID: 13-8562
Matrix: Soil
Data Release Authorized:
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: NA
Date Received: NA

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 19:13
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g-dry-wt
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	158	167	94.6%
Aroclor 1260	138	167	82.6%

PCB Surrogate Recovery

Decachlorobiphenyl	95.5%
Tetrachlorometaxylene	116%

Results reported in µg/kg (ppb)

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3546

Sample ID: MB-043013
METHOD BLANK

Lab Sample ID: MB-043013
LIMS ID: 13-8562
Matrix: Soil
Data Release Authorized: MW
Reported: 05/13/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: NA
Date Received: NA

Date Extracted: 04/30/13
Date Analyzed: 05/10/13 18:52
Instrument/Analyst: ECD5/VTS
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 12.0 g
Final Extract Volume: 4.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

CAS Number	Analyte	RL	Result
12674-11-2	Aroclor 1016	33	< 33 U
53469-21-9	Aroclor 1242	33	< 33 U
12672-29-6	Aroclor 1248	33	< 33 U
11097-69-1	Aroclor 1254	33	< 33 U
11096-82-5	Aroclor 1260	33	< 33 U
11104-28-2	Aroclor 1221	33	< 33 U
11141-16-5	Aroclor 1232	33	< 33 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	97.2%
Tetrachlorometaxylene	116%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3546

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

Matrix: Soil

Date Received: 04/23/13

Data Release Authorized:
Reported: 05/06/13

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	LOQ	Result
MB-043013	Method Blank	04/30/13	05/02/13	1.00	Diesel Range	5.0	< 5.0 U
13-8557	HC ID: ---		FID3B	1.0	Motor Oil Range	10	< 10 U
					o-Terphenyl		95.6%
WN15A	SP1-5-(1-5)	04/30/13	05/02/13	1.00	**Diesel Range**	**27**	**63**
13-8557	HC ID: **DIESEL/MOTOR OIL**		FID3B	5.0	**Motor Oil Range**	**55**	**190**
					o-Terphenyl		82.1%
WN15B	SP1-1-(1-5)	04/30/13	05/02/13	1.00	**Diesel Range**	**6.0**	**18**
13-8558	HC ID: **DRO/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**12**	**75**
					o-Terphenyl		72.1%
WN15C	SP1-6-(1-5)	04/30/13	05/02/13	1.00	**Diesel Range**	**6.2**	**16**
13-8559	HC ID: **DRO/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**12**	**68**
					o-Terphenyl		70.2%
WN15D	SP1-2-(1-5)	04/30/13	05/02/13	1.00	**Diesel Range**	**28**	**64**
13-8560	HC ID: **DRO/MOTOR OIL**		FID3B	5.0	**Motor Oil Range**	**56**	**300**
					o-Terphenyl		87.8%
WN15E	SP1-3-(1-5)	04/30/13	05/02/13	1.00	**Diesel Range**	**6.1**	**34**
13-8561	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**12**	**100**
					o-Terphenyl		75.8%
WN15F	SP1-8-(1-5)	04/30/13	05/02/13	1.00	**Diesel Range**	**6.2**	**28**
13-8562	HC ID: **DRO/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**12**	**95**
					o-Terphenyl		55.8%
WN15G	SP1-7-(1-5)	04/30/13	05/02/13	1.00	**Diesel Range**	**5.5**	**21**
13-8563	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**11**	**96**
					o-Terphenyl		87.0%
WN15H	SP1-4-(1-5)	04/30/13	05/02/13	1.00	**Diesel Range**	**5.7**	**11**
13-8564	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**12**	**33**
					o-Terphenyl		87.1%
WN15I	SP2-4-(1-5)	04/30/13	05/02/13	1.00	**Diesel Range**	**5.8**	**33**
13-8565	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**12**	**140**
					o-Terphenyl		73.5%
WN15J	SP2-1-(1-5)	04/30/13	05/02/13	1.00	**Diesel Range**	**5.6**	**21**
13-8566	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**11**	**110**
					o-Terphenyl		89.9%
WN15K	SP2-2-(1-5)	04/30/13	05/02/13	1.00	**Diesel Range**	**5.7**	**22**
13-8567	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**12**	**86**
					o-Terphenyl		83.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3546

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

Matrix: Soil

Date Received: 04/23/13

Data Release Authorized:
Reported: 05/06/13

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DL	Range/Surrogate	LOQ	Result
WN15L	SP2-3-(1-5)	04/30/13	05/02/13	1.00	**Diesel Range**	**6.4**	**24**
13-8568	HC ID: **DIESEL/MOTOR OIL**		FID3B	1.0	**Motor Oil Range**	**13**	**96**
					o-Terphenyl		74.2%

Reported in mg/kg (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
LOQ-Limit of Quantitation

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b006.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15MBS1
Client ID: WN15MBS1
Injection: 02-MAY-2013 11:08
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	94711	7
C8	0.847	0.012	2623	4776	WATPHD	(C12-C24)	298502	26.32
C10	2.253	-0.001	723	687	WATPHM	(C24-C38)	79977	7.25
C12	3.043	0.002	1587	1022	AK102	(C10-C25)	354825	25.72
C14	3.616	-0.004	2364	3063	AK103	(C25-C36)	64657	8.84
C16	4.126	0.008	2021	437	OR.DIES	(C10-C28)	372536	24.22
C18	4.558	-0.009	3014	3247				
C20	4.992	0.002	2580	2389				
C22	5.387	-0.002	1234	965				
C24	5.770	0.010	1080	444				
C25	5.930	-0.004	719	338				
C26	6.108	-0.006	657	331				
C28	6.423	-0.004	870	797	IT.DIES	(C10-C24)	351552	25.50
C32	6.976	-0.001	3273	3229				
C34	7.208	-0.006	573	247	CREOSOT	(C8-C22)	276709	85.58
Filter Peak	----							
C36	7.437	0.006	624	122	BUNKERC	(C10-C38)	431528	87.98
o-terph	4.676	-0.001	1024735	624360	JET-A	(C10-C18)	256349	17.80
Triacon Surr	6.721	-0.005	820526	606830				

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	624360	43.0	95.6
Triacontane	606830	39.7	88.2

JW 5/6/13

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

WN15 00002

Data File: /chem3/fid3b.i/20130502.b/0502b006.d

Date : 02-MAY-2013 11:08

Client ID: WN15MBS1

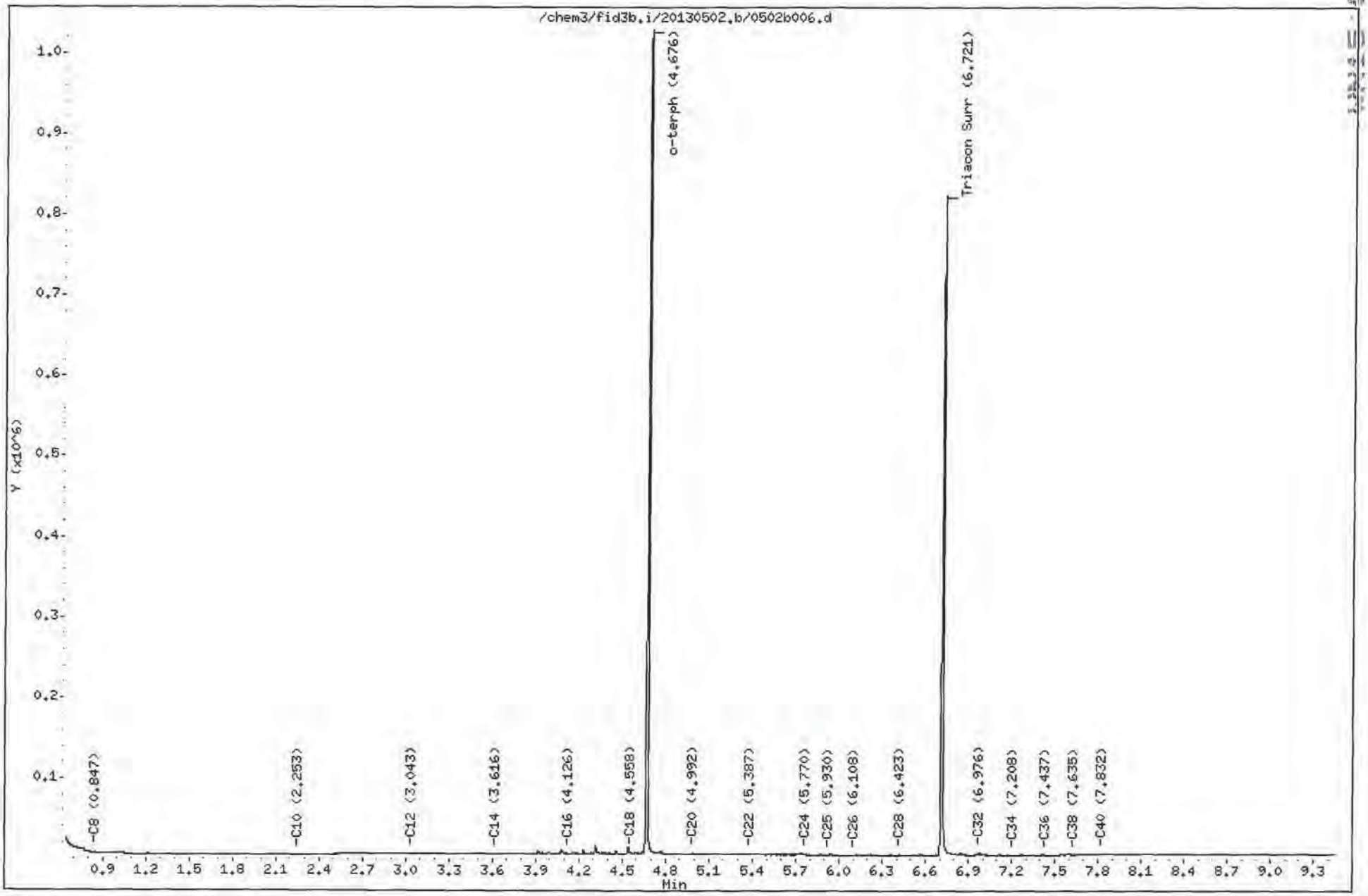
Sample Info: WN15MBS1

Instrument: fid3b.i

Operator: JW

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b008.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15A
Client ID: SP1-5-(1-5)
Injection: 02-MAY-2013 11:48
Dilution Factor: 5

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	73912	5
C8	0.833	-0.002	3174	2531	WATPHD	(C12-C24)	1299078	114.56
C10	2.260	0.006	601	684	WATPHM	(C24-C38)	3807112	345.22
C12	3.039	-0.002	500	252	AK102	(C10-C25)	1435546	104.08 M
C14	3.619	-0.002	2673	2609	AK103	(C25-C36)	3387867	463.01 M
C16	4.117	-0.001	4808	5537	OR.DIES	(C10-C28)	2637065	171.44 M
C18	4.566	-0.002	7693	8302				
C20	4.988	-0.002	12251	8414				
C22	5.392	0.003	19154	2278				
C24	5.770	0.010	29647	6434				
C25	5.931	-0.004	30232	16750				
C26	6.112	-0.002	27882	14798				
C28	6.428	0.000	41842	30566	IT.DIES	(C10-C24)	1318016	95.58
C32	6.975	-0.002	41722	20205				
C34	7.216	0.001	49421	59798	CREOSOT	(C8-C22)	793979	245.56
Filter Peak	----							
C36	7.428	-0.003	28278	17578	BUNKERC	(C10-C38)	5125128	1044.92
o-terph	4.672	-0.005	209553	107273	JET-A	(C10-C18)	226783	15.75
Triacon Surr	6.717	-0.009	170325	105815				

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	107273	7.4	82.1
Triacontane	105815	6.9	76.9

JW 5/6/13

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

WN15 09899

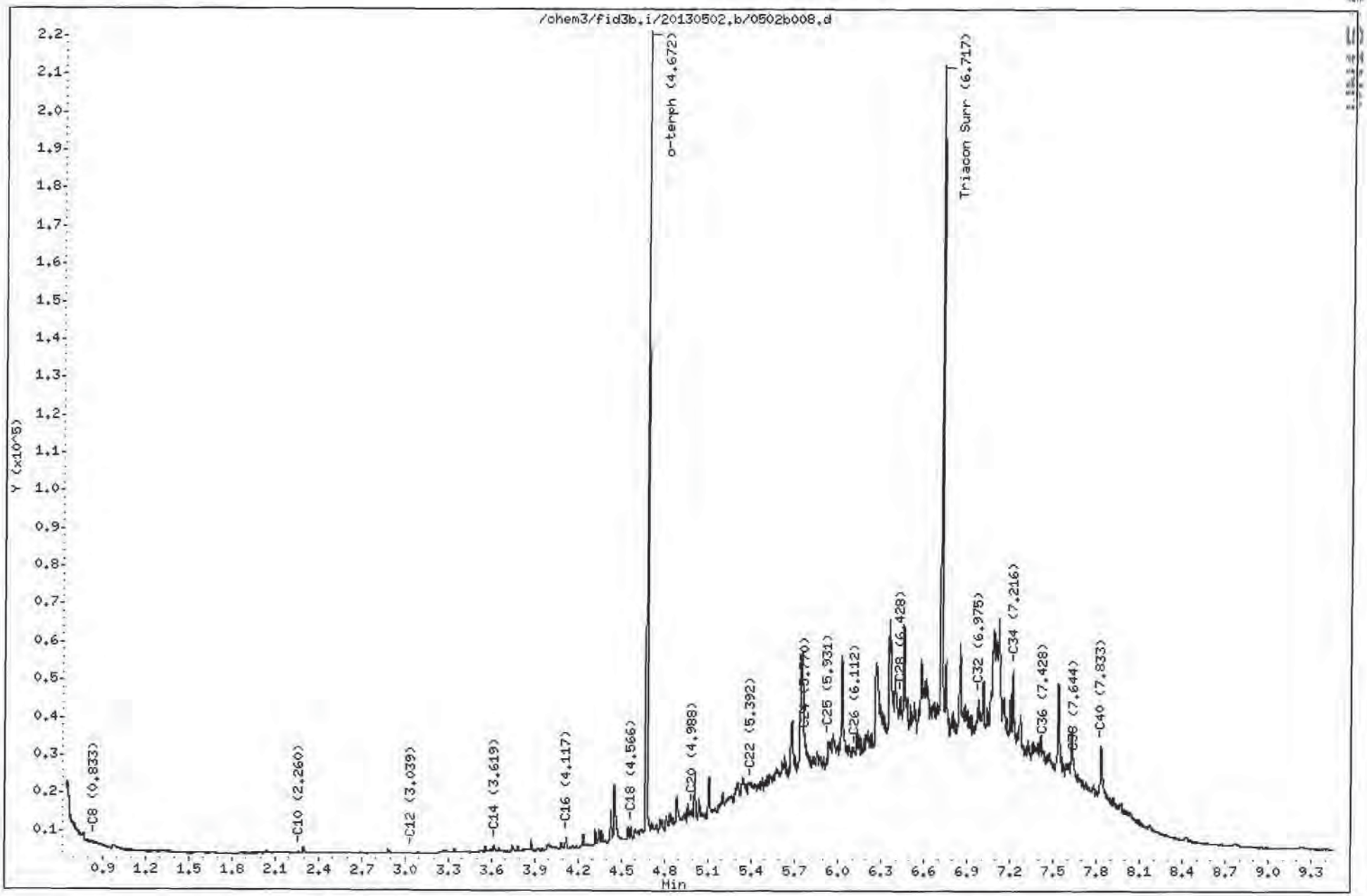
Data File: /chem3/fid3b.i/20130502.b/0502b008.d
Date : 02-MAY-2013 11:48
Client ID: SP1-5-(1-5)
Sample Info: WN15A,5

Column phase: RTX-1

Instrument: fid3b.i

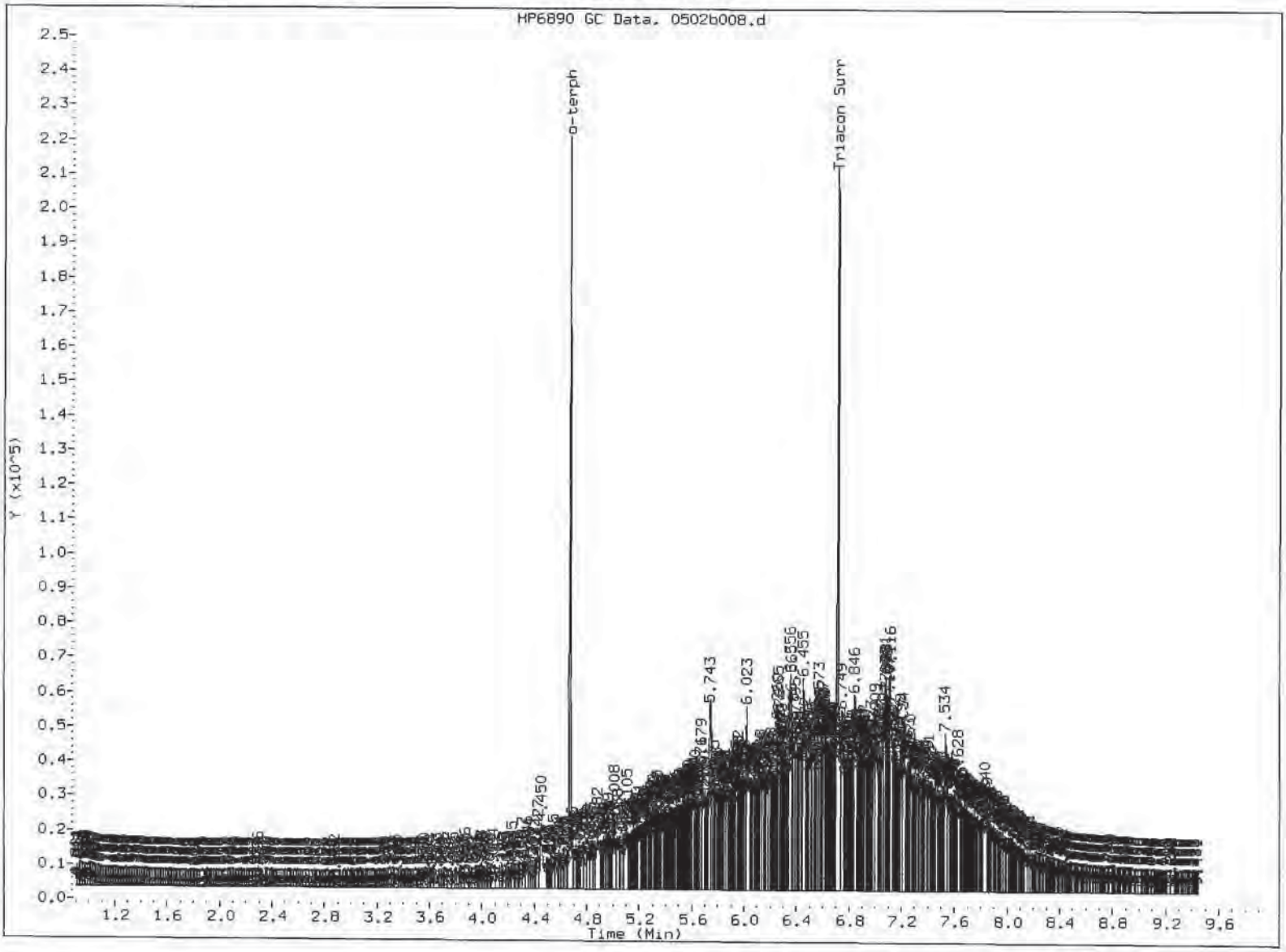
Operator: JW
Column diameter: 0.25

JC 5/6/13



FID:3B-2C/RTX-1 WN15A

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JC

Date: 5/6/10

WN15 · 00008

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b009.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15B
Client ID: SP1-1-(1-5)
Injection: 02-MAY-2013 12:08
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	162320	12
C8	0.837	0.001	3324	2539	WATPHD	(C12-C24)	1678119	147.98
C10	2.260	0.005	1312	1695	WATPHM	(C24-C38)	6884835	624.30
C12	3.041	0.000	9652	7547	AK102	(C10-C25)	1872876	135.78 M
C14	3.619	-0.002	4841	4752	AK103	(C25-C36)	6115571	835.80 M
C16	4.118	0.000	4850	5316	OR.DIES	(C10-C28)	3662431	238.10 M
C18	4.566	-0.002	12185	12573				
C20	4.989	-0.001	13431	7886				
C22	5.392	0.003	18010	3889				
C24	5.761	0.002	28824	10633				
C25	5.932	-0.003	51110	47634				
C26	6.112	-0.002	35670	11149				
C28	6.426	-0.002	63193	34558	IT.DIES	(C10-C24)	1754046	127.21
C32	6.978	0.000	95784	139958				
C34	7.213	-0.002	71174	22245	CREOSOT	(C8-C22)	1113593	344.41
Filter Peak	----							
C36	7.434	0.003	63549	49851	BUNKERC	(C10-C38)	8638881	1761.31
o-terph	4.679	0.002	817836	470897	JET-A	(C10-C18)	501767	34.85
Triacon Surr	6.725	-0.001	692691	482836				

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	470897	32.4	72.1
Triacontane	482836	31.6	70.2

JW 5/6/13

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

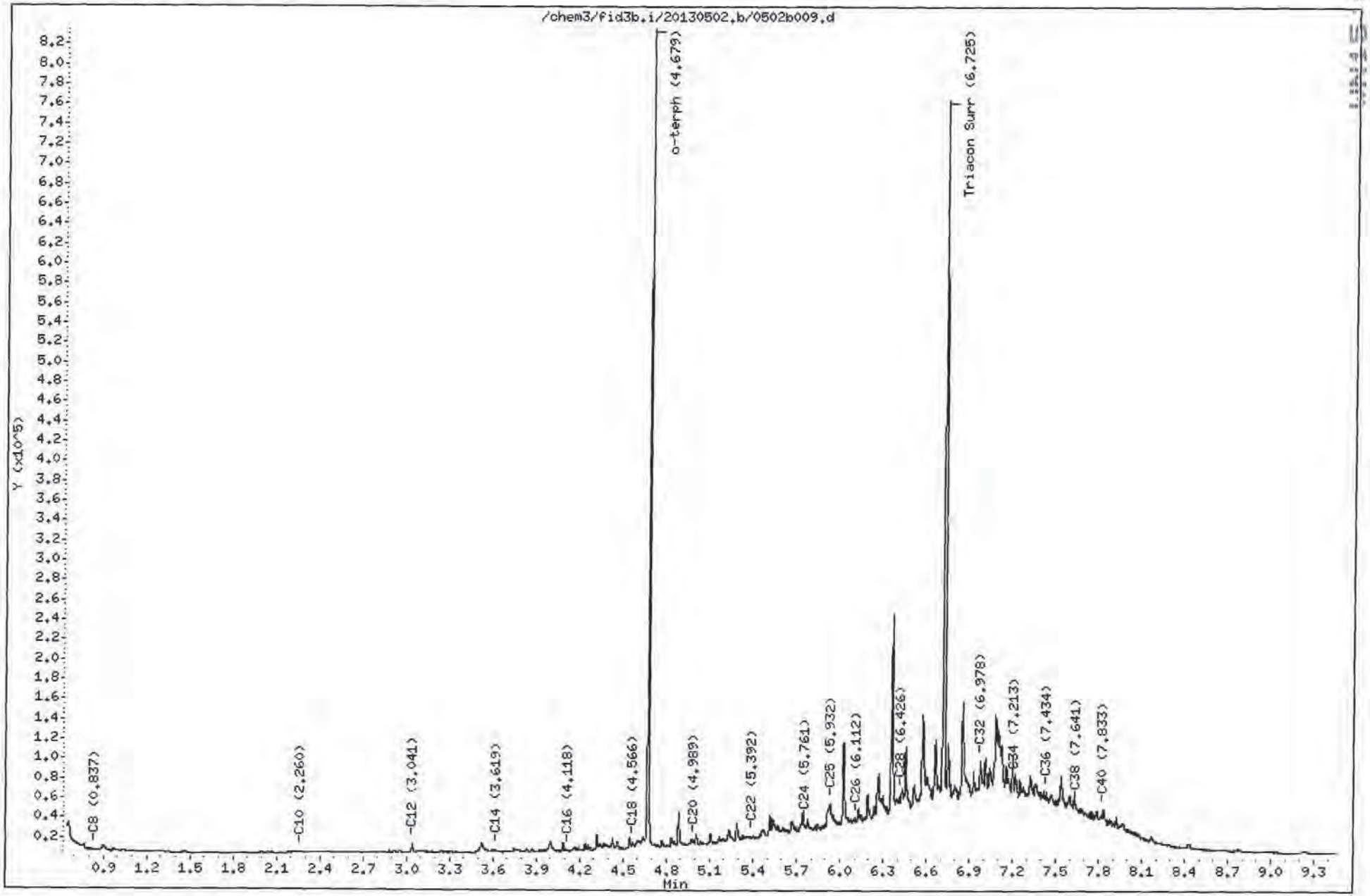
Data File: /chem3/fid3b.i/20130502.b/0502b009.d
Date : 02-MAY-2013 12:08
Client ID: SP1-1-(1-5)
Sample Info: WN15B

Instrument: fid3b.i

Operator: JW
Column diameter: 0.25

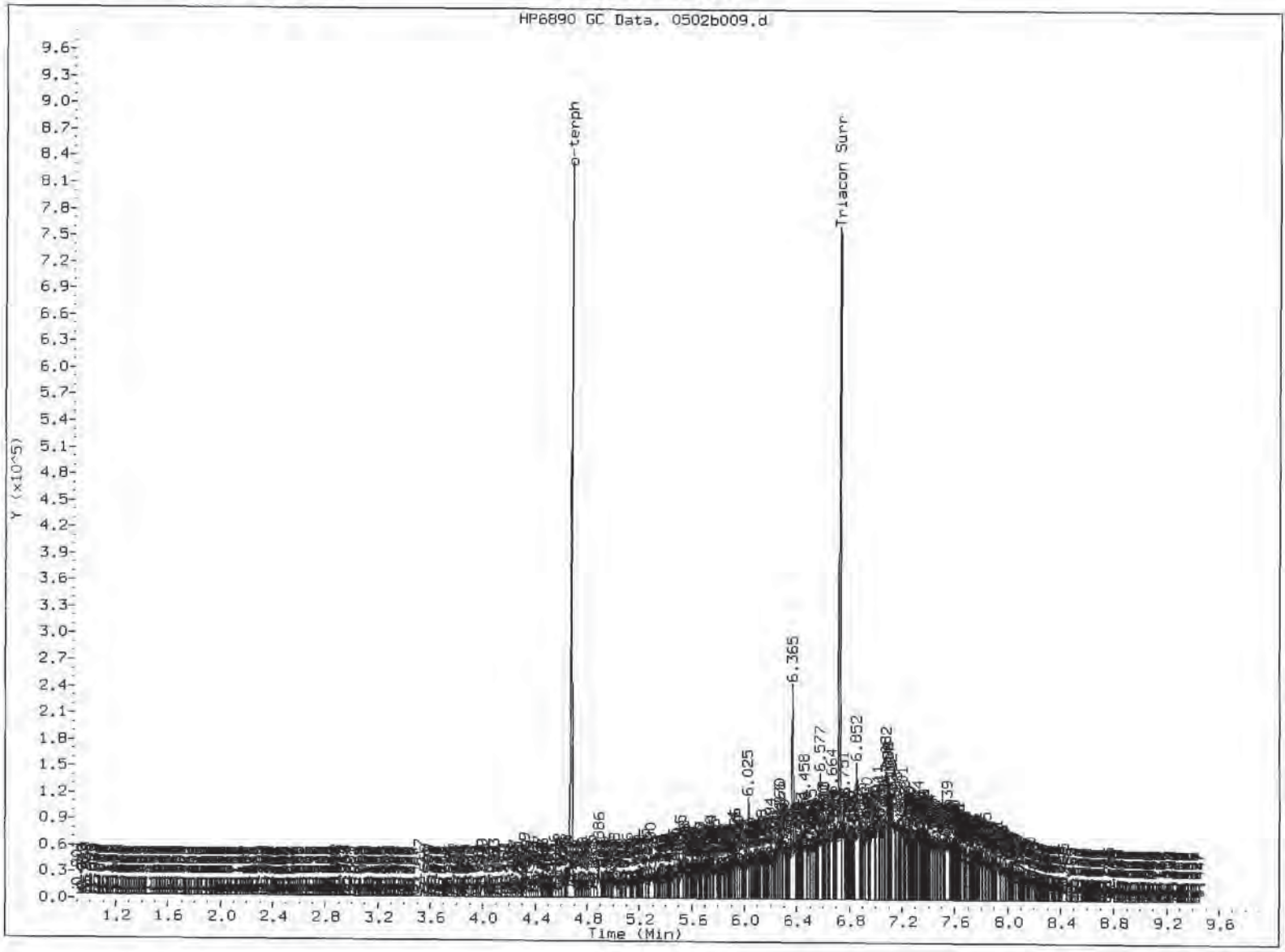
Column phase: RTX-1

JW 5/6/13



FID:3B-2C/RTX-1 WN15B

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: JU Date: 5/6/13

WN15 00000

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b024.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15C
Client ID: SP1-6-(1-5)
Injection: 02-MAY-2013 17:06
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc	
Toluene	----				WATPHG	(Tol-C12)	109853	8	
C8	0.842	0.006	3328	2780	WATPHD	(C12-C24)	1490544	131.44	
C10	2.257	0.002	1090	1428	WATPHM	(C24-C38)	5974240	541.73	
C12	3.042	0.001	1815	2072	AK102	(C10-C25)	1647587	119.45	M
C14	3.619	-0.001	3796	3765	AK103	(C25-C36)	5200433	710.73	M
C16	4.117	-0.002	3334	4135	OR.DIES	(C10-C28)	3117437	202.67	M
C18	4.565	-0.003	7760	7689					
C20	4.988	-0.002	11294	8435					
C22	5.383	-0.006	17277	12225					
C24	5.754	-0.005	29242	24029					
C25	5.933	-0.002	37072	27688					
C26	6.108	-0.006	32134	18510					
C28	6.427	-0.001	56695	51973	IT.DIES	(C10-C24)	1532243	111.12	
C32	6.979	0.001	83306	59241					
C34	7.219	0.004	78034	63676	CREOSOT	(C8-C22)	889355	275.06	
Filter Peak	----								
C36	7.429	-0.002	61159	24070	BUNKERC	(C10-C38)	7506483	1530.44	
o-terph	4.678	0.000	757761	458366	JET-A	(C10-C18)	340643	23.66	
Triacon Surr	6.722	-0.004	670763	444153					

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	458366	31.6	70.2
Triacontane	444153	29.1	64.6

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

5/16/13

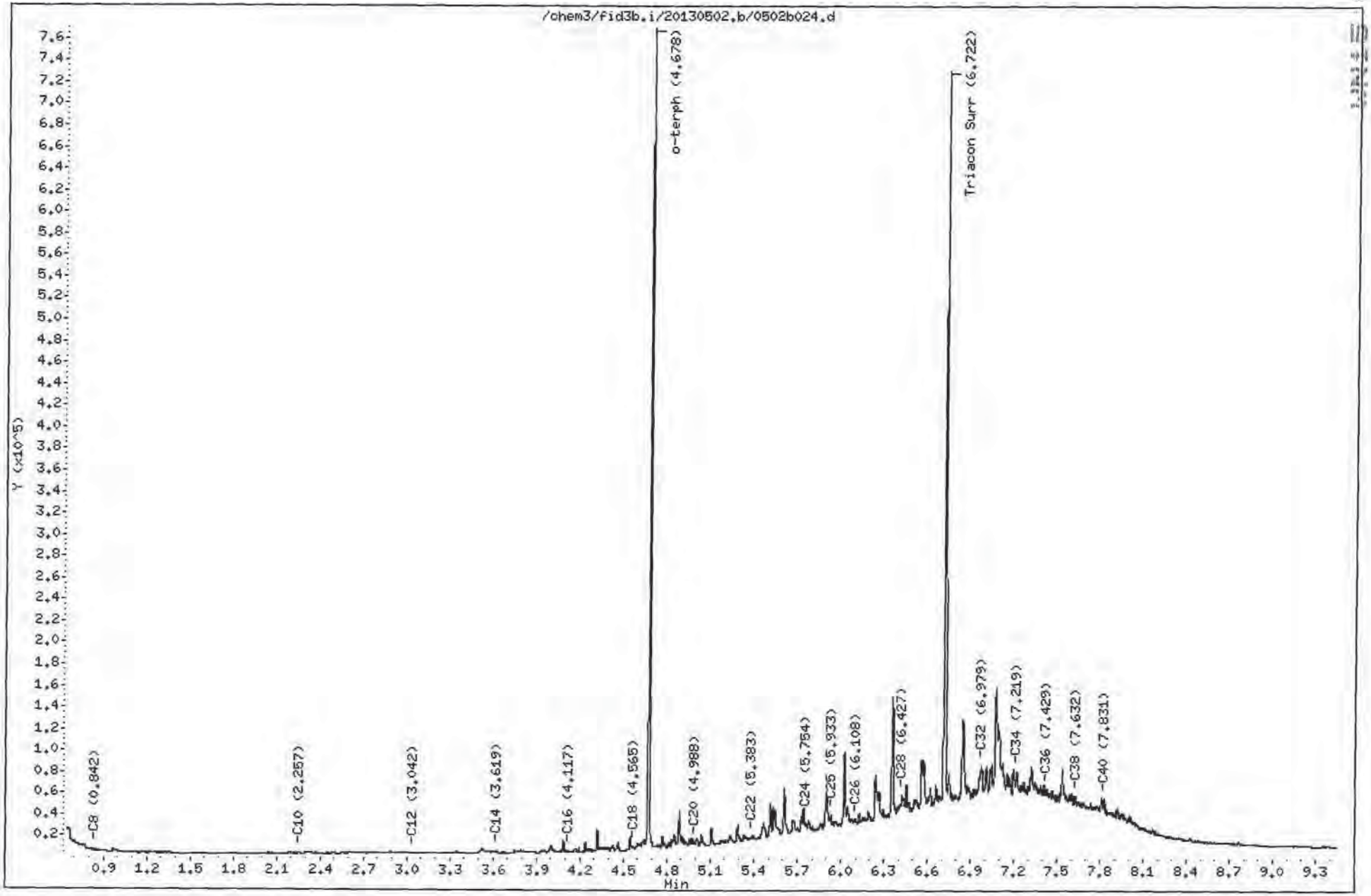
Data File: /chem3/fid3b.i/20130502.b/0502b024.d
Date : 02-MAY-2013 17:06
Client ID: SP1-6-(1-5)
Sample Info: WN15C

Column phase: RTX-1

Instrument: fid3b.i

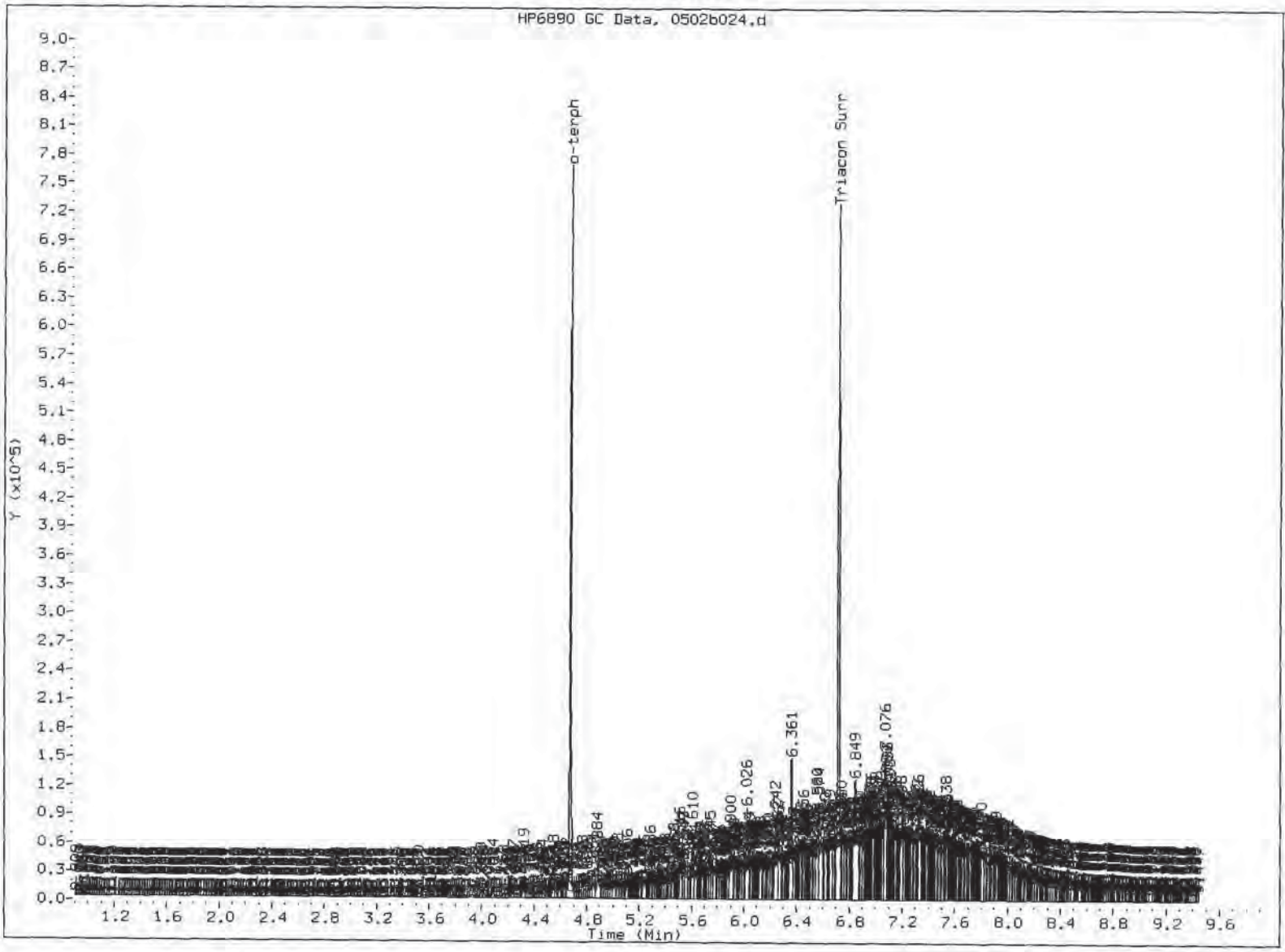
Operator: JW
Column diameter: 0.25

JW 5/6/13



FID:3B-2C/RTX-1 WN15C

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JU Date: 5/6/10

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b013.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15D
Client ID: SP1-2-(1-5)
Injection: 02-MAY-2013 13:29
Dilution Factor: 5

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	68733	5
C8	0.836	0.001	3241	2425	WATPHD	(C12-C24)	1287254	113.51
C10	2.259	0.005	439	497	WATPHM	(C24-C38)	5762406	522.52
C12	3.040	-0.001	485	122	AK102	(C10-C25)	1410622	102.27 M
C14	3.619	-0.001	2220	2373	AK103	(C25-C36)	5030191	687.47 M
C16	4.115	-0.003	3732	3560	OR.DIES	(C10-C28)	2849101	185.22 M
C18	4.563	-0.005	7219	7976				
C20	4.991	0.001	10716	3170				
C22	5.394	0.005	16445	1955				
C24	5.763	0.003	24240	6619				
C25	5.930	-0.004	32251	15910				
C26	6.112	-0.001	34124	6653				
C28	6.424	-0.003	53293	37567	IT.DIES	(C10-C24)	1302279	94.44
C32	6.975	-0.002	73833	74243				
C34	7.215	0.001	64727	16282	CREOSOT	(C8-C22)	812247	251.21
Filter Peak	----							
C36	7.428	-0.003	62021	64903	BUNKERC	(C10-C38)	7064685	1440.36
o-terph	4.671	-0.006	216695	114718	JET-A	(C10-C18)	270578	18.79
Triacon Surr	6.718	-0.007	189938	117703				

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	114718	7.9	87.8
Triacontane	117703	7.7	85.6

5/6/15

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

Data File: /chem3/fid3b.i/20130502.b/0502b013.d

Date : 02-MAY-2013 13:29

Client ID: SP1-2-(1-5)

Sample Info: WN15D,5

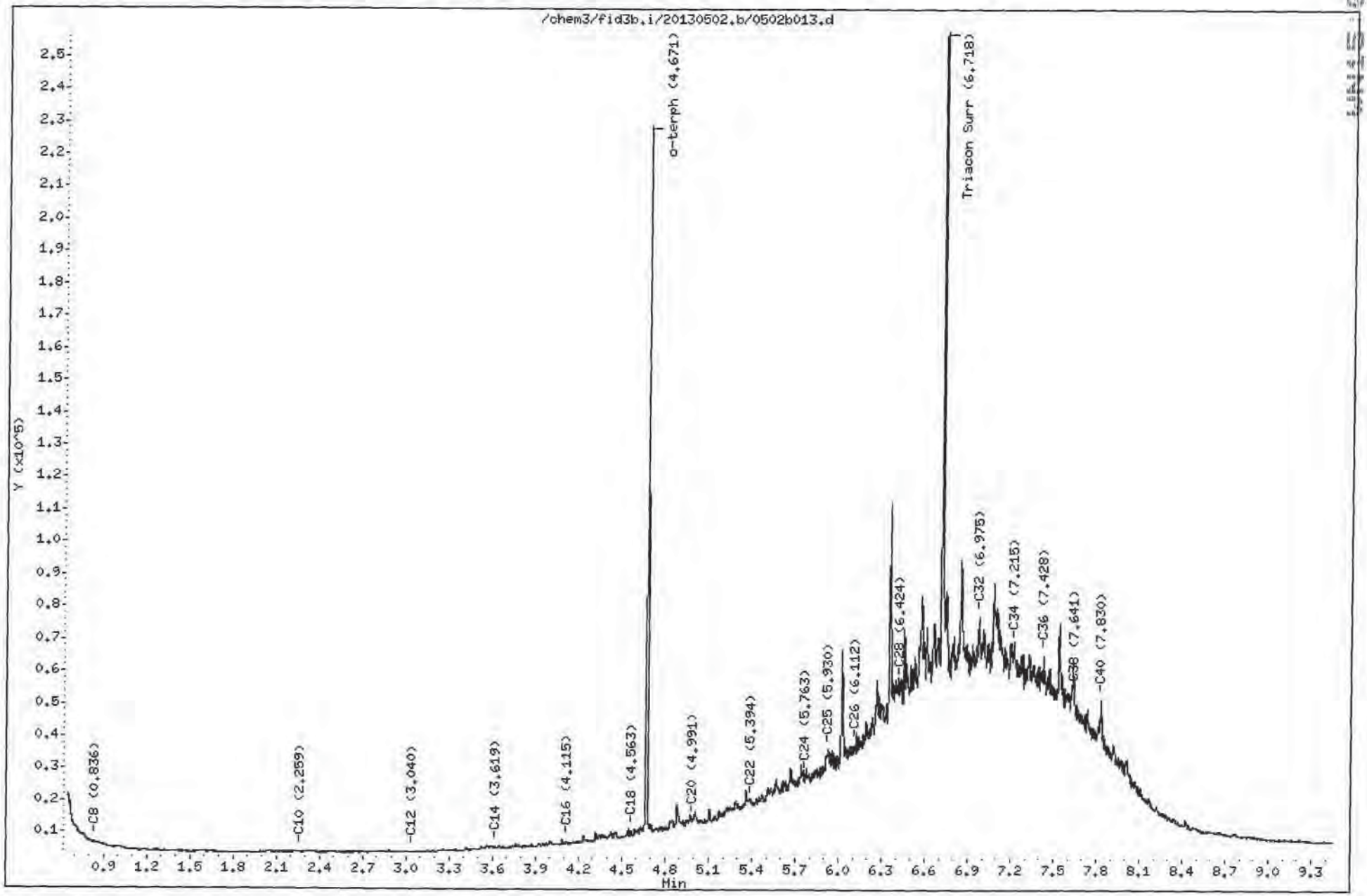
Column phase: RTX-1

Instrument: fid3b.i

Operator: JW

Column diameter: 0.25

JW 5/6/13



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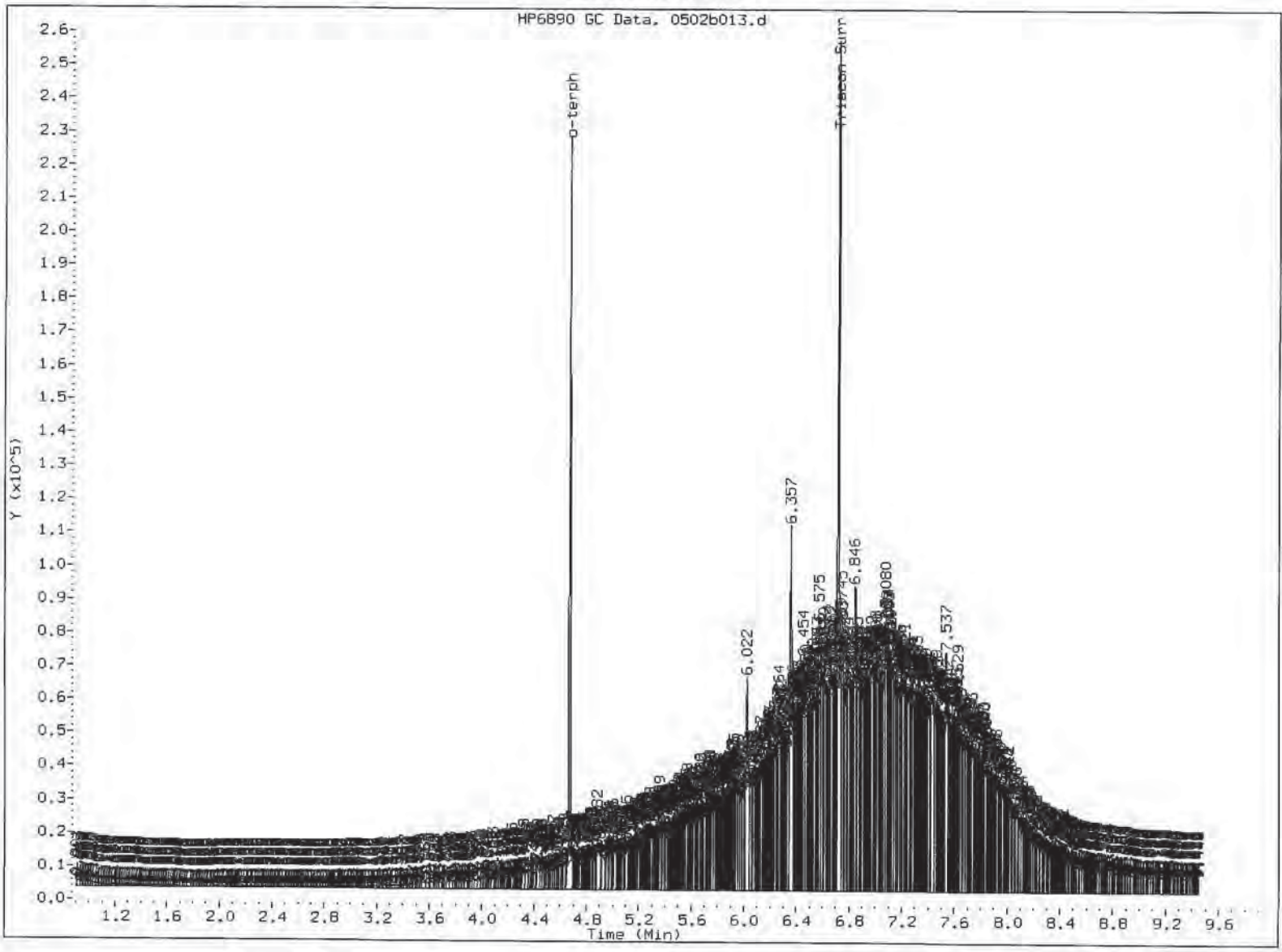
FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JC Date: 5/4/13

WN15 : 05405

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b014.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15E
Client ID: SP1-3-(1-5)
Injection: 02-MAY-2013 13:49
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	235645	17
C8	0.834	-0.002	4225	5550	WATPHD	(C12-C24)	3142521	277.12
C10	2.258	0.003	3163	3046	WATPHM	(C24-C38)	9130786	827.95
C12	3.041	0.001	3450	3770	AK102	(C10-C25)	3468237	251.45 M
C14	3.618	-0.002	8334	7350	AK103	(C25-C36)	8145577	1113.24 M
C16	4.117	-0.001	10249	9912	OR.DIES	(C10-C28)	6333801	411.77 M
C18	4.568	0.000	21777	21869				
C20	4.987	-0.003	25422	16129				
C22	5.387	-0.002	35320	28134				
C24	5.760	0.000	48577	9621				
C25	5.935	0.000	59847	38401				
C26	6.114	0.000	50052	10833				
C28	6.425	-0.003	81717	67856	IT.DIES	(C10-C24)	3276696	237.63
C32	6.976	-0.001	131245	50595				
C34	7.223	0.008	112236	65567	CREOSOT	(C8-C22)	2170858	671.39
Filter Peak	----							
C36	7.429	-0.002	64779	35613	BUNKERC	(C10-C38)	12407481	2529.66
o-terph	4.679	0.002	742552	495025	JET-A	(C10-C18)	933611	64.84
Triacon Surr	6.726	0.000	656184	507471				

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	495025	34.1	75.8
Triacontane	507471	33.2	73.8

JW 5/6/13

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

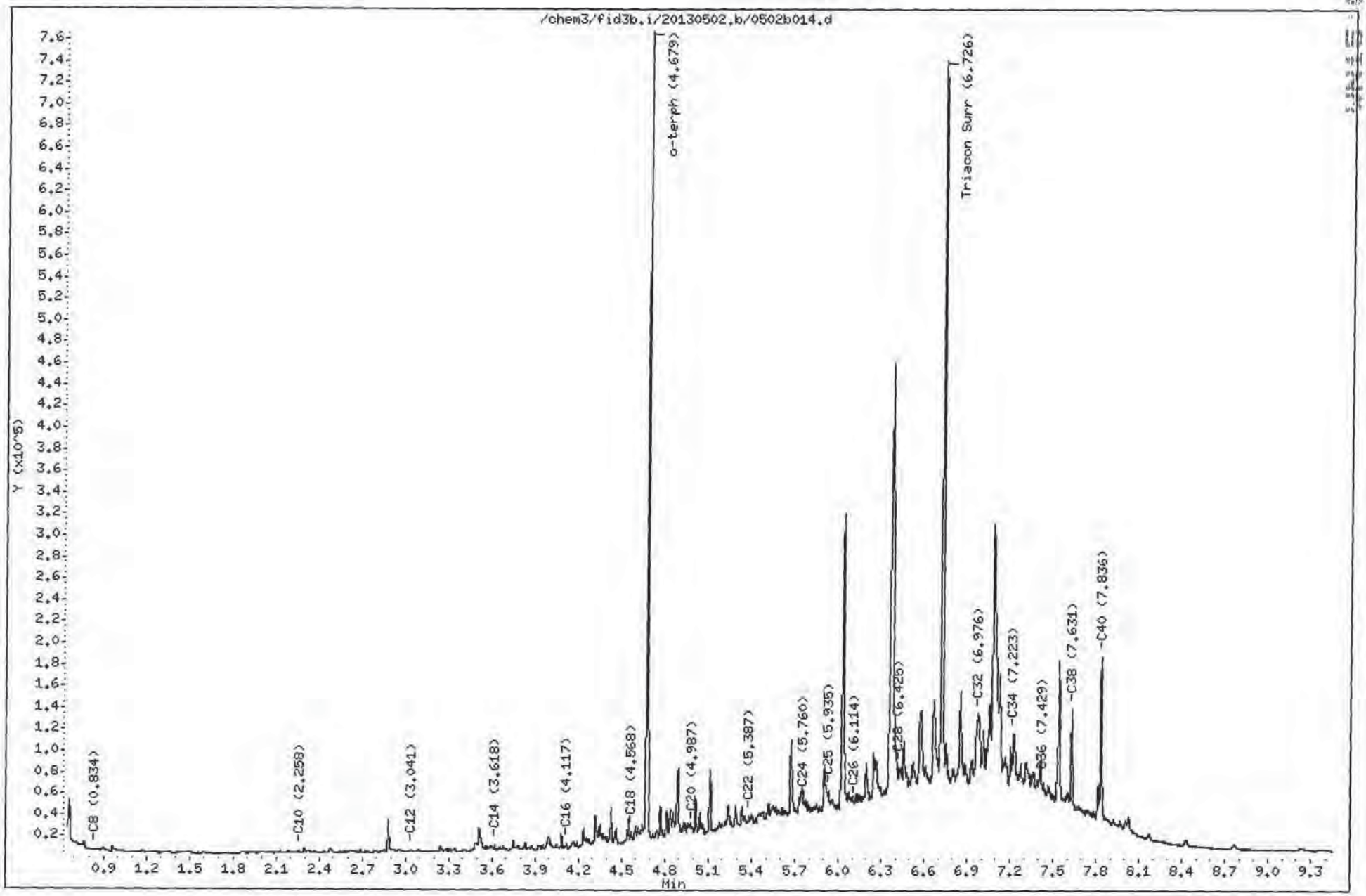
WN15 00186

Data File: /chem3/fid3b.i/20130502.b/0502b014.d
Date : 02-MAY-2013 13:49
Client ID: SP1-3-(1-5)
Sample Info: WN15E

Instrument: fid3b.i

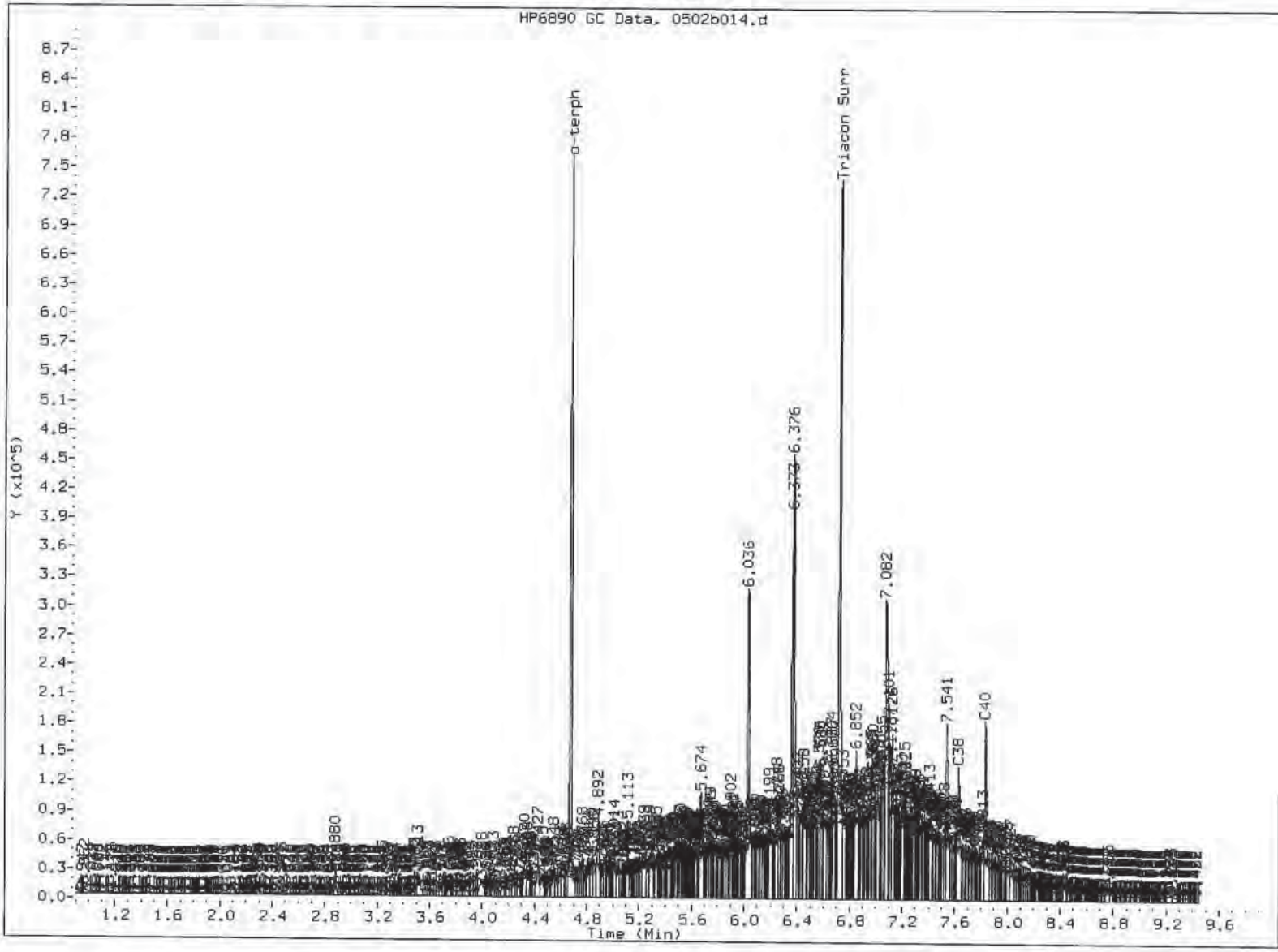
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:3B-2C/RTX-1 WN15E

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5). Skimmed surrogate

Analyst: JW Date: 5/6/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b015.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15F
Client ID: SP1-8-(1-5)
Injection: 02-MAY-2013 14:08
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	478301	35
C8	0.836	0.001	4888	6914	WATPHD	(C12-C24)	2531388	223.22
C10	2.258	0.004	3045	3023	WATPHM	(C24-C38)	8411506	762.73
C12	3.027	-0.013	4543	4133	AK102	(C10-C25)	2907540	210.80 M
C14	3.618	-0.002	9384	12115	AK103	(C25-C36)	7482018	1022.55 M
C16	4.116	-0.002	6907	7423	OR.DIES	(C10-C28)	5083064	330.46 M
C18	4.564	-0.004	19153	16850				
C20	4.988	-0.001	19133	16115				
C22	5.387	-0.001	23842	12391				
C24	5.760	0.000	38609	19437				
C25	5.935	0.000	50696	54398				
C26	6.116	0.003	43936	15415				
C28	6.428	0.001	82788	45451	IT.DIES	(C10-C24)	2755049	199.80
C32	6.978	0.001	120330	104758				
C34	7.216	0.001	83650	14901	CREOSOT	(C8-C22)	1768538	546.97
Filter Peak	----							
C36	7.435	0.004	74750	34456	BUNKERC	(C10-C38)	11166555	2276.66
o-terph	4.677	-0.001	674481	364154	JET-A	(C10-C18)	1048649	72.83
Triacon Surr	6.725	-0.001	539801	371555				

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	364154	25.1	55.8
Triacontane	371555	24.3	54.0

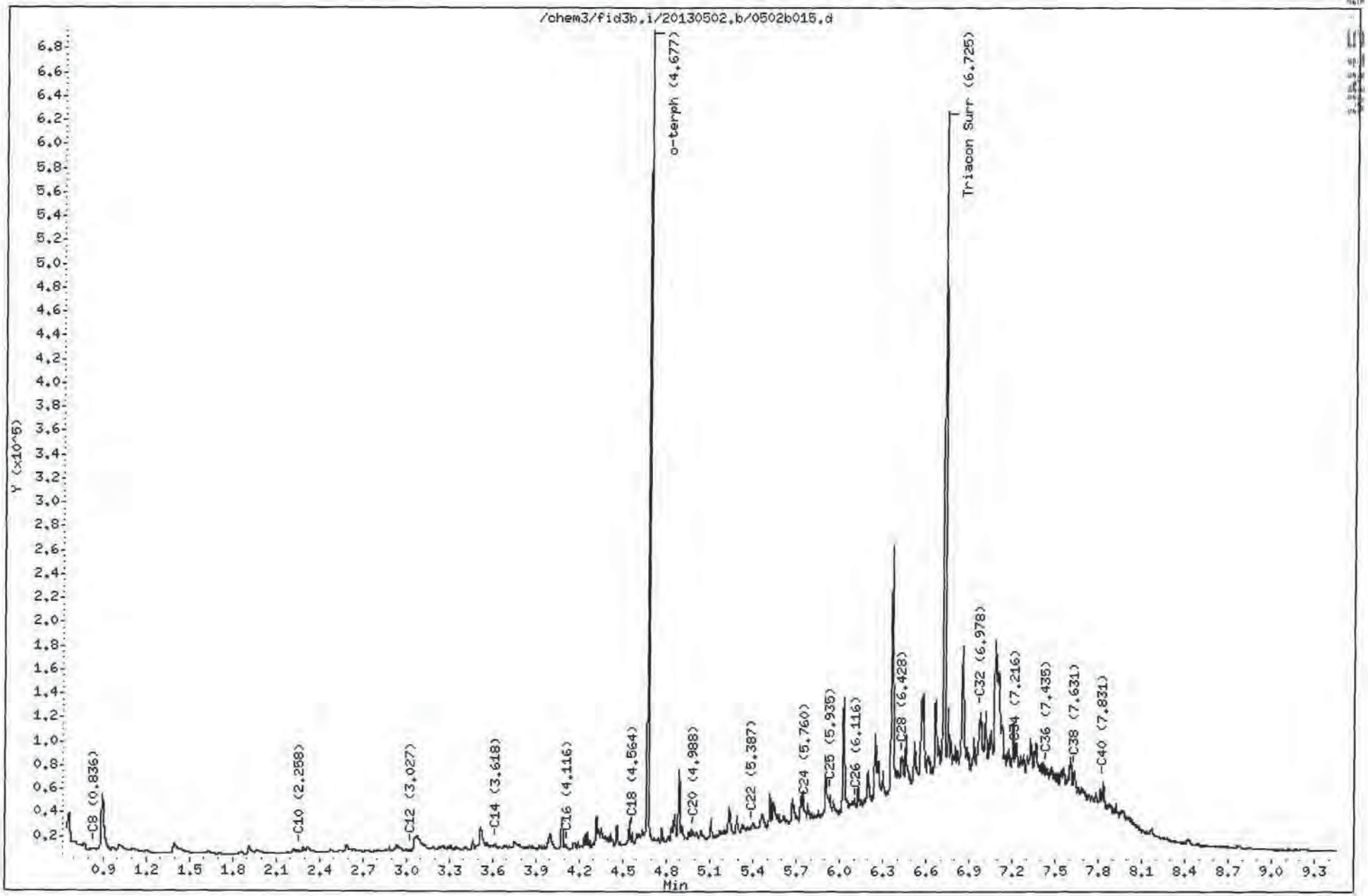
JCC 5/6/13

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

Data File: /chem3/fid3b.i/20130502.b/0502b015.d
Date : 02-MAY-2013 14:08
Client ID: SP1-8-(1-5)
Sample Info: WN15F

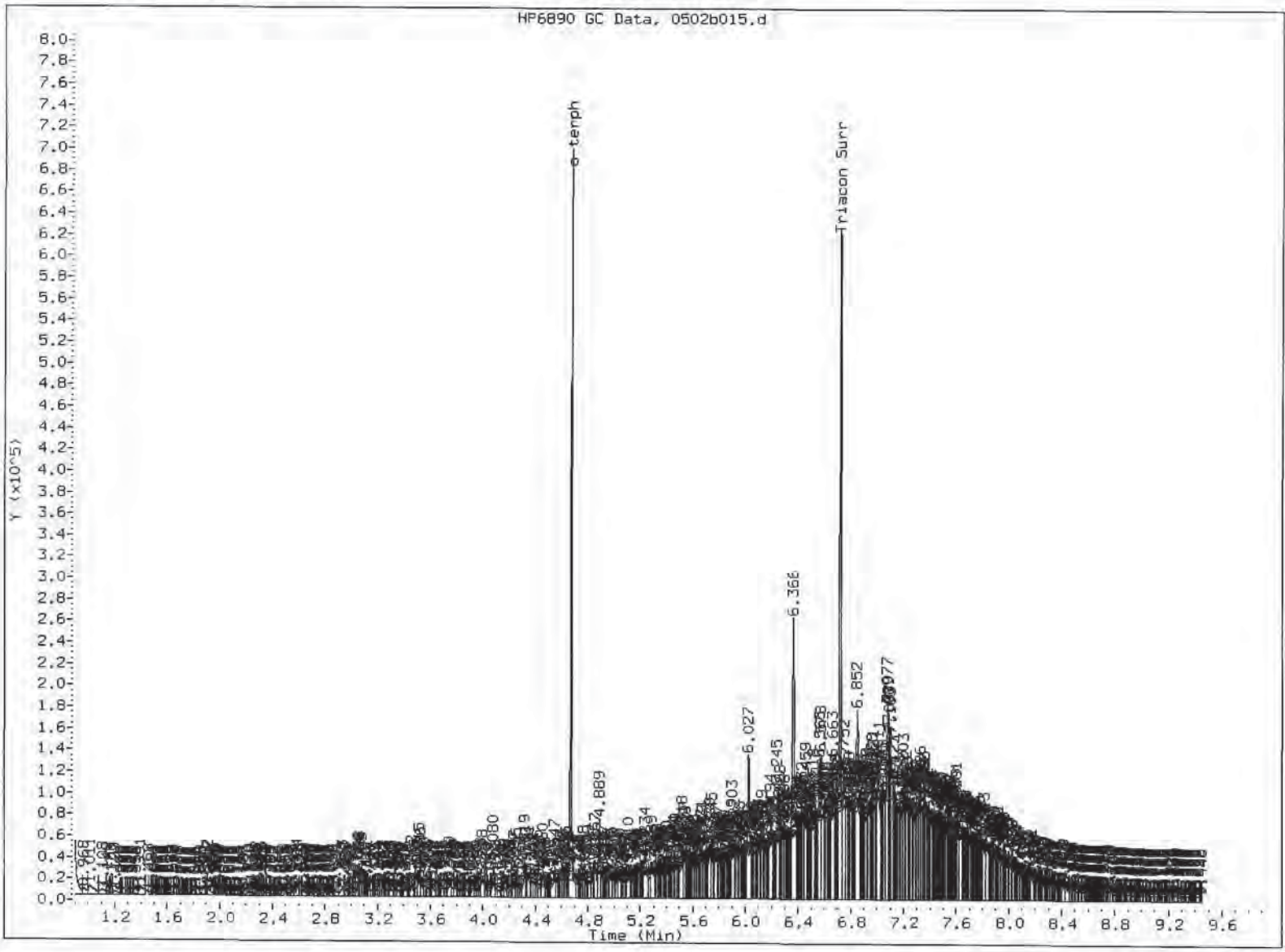
Instrument: fid3b.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:3B-2C/RTX-1 WN15F

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: JV Date: 5/6/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b025.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15G
Client ID: SP1-7-(1-5)
Injection: 02-MAY-2013 17:25
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc	
Toluene	----				WATPHG	(Tol-C12)	112578	8	
C8	0.831	-0.005	3475	2141	WATPHD	(C12-C24)	2136606	188.41	
C10	2.259	0.005	1277	1403	WATPHM	(C24-C38)	9573419	868.09	
C12	3.043	0.003	1581	1923	AK102	(C10-C25)	2379228	172.49	M
C14	3.620	0.000	6257	5949	AK103	(C25-C36)	8444337	1154.07	M
C16	4.117	-0.001	6654	5134	OR.DIES	(C10-C28)	4877158	317.07	M
C18	4.567	0.000	13903	13065					
C20	4.991	0.001	18144	15891					
C22	5.392	0.003	27628	14024					
C24	5.769	0.009	42204	7562					
C25	5.935	0.000	53030	28711					
C26	6.120	0.007	58364	36614					
C28	6.427	0.000	88964	26233	IT.DIES	(C10-C24)	2177917	157.95	
C32	6.979	0.002	124109	95893					
C34	7.220	0.005	107904	53434	CREOSOT	(C8-C22)	1314300	406.48	
Filter Peak	----								
C36	7.434	0.003	93142	59814	BUNKERC	(C10-C38)	11751336	2395.88	
o-terph	4.681	0.004	923794	567998	JET-A	(C10-C18)	452238	31.41	
Triacon Surr	6.729	0.003	799460	598966					

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	567998	39.1	87.0
Triacontane	598966	39.2	87.1

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

JW 5/6/13

WN15 00112

Data File: /chem3/fid3b.i/20130502.b/0502b025.d

Date : 02-MAY-2013 17:25

Client ID: SP1-7-(1-5)

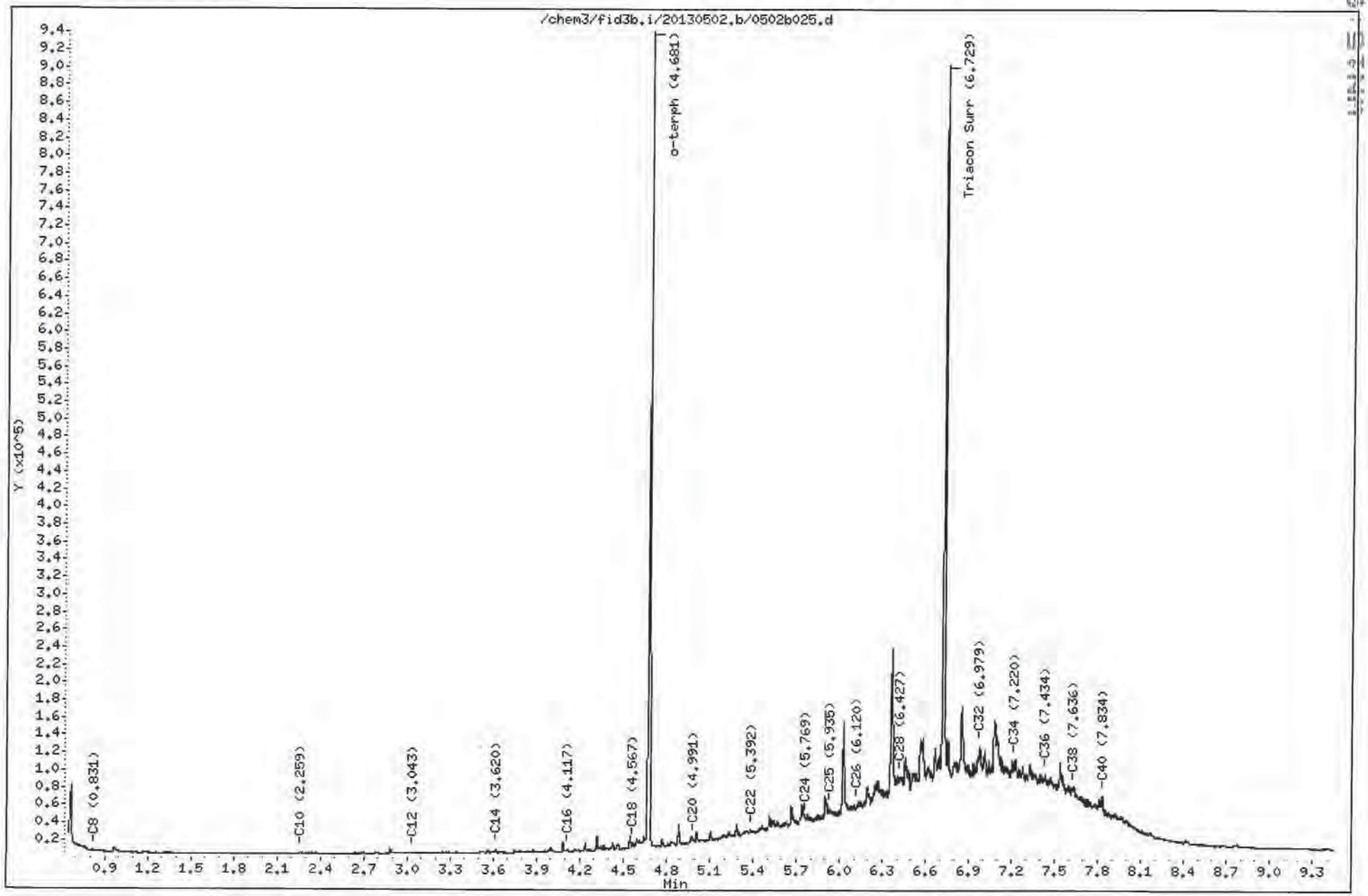
Sample Info: WN15G

Column phase: RTX-1

Instrument: fid3b.i

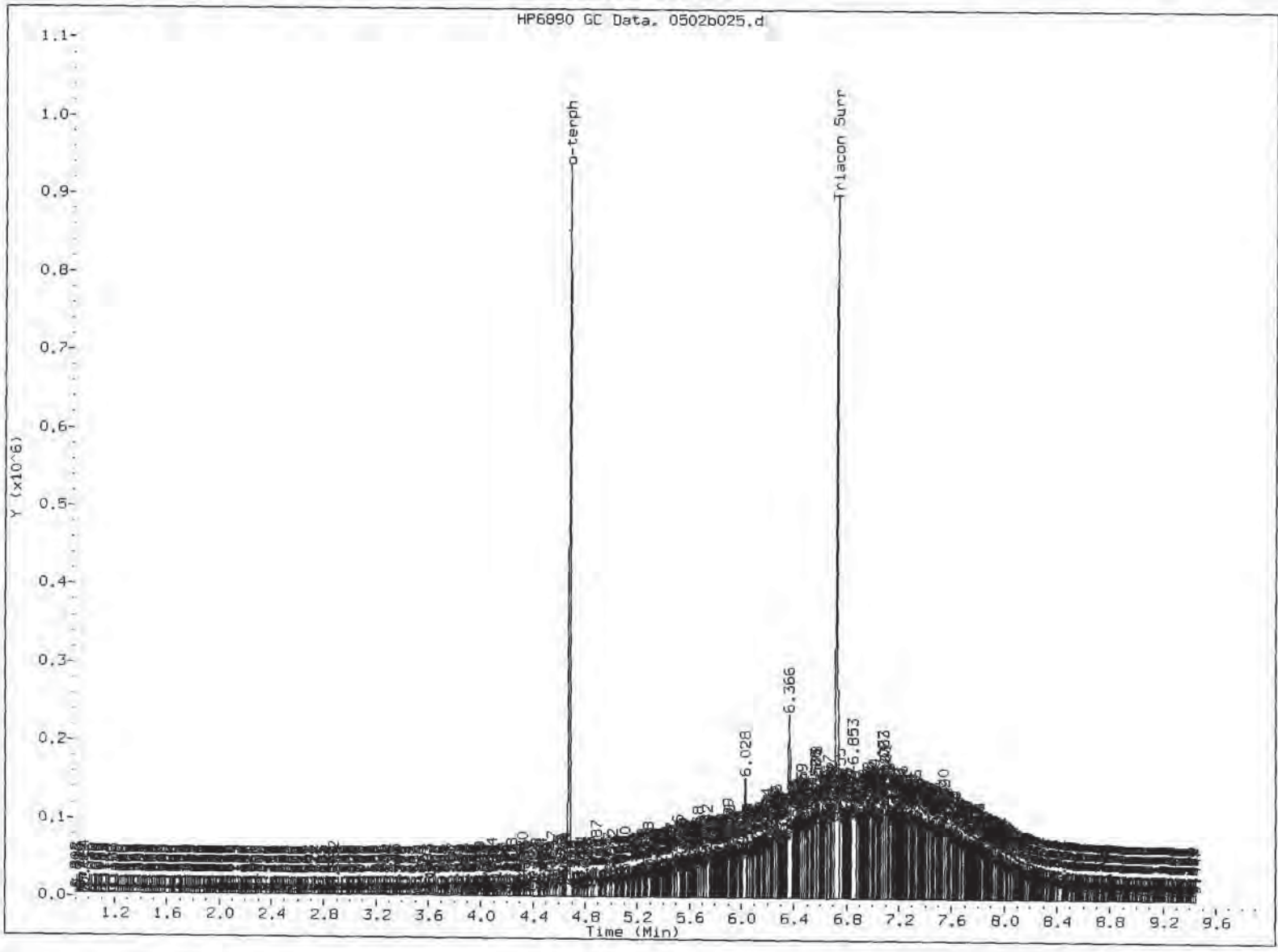
Operator: JW

Column diameter: 0.25



FID:3B-2C/RTX-1 WN15G

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: TW Date: 5/6/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b019.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15H
Client ID: SP1-4-(1-5)
Injection: 02-MAY-2013 15:27
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	128551	10
C8	0.830	-0.005	4810	3459	WATPHD	(C12-C24)	1106768	97.60
C10	2.259	0.005	1262	1805	WATPHM	(C24-C38)	3199735	290.14
C12	3.041	0.001	2519	2658	AK102	(C10-C25)	1212824	87.93 M
C14	3.620	0.000	8557	6479	AK103	(C25-C36)	2858025	390.60 M
C16	4.118	-0.001	10261	7934	OR.DIES	(C10-C28)	2150150	139.78 M
C18	4.566	-0.002	11049	10170				
C20	4.991	0.001	10564	8041				
C22	5.385	-0.004	11404	10147				
C24	5.757	-0.003	17228	12664				
C25	5.931	-0.004	21712	15712				
C26	6.111	-0.002	17019	7215				
C28	6.424	-0.003	28087	32044	IT.DIES	(C10-C24)	1152315	83.57
C32	6.971	-0.007	46070	10562				
C34	7.216	0.001	54678	68776	CREOSOT	(C8-C22)	819969	253.60
Filter Peak	----							
C36	7.426	-0.005	27029	19306	BUNKERC	(C10-C38)	4352051	887.30
o-terph	4.681	0.003	862359	568910	JET-A	(C10-C18)	419008	29.10
Triacon Surr	6.724	-0.002	762744	551047				

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	568910	39.2	87.1
Triacontane	551047	36.1	80.1

JCW 5/6/13

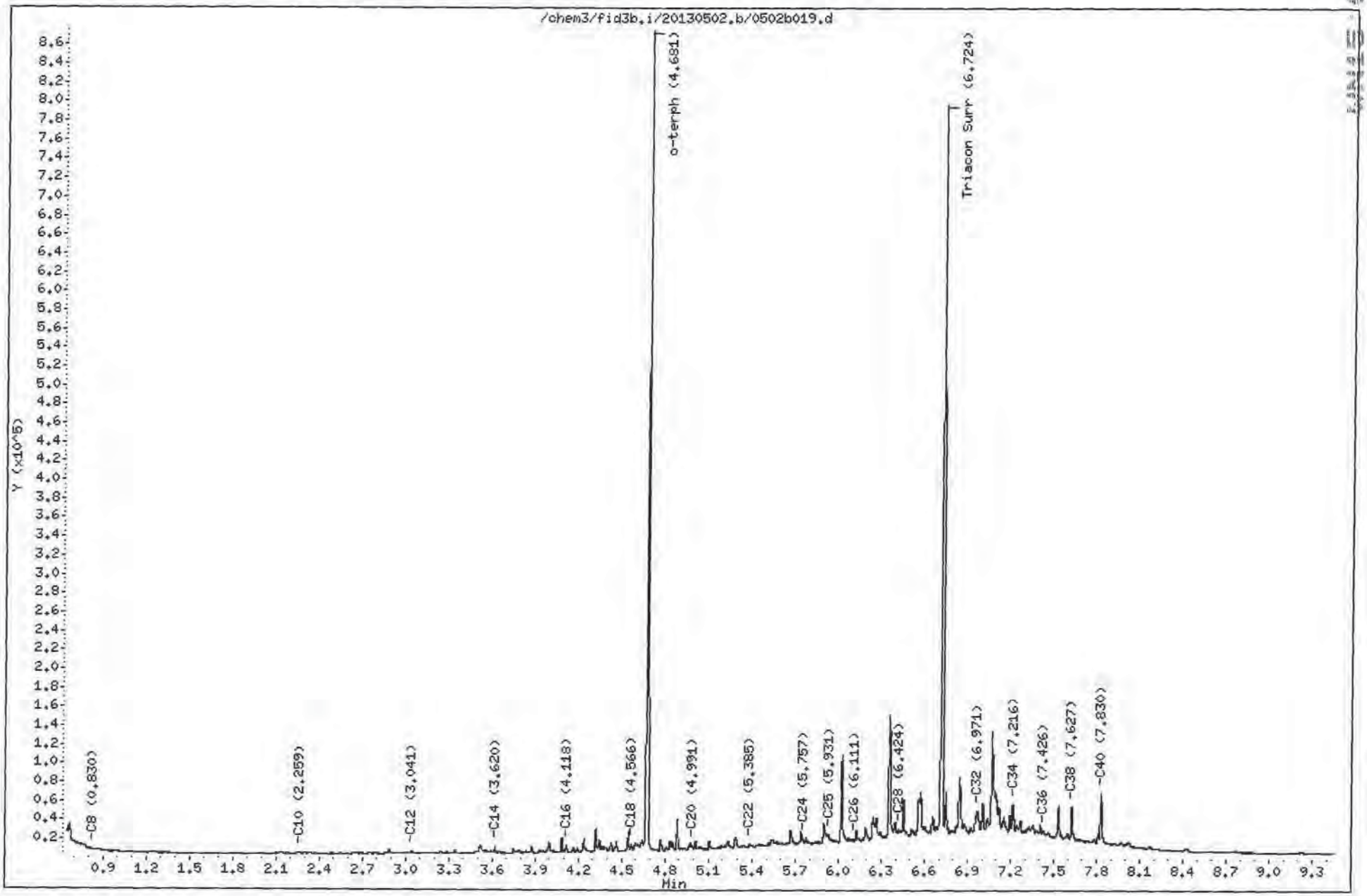
Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

Data File: /chem3/fid3b.i/20130502.b/0502b019.d
Date : 02-MAY-2013 15:27
Client ID: SP1-4-(1-5)
Sample Info: WN15H

Instrument: fid3b.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1

JC 5/6/13



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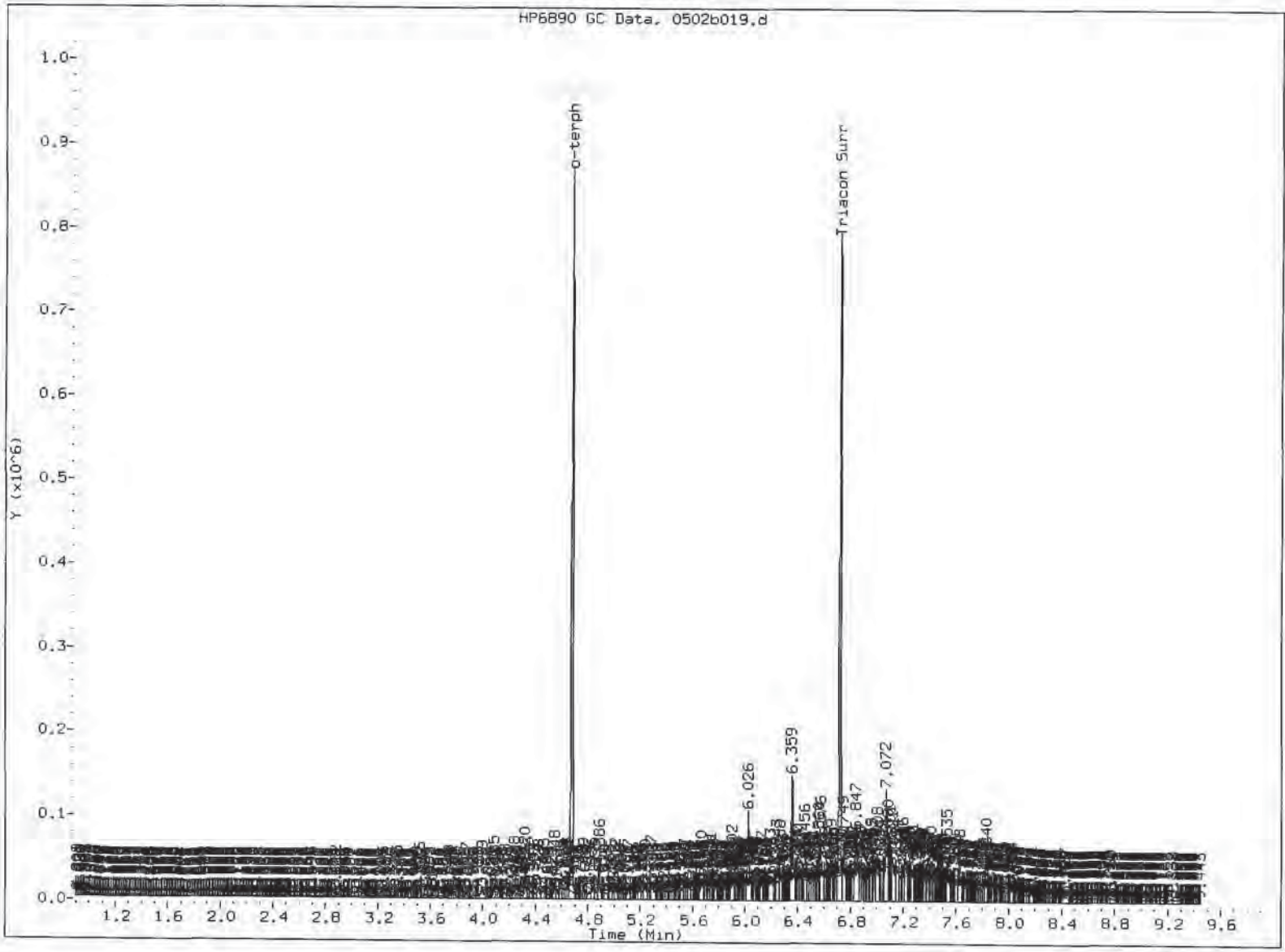
FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: SCJ Date: 5/6/17

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b020.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15I
Client ID: SP2-4-(1-5)
Injection: 02-MAY-2013 15:47
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	215039	16
C8	0.835	0.000	4273	2787	WATPHD	(C12-C24)	3212010	283.24
C10	2.257	0.002	2637	2766	WATPHM	(C24-C38)	12855371	1165.69
C12	3.040	0.000	3072	3359	AK102	(C10-C25)	3609735	261.71 M
C14	3.619	-0.001	7484	6388	AK103	(C25-C36)	11453300	1565.30 M
C16	4.116	-0.002	6869	7737	OR.DIES	(C10-C28)	7326525	476.31 M
C18	4.565	-0.003	17078	18605				
C20	4.990	0.000	24717	11389				
C22	5.388	-0.001	44627	50375				
C24	5.750	-0.009	86443	115448				
C25	5.937	0.002	73579	33544				
C26	6.112	-0.002	82691	26902				
C28	6.427	0.000	134865	75859	IT.DIES	(C10-C24)	3322340	240.94
C32	6.976	-0.002	149241	57566				
C34	7.215	0.001	122538	33714	CREOSOT	(C8-C22)	1985012	613.92
Filter Peak	----							
C36	7.425	-0.006	115292	81530	BUNKERC	(C10-C38)	16177711	3298.34
o-terph	4.679	0.001	745305	480090	JET-A	(C10-C18)	740021	51.39
Triacon Surr	6.728	0.002	557948	460807				

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	480090	33.1	73.5
Triacontane	460807	30.2	67.0

100
5/6/13

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

WN15 00118

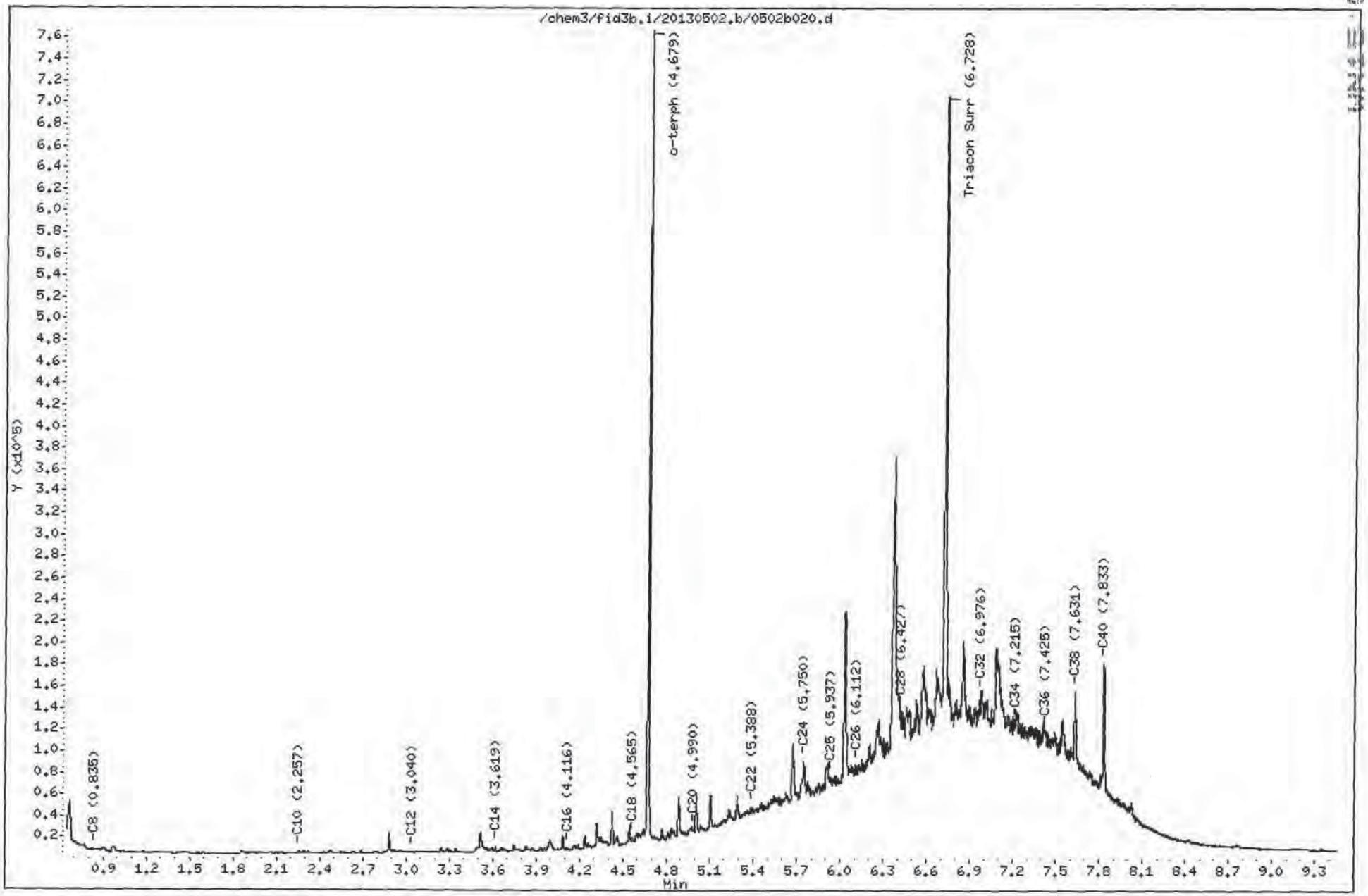
Data File: /chem3/fid3b.i/20130502.b/0502b020.d
Date : 02-MAY-2013 15:47
Client ID: SP2-4-(1-5)
Sample Info: WN15I

Column phase: RTX-1

Instrument: fid3b.i

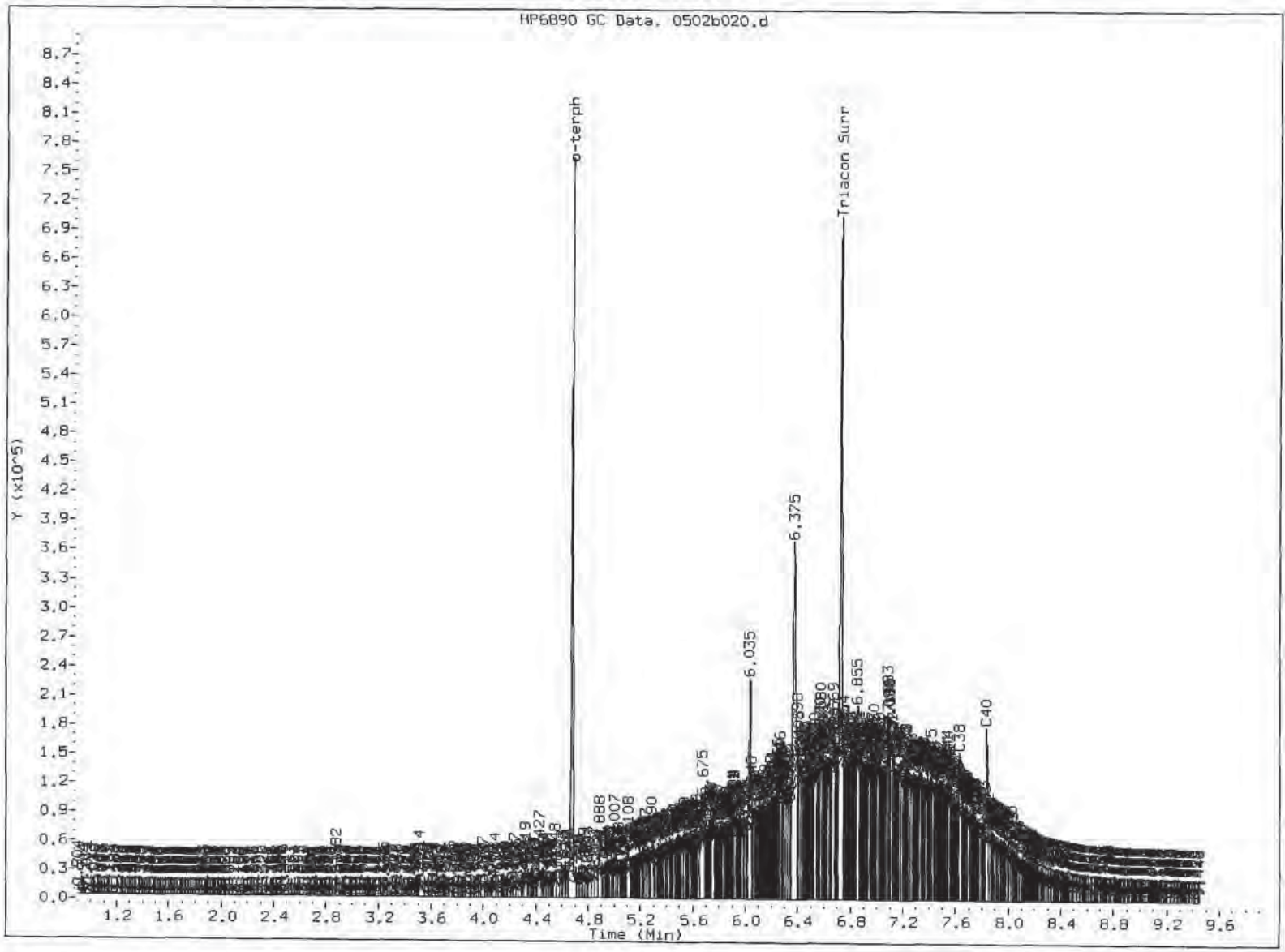
Operator: JW
Column diameter: 0.25

JW 5/6/13



FID:3B-2C/RTX-1 WN15I

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: JW Date: 5/6/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b021.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15J
Client ID: SP2-1-(1-5)
Injection: 02-MAY-2013 16:07
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	130978	10
C8	0.838	0.002	3735	3384	WATPHD	(C12-C24)	2099457	185.14
C10	2.259	0.005	1637	2103	WATPHM	(C24-C38)	10543517	956.06
C12	3.041	0.001	2461	2259	AK102	(C10-C25)	2336609	169.40 M
C14	3.619	-0.001	5903	5014	AK103	(C25-C36)	9194637	1256.61 M
C16	4.116	-0.002	6962	7121	OR.DIES	(C10-C28)	4942941	321.35 M
C18	4.567	-0.001	14025	14731				
C20	4.988	-0.002	20508	16916				
C22	5.388	-0.001	28899	34223				
C24	5.749	-0.011	101393	159536				
C25	5.934	-0.001	60651	53685				
C26	6.103	-0.011	56655	34244				
C28	6.430	0.002	95802	42083	IT.DIES	(C10-C24)	2153307	156.16
C32	6.976	-0.002	136328	34260				
C34	7.214	-0.001	108288	14975	CREOSOT	(C8-C22)	1286367	397.84
Filter Peak	----							
C36	7.429	-0.002	101257	47613	BUNKERC	(C10-C38)	12696824	2588.65
o-terph	4.679	0.001	902704	586858	JET-A	(C10-C18)	462355	32.11
Triacon Surr	6.728	0.002	722625	590477				

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	586858	40.4	89.9
Triacontane	590477	38.6	85.9

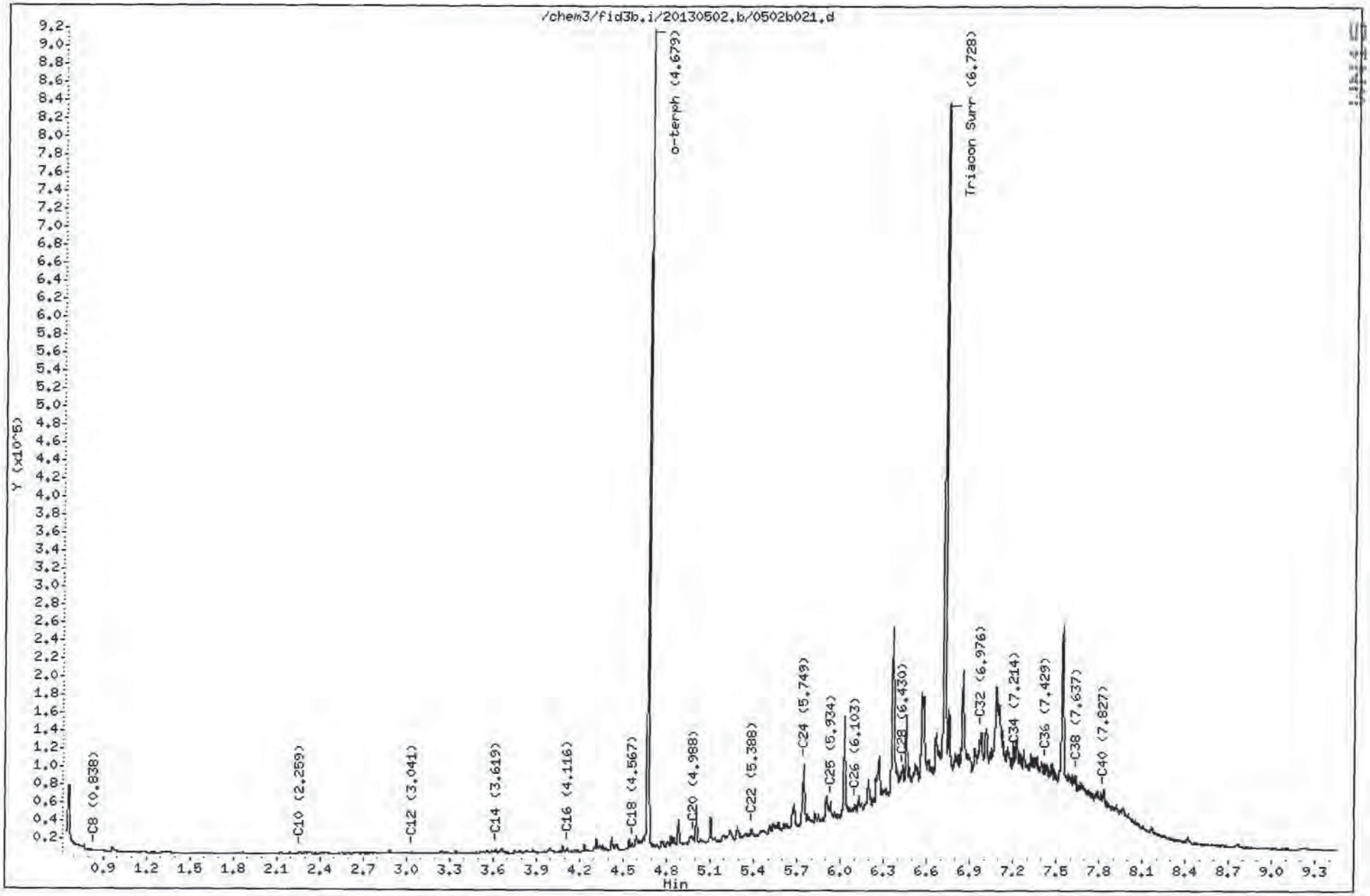
JW 5/6/13

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

Data File: /chem3/fid3b.i/20130502.b/0502b021.d
Date : 02-MAY-2013 16:07
Client ID: SP2-1-(1-5)
Sample Info: WN15J

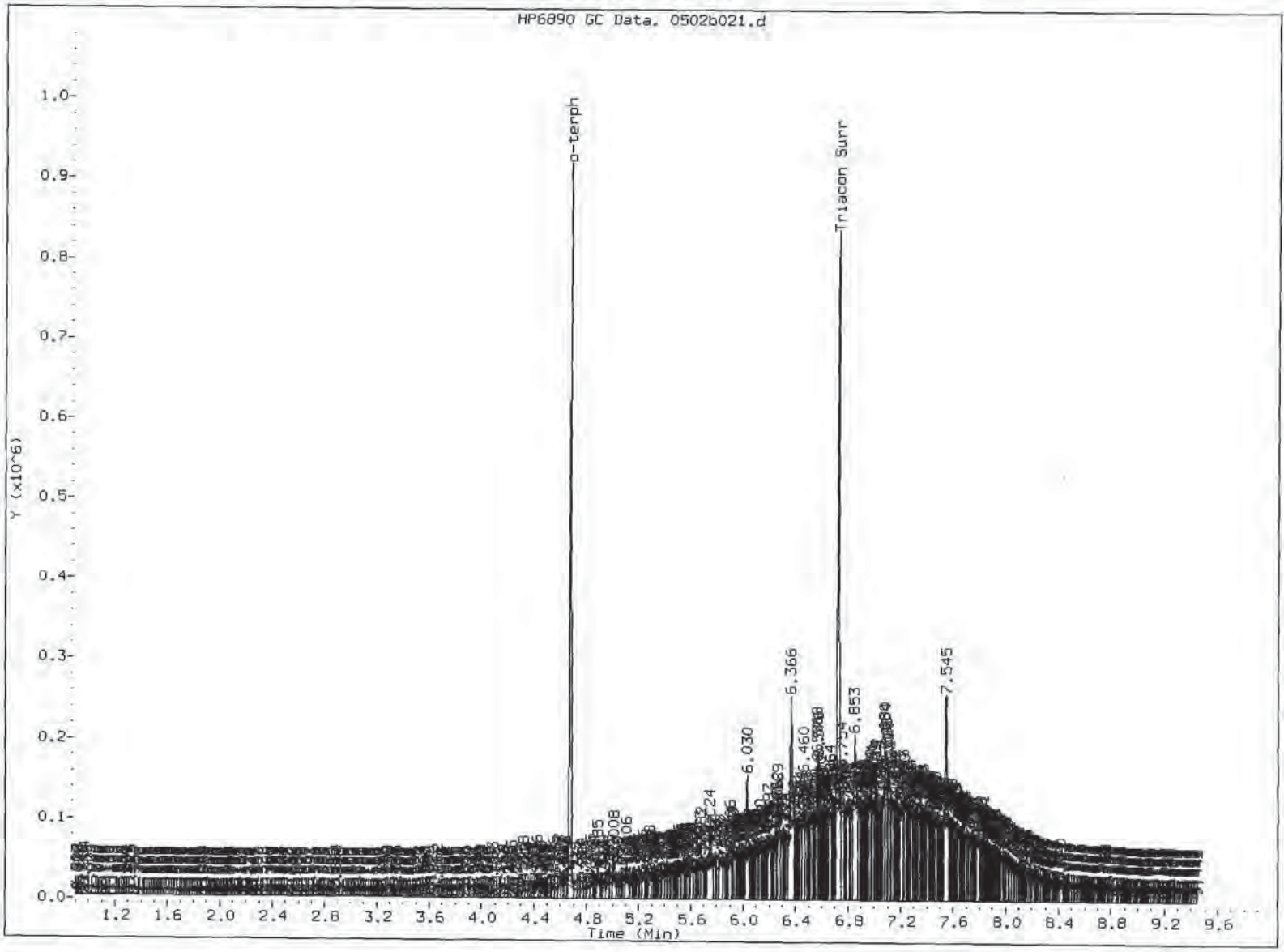
Instrument: fid3b.i
Operator: JW
Column diameter: 0.25

Column phase: RTX-1



FID:3B-2C/RTX-1 WN15J

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5.) Skimmed surrogate

Analyst: JW Date: 5/6/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b022.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15K
Client ID: SP2-2-(1-5)
Injection: 02-MAY-2013 16:26
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc	
Toluene	----				WATPHG	(Tol-C12)	126793	9	
C8	0.841	0.005	3443	3215	WATPHD	(C12-C24)	2205814	194.51	
C10	2.257	0.003	1472	1695	WATPHM	(C24-C38)	8266084	749.55	
C12	3.042	0.001	6540	5303	AK102	(C10-C25)	2422588	175.64	M
C14	3.620	0.000	7117	6478	AK103	(C25-C36)	7271453	993.78	M
C16	4.117	-0.001	8294	8935	OR.DIES	(C10-C28)	4728560	307.41	M
C18	4.566	-0.002	14720	16214					
C20	4.989	-0.001	19286	16276					
C22	5.388	0.000	28918	13945					
C24	5.763	0.004	40271	21498					
C25	5.932	-0.003	46640	12848					
C26	6.115	0.002	51711	34855					
C28	6.429	0.002	82999	69526	IT.DIES	(C10-C24)	2261377	164.00	
C32	6.979	0.001	111248	123666					
C34	7.217	0.002	86901	33290	CREOSOT	(C8-C22)	1428620	441.84	
Filter Peak	----								
C36	7.430	-0.001	73030	54704	BUNKERC	(C10-C38)	10527461	2146.36	
o-terph	4.680	0.003	825058	547827	JET-A	(C10-C18)	538155	37.37	
Triacon Surr	6.728	0.002	707594	550089					

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	547827	37.7	83.9
Triacontane	550089	36.0	80.0

JW 5/6/13

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

WN15 : 0012

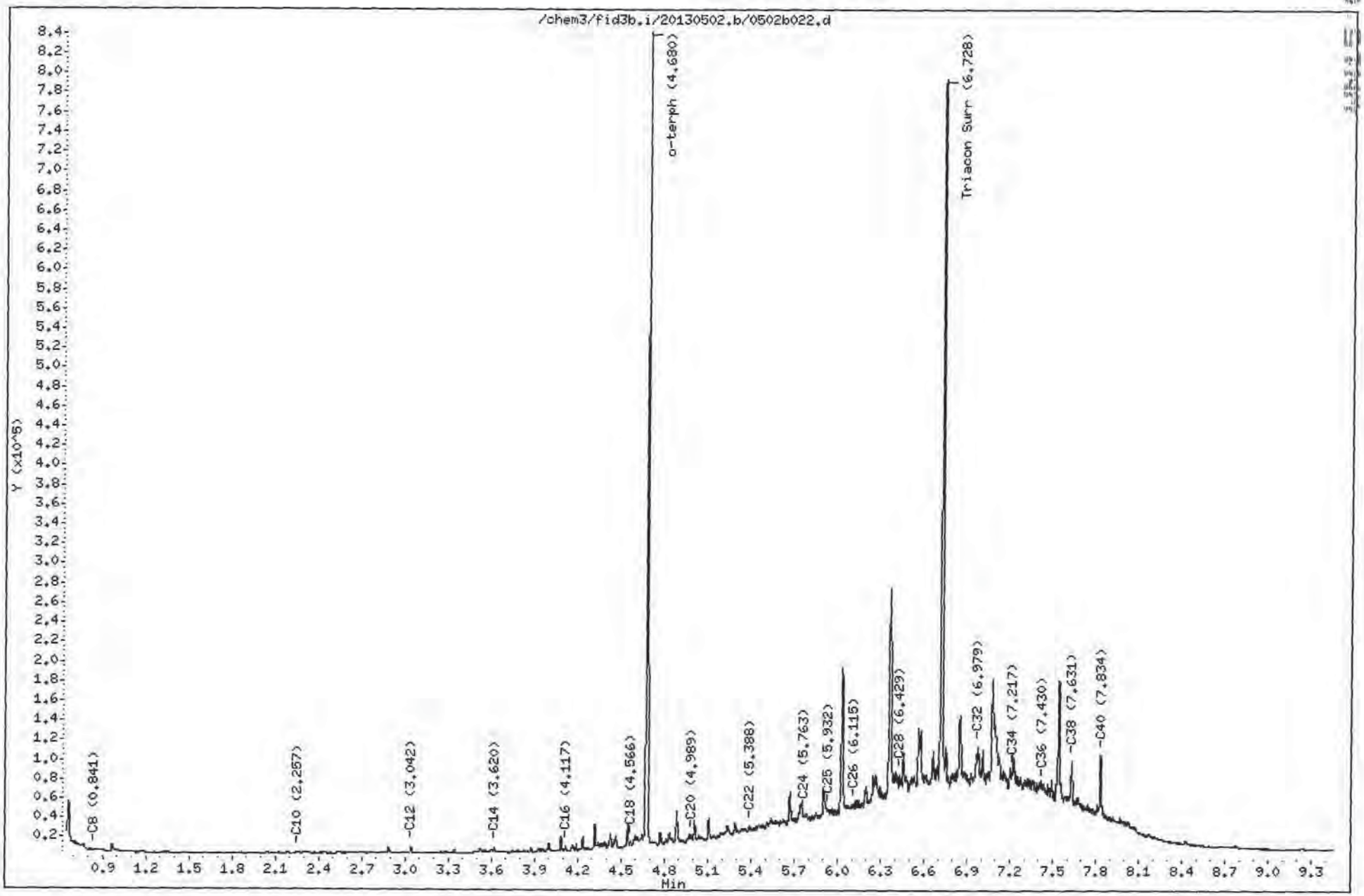
Data File: /chem3/fid3b.i/20130502.b/0502b022.d
Date : 02-MAY-2013 16:26
Client ID: SP2-2-(1-5)
Sample Info: WN15K

Column phase: RTX-1

Instrument: fid3b.i

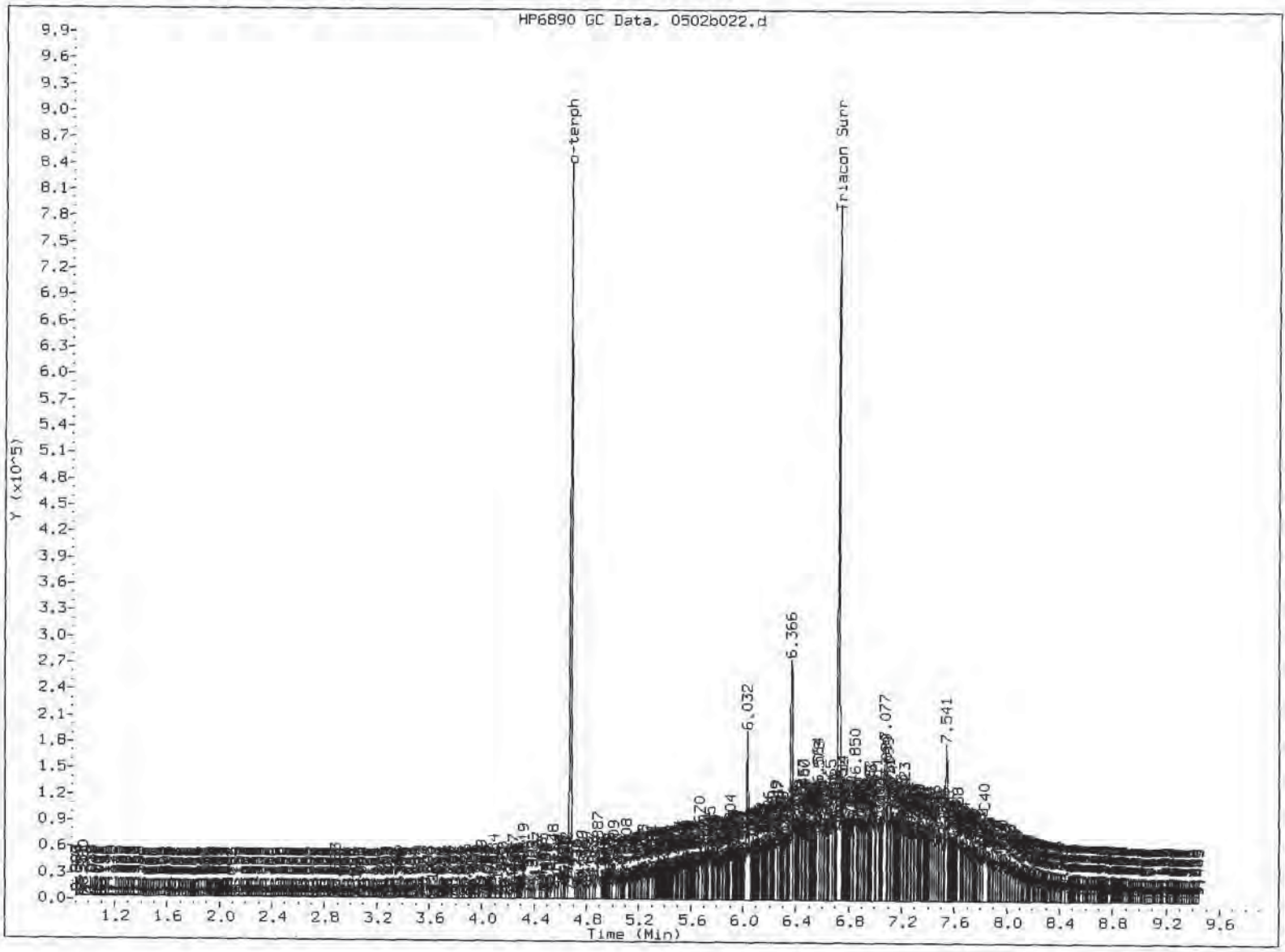
Operator: JW
Column diameter: 0.25

JW 5/6/13



FID:3B-2C/RTX-1 WN15K

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JL Date: 5/6/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b023.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15L
Client ID: SP2-3-(1-5)
Injection: 02-MAY-2013 16:46
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc	
Toluene	----				WATPHG	(Tol-C12)	153656	11	
C8	0.831	-0.004	3719	2467	WATPHD	(C12-C24)	2154095	189.95	
C10	2.260	0.006	1882	1823	WATPHM	(C24-C38)	8351215	757.26	
C12	3.039	-0.001	5533	5069	AK102	(C10-C25)	2353323	170.62	M
C14	3.619	-0.001	5742	5451	AK103	(C25-C36)	7429858	1015.42	M
C16	4.117	-0.001	6287	8465	OR.DIES	(C10-C28)	4756895	309.25	M
C18	4.565	-0.002	13067	13399					
C20	4.989	0.000	16163	4149					
C22	5.389	0.000	25391	9835					
C24	5.758	-0.001	40033	23316					
C25	5.934	-0.001	44564	7063					
C26	6.116	0.003	47847	36091					
C28	6.423	-0.005	81361	50551	IT.DIES	(C10-C24)	2231684	161.85	
C32	6.979	0.002	105680	70519					
C34	7.221	0.006	96061	53179	CREOSOT	(C8-C22)	1416306	438.03	
Filter Peak	----								
C36	7.431	0.000	70982	41874	BUNKERC	(C10-C38)	10582899	2157.66	
o-terph	4.679	0.001	706444	484849	JET-A	(C10-C18)	594860	41.31	
Triacon Surr	6.725	-0.001	622751	446630					

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	484849	33.4	74.2
Triacontane	446630	29.2	64.9

JW 5/6/13

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

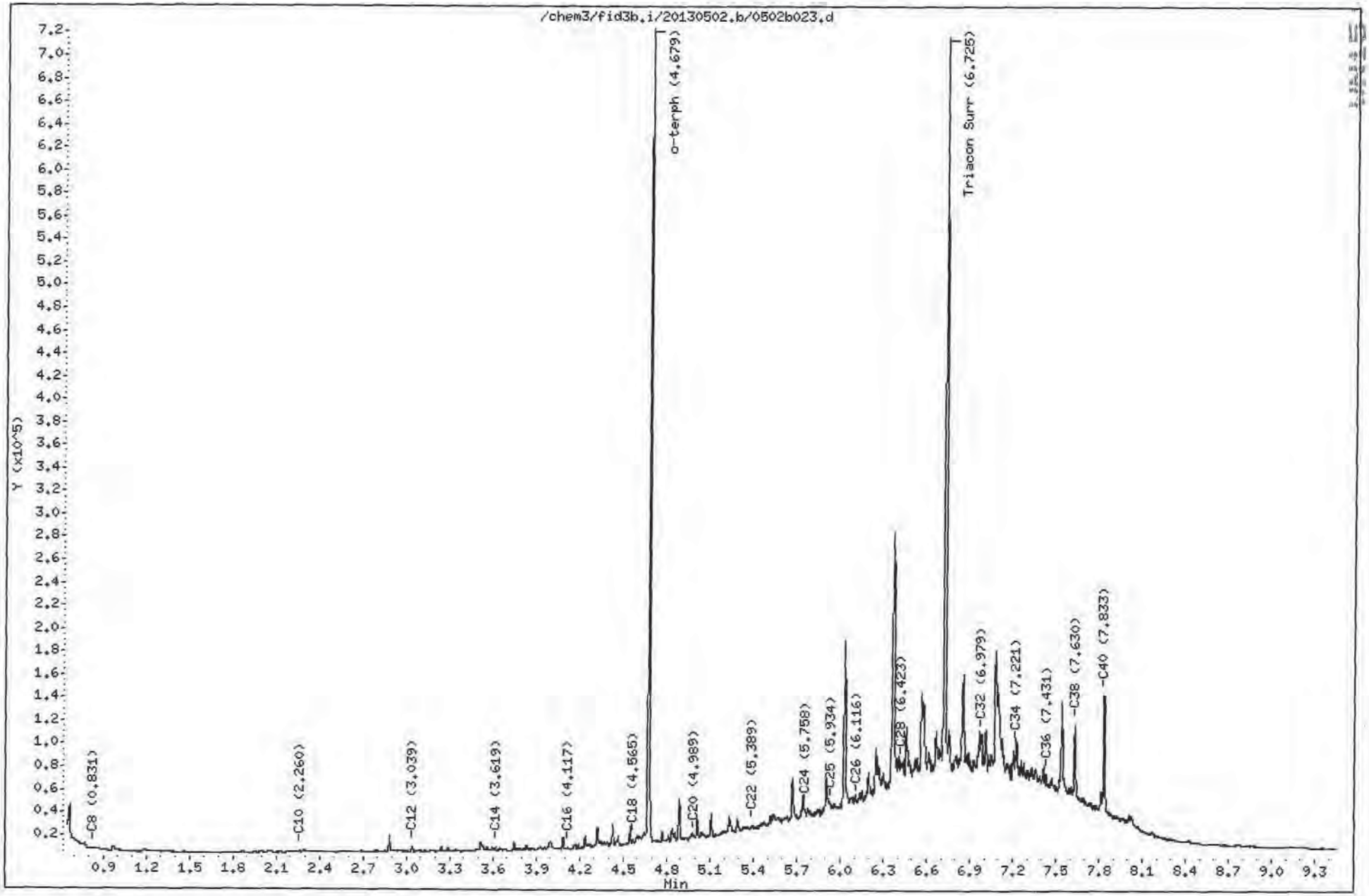
Data File: /chem3/fid3b.i/20130502.b/0502b023.d
Date : 02-MAY-2013 16:46
Client ID: SP2-3-(1-5)
Sample Info: WN15L

Column phase: RTX-1

Instrument: fid3b.i

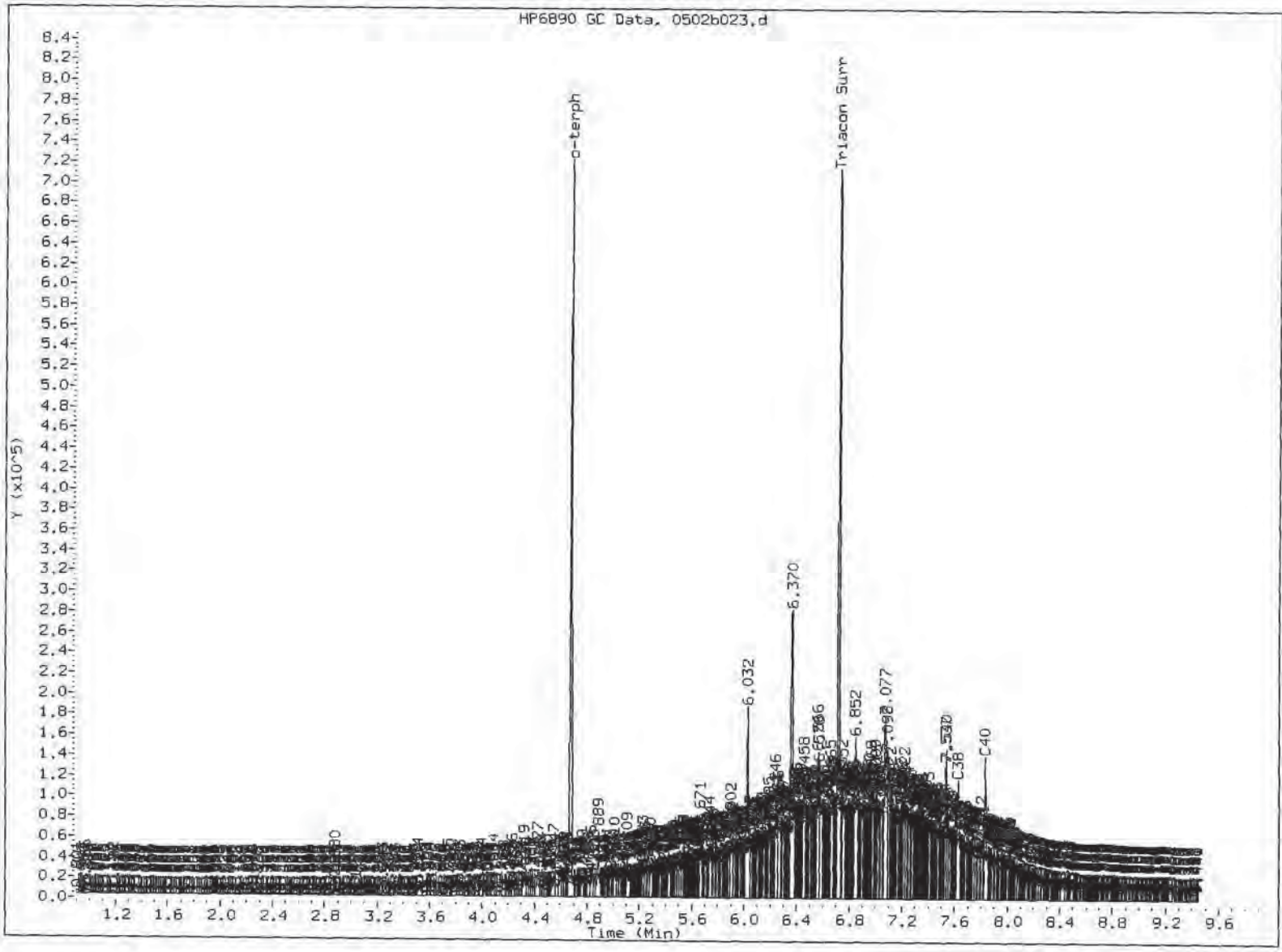
Operator: JW
Column diameter: 0.25

JW 5/6/13



FID:3B-2C/RTX-1 WN15L

FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JL Date: 5/6/10

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03

Client ID	OTER	TOT OUT
043013MBS	95.6%	0
043013LCS	90.8%	0
SP1-5-(1-5)	82.1%	0
SP1-5-(1-5) MS	85.4%	0
SP1-5-(1-5) MSD	82.8%	0
SP1-1-(1-5)	72.1%	0
SP1-6-(1-5)	70.2%	0
SP1-2-(1-5)	87.8%	0
SP1-3-(1-5)	75.8%	0
SP1-8-(1-5)	55.8%	0
SP1-7-(1-5)	87.0%	0
SP1-4-(1-5)	87.1%	0
SP2-4-(1-5)	73.5%	0
SP2-1-(1-5)	89.9%	0
SP2-2-(1-5)	83.9%	0
SP2-3-(1-5)	74.2%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 13-8557 to 13-8568

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: SP1-5-(1-5)
MS/MSD

Lab Sample ID: WN15A
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/06/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Date Extracted MS/MSD: 04/30/13

Date Analyzed MS: 05/02/13 12:49
MSD: 05/02/13 13:09
Instrument/Analyst MS: FID3B/JLW
MSD: FID3B/JLW

Sample Amount MS: 9.16 g-dry-wt
MSD: 9.16 g-dry-wt
Final Extract Volume MS: 1.0 mL
MSD: 1.0 mL
Dilution Factor MS: 5.00
MSD: 5.00
Percent Moisture: 8.8%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	63	257	164	118%	195	164	80.5%	27.4%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	85.4%	82.8%

Results reported in mg/kg
RPD calculated using sample concentrations per SW846.

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b011.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15AMS
Client ID: SP1-5-(1-5) MS
Injection: 02-MAY-2013 12:49
Dilution Factor: 5

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	697167	52
C8	0.837	0.001	3965	3114	WATPHD	(C12-C24)	5330017	470.01
C10	2.260	0.006	17883	13149	WATPHM	(C24-C38)	3757295	340.70
C12	3.042	0.001	30218	31131	AK102	(C10-C25)	5941202	430.74 M
C14	3.620	0.000	65408	50039	AK103	(C25-C36)	3331748	455.34 M
C16	4.117	-0.001	106064	81256	OR.DIES	(C10-C28)	7050126	458.34 M
C18	4.567	-0.001	95863	80887				
C20	4.991	0.001	77418	61390				
C22	5.384	-0.005	57968	67854				
C24	5.756	-0.003	36540	33079				
C25	5.932	-0.003	37040	39010				
C26	6.112	-0.002	28133	11024				
C28	6.428	0.001	37634	25078	IT.DIES	(C10-C24)	5821482	422.18
C32	6.972	-0.006	47333	42729				
C34	7.217	0.002	66906	92451	CREOSOT	(C8-C22)	4585783	1418.27
Filter Peak	----							
C36	7.427	-0.004	28419	18240	BUNKERC	(C10-C38)	9578777	1952.94
o-terph	4.673	-0.005	206368	111618	JET-A	(C10-C18)	2804994	194.81
Triacon Surr	6.716	-0.010	189203	111357				

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	111618	7.7	85.5
Triacontane	111357	7.3	81.0

JW 5/6/13

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

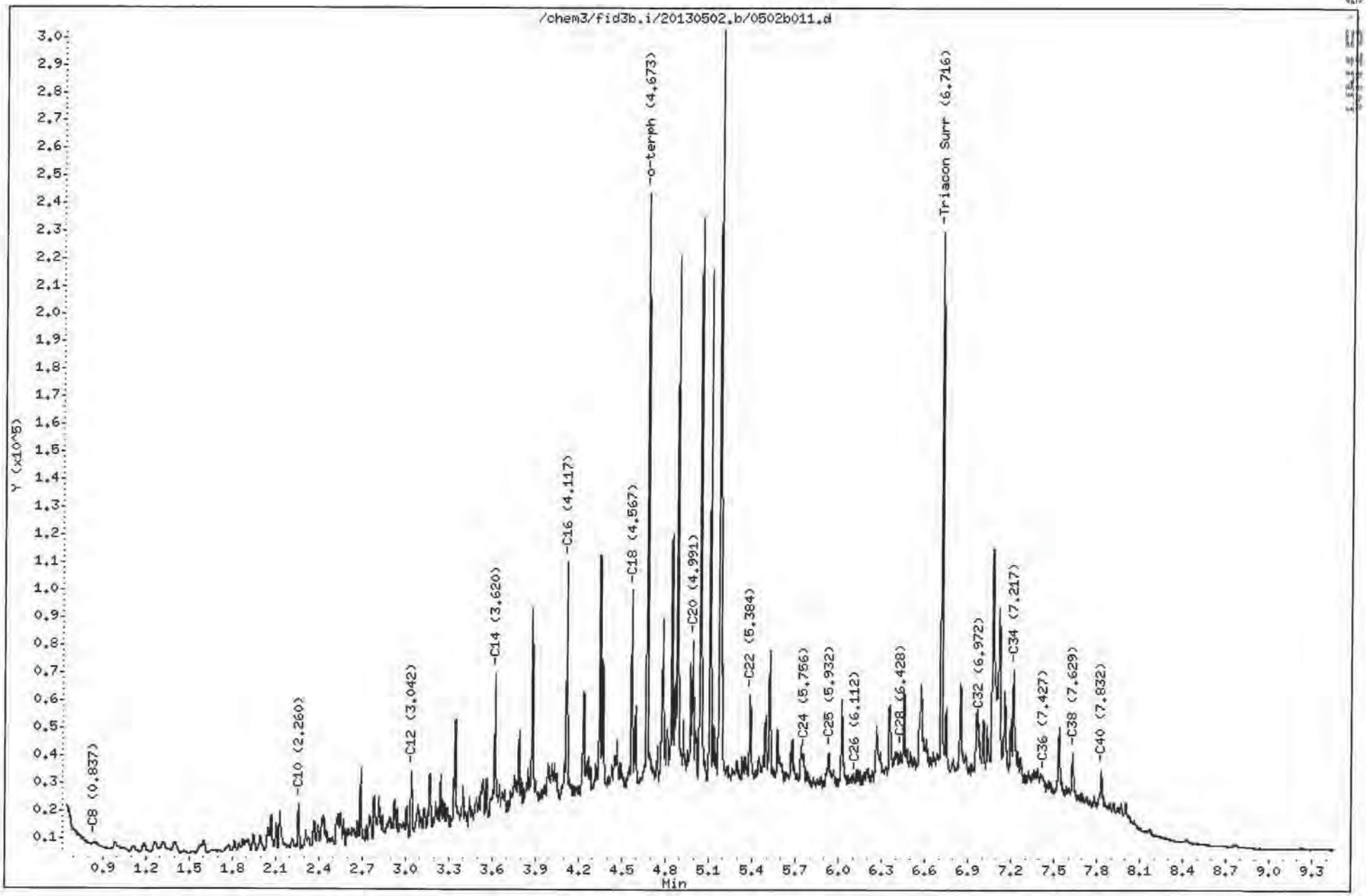
Data File: /chem3/fid3b.i/20130502.b/0502b011.d
Date : 02-MAY-2013 12:49
Client ID: SP1-5-(1-5) MS
Sample Info: WN15AMS,5

Instrument: fid3b.i

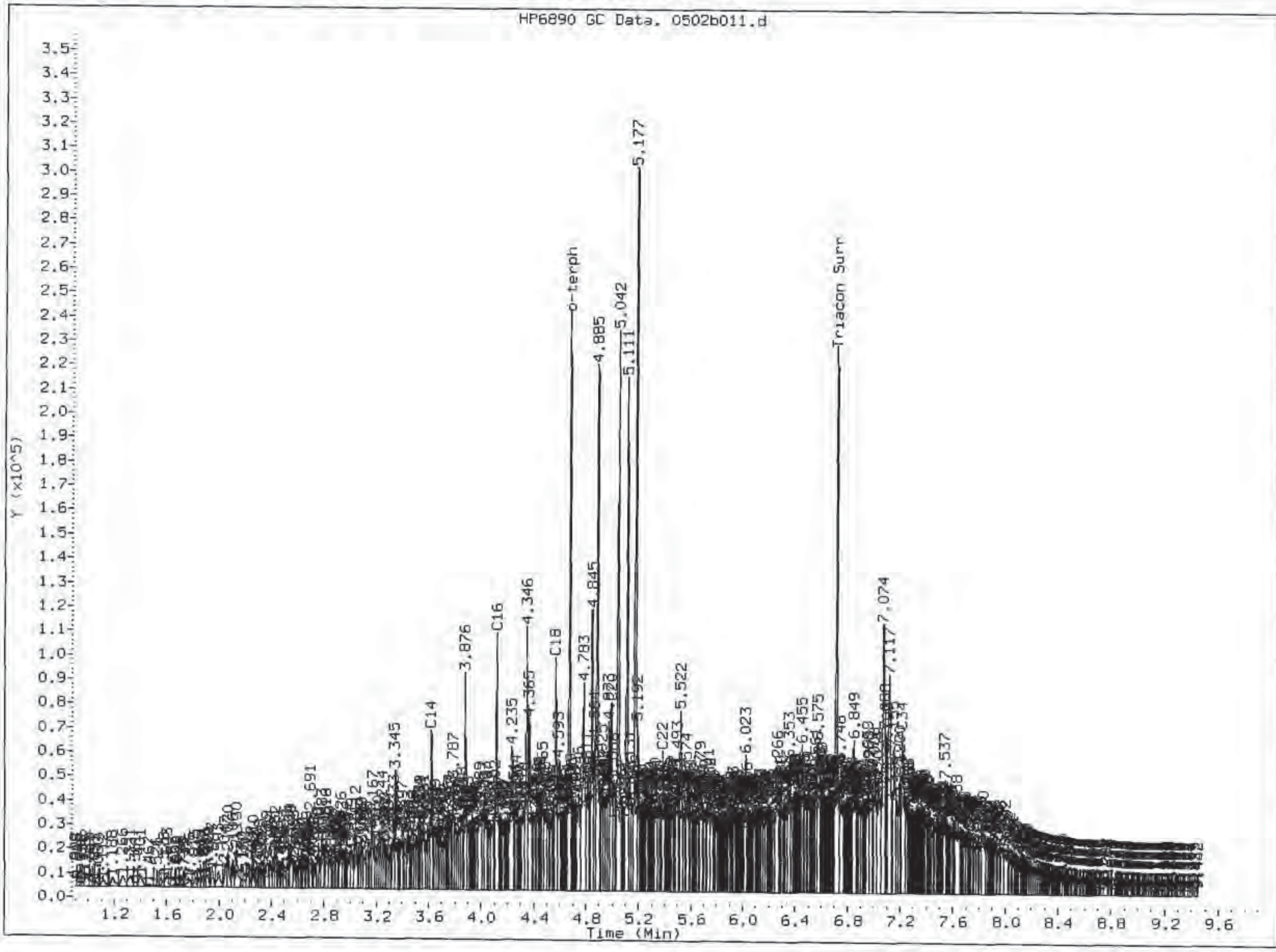
Operator: JW
Column diameter: 0.25

Column phase: RTX-1

JW 5/6/13



FID:3B-2C/RTX-1 WN15AMS FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: Jlw

Date: 5/6/13

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b012.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15AMSD
Client ID: SP1-5-(1-5) MSD
Injection: 02-MAY-2013 13:09
Dilution Factor: 5

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	671518	50
C8	0.829	-0.007	3569	6014	WATPHD	(C12-C24)	4055566	357.63
C10	2.257	0.003	16065	13310	WATPHM	(C24-C38)	3830751	347.36
C12	3.042	0.001	32689	30245	AK102	(C10-C25)	4643194	336.63 M
C14	3.621	0.001	60468	52309	AK103	(C25-C36)	3376632	461.48 M
C16	4.118	0.000	99167	84528	OR.DIES	(C10-C28)	5757917	374.33 M
C18	4.567	-0.001	87084	77167				
C20	4.989	-0.001	71916	58077				
C22	5.387	-0.002	45527	57110				
C24	5.754	-0.005	34964	32219				
C25	5.932	-0.003	35174	22719				
C26	6.112	-0.002	26148	4613				
C28	6.425	-0.003	36932	11720	IT.DIES	(C10-C24)	4537180	329.04
C32	6.982	0.004	41690	20917				
C34	7.218	0.003	61295	80158	CREOSOT	(C8-C22)	3483661	1077.41
Filter Peak	----							
C36	7.427	-0.004	32115	22325	BUNKERC	(C10-C38)	8367931	1706.07
o-terph	4.675	-0.003	191244	108061	JET-A	(C10-C18)	2627741	182.50
Triacon Surr	6.717	-0.009	163972	111852				

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	108061	7.4	82.7
Triacontane	111852	7.3	81.3

JW 5/6/13

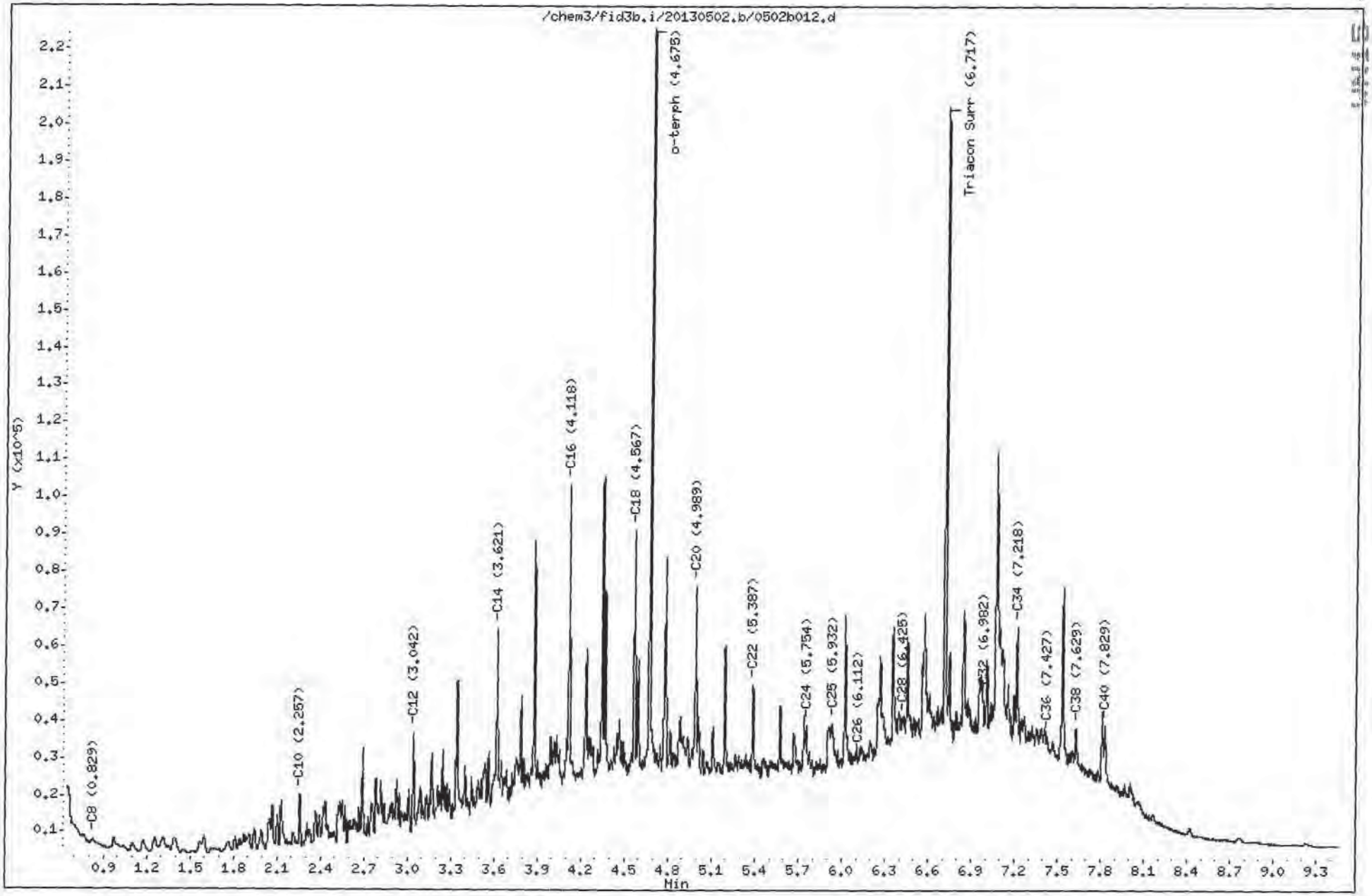
Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

Data File: /chem3/fid3b.i/20130502.b/0502b012.d
Date : 02-MAY-2013 13:09
Client ID: SP1-5-(1-5) MSD
Sample Info: WN15AMSD,5

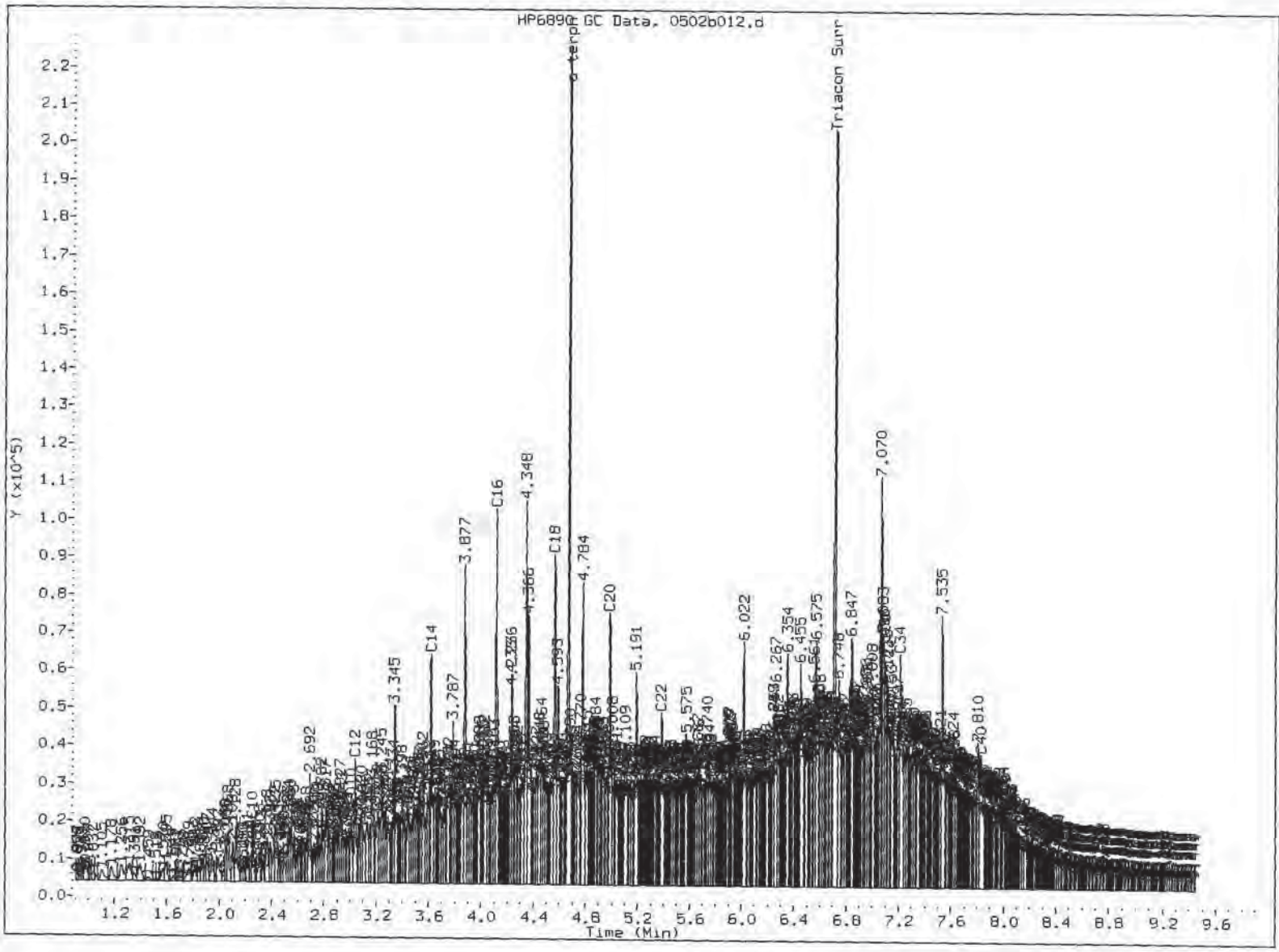
Column phase: RTX-1

Instrument: fid3b.i

Operator: JW
Column diameter: 0.25



FID:3B-2C/RTX-1 WN15AMSD FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: JC Date: 5/6/13

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-043013
LAB CONTROL

Lab Sample ID: LCS-043013
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/06/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: NA
Date Received: NA

Date Extracted: 04/30/13
Date Analyzed: 05/02/13 11:27
Instrument/Analyst: FID3B/JLW

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	134	150	89.3%

TPHD Surrogate Recovery

o-Terphenyl	90.8%

Results reported in mg/kg

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid3b.i/20130502.b/0502b007.d
Method: /chem3/fid3b.i/20130502.b/ftphfid3b.m
Instrument: fid3b.i
Operator: JW
Report Date: 05/06/2013
Macro: FID:3B042013

ARI ID: WN15LCSS1
Client ID: WN15LCSS1
Injection: 02-MAY-2013 11:27
Dilution Factor: 1

FID:3B RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc	
Toluene	----				WATPHG	(Tol-C12)	3780164	280	
C8	0.834	-0.002	7353	6970	WATPHD	(C12-C24)	15241697	1344.05	
C10	2.258	0.004	99197	77059	WATPHM	(C24-C38)	170478	15.46	
C12	3.041	0.000	172971	169474	AK102	(C10-C25)	17983941	1303.84	M
C14	3.622	0.002	328882	337497	AK103	(C25-C36)	126234	17.25	
C16	4.121	0.003	502474	394896	OR.DIES	(C10-C28)	18079445	1175.36	M
C18	4.571	0.003	409009	395894					
C20	4.991	0.002	337646	278267					
C22	5.387	-0.002	158221	139316					
C24	5.756	-0.004	36012	47509					
C25	5.935	0.000	15454	23752					
C26	6.121	0.008	3110	616					
C28	6.427	0.000	1324	907	IT.DIES	(C10-C24)	17944185	1301.34	
C32	6.979	0.002	2216	1066					
C34	7.217	0.003	46	6	CREOSOT	(C8-C22)	14718249	4552.00	
Filter Peak	----								
C36	7.437	0.007	137	78	BUNKERC	(C10-C38)	18114662	3693.25	
o-terph	4.681	0.004	1011537	593310	JET-A	(C10-C18)	13494177	937.16	
Triacon Surr	6.722	-0.004	739402	617083					

Range Times: NW Diesel(3.091 - 5.810) NW Gas(0.609 - 3.091) NW M.Oil(5.810 - 7.686)
AK102(2.204 - 5.885) AK103(5.885 - 7.481) Jet A(2.204 - 4.618)

Surrogate	Area	Amount	%Rec
o-Terphenyl	593310	40.9	90.9
Triacontane	617083	40.4	89.7

JL 5/6/13

Analyte	RF	Curve Date
o-Terph Surr	14512.5	22-MAR-2013
Triacon Surr	15281.5	13-APR-2013
Gas	13506.6	20-APR-2013
Diesel	11340.1	22-MAR-2013
Motor Oil	11028.1	13-APR-2013
AK102	13793.0	22-MAR-2013
AK103	7317.0	25-SEP-2012
JetA	14399.0	16-FEB-2012
OR Diesel	15382.0	
IT Diesel	13789.0	
Bunker C	4904.8	14-SEP-2012
Creosote	3233.4	20-APR-2013

Data File: /chem3/fid3b.i/20130502.b/0502b007.d

Date : 02-MAY-2013 11:27

Client ID: WN15LCSS1

Sample Info: WN15LCSS1

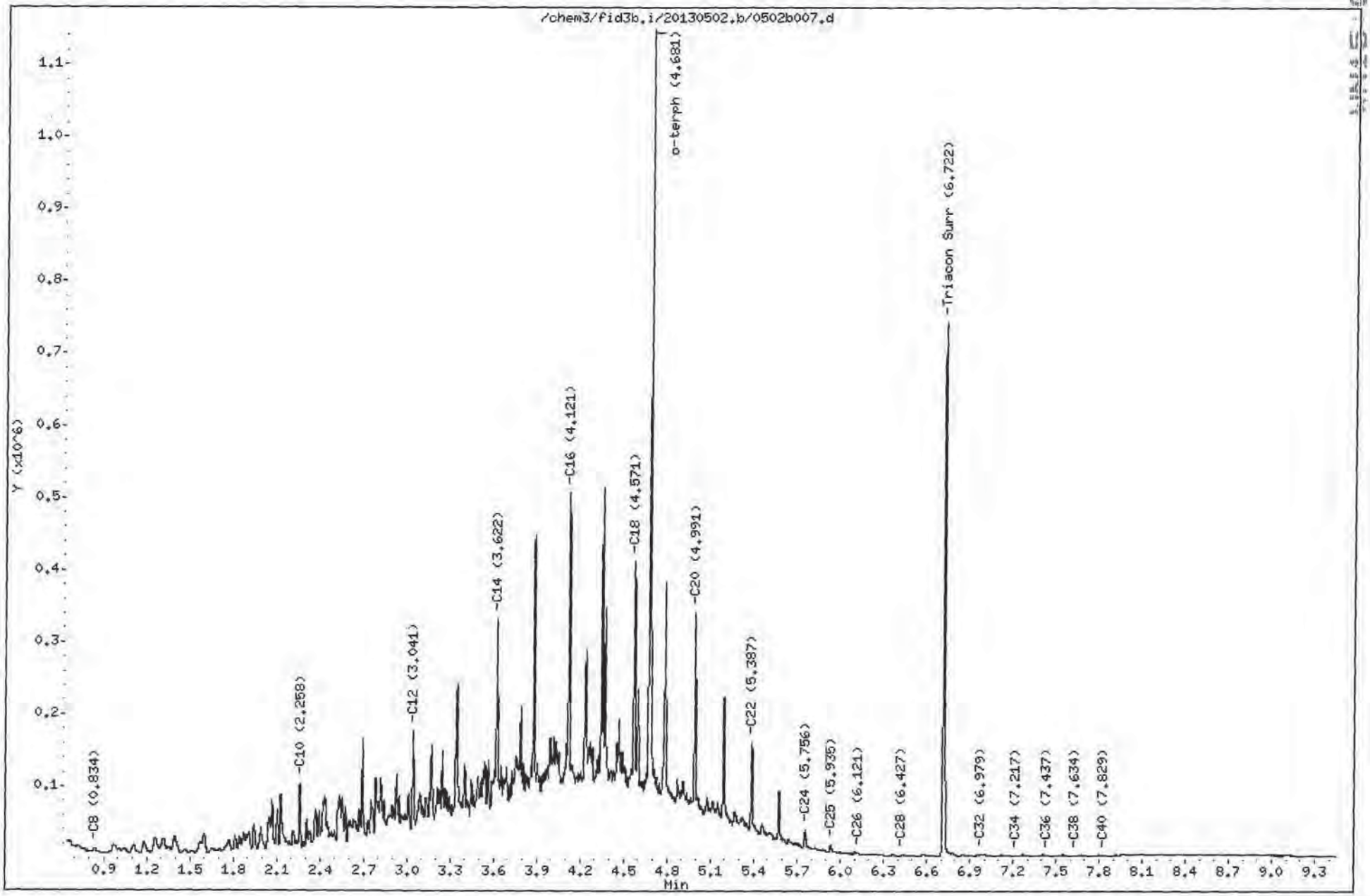
Column phase: RTX-1

Instrument: fid3b.i

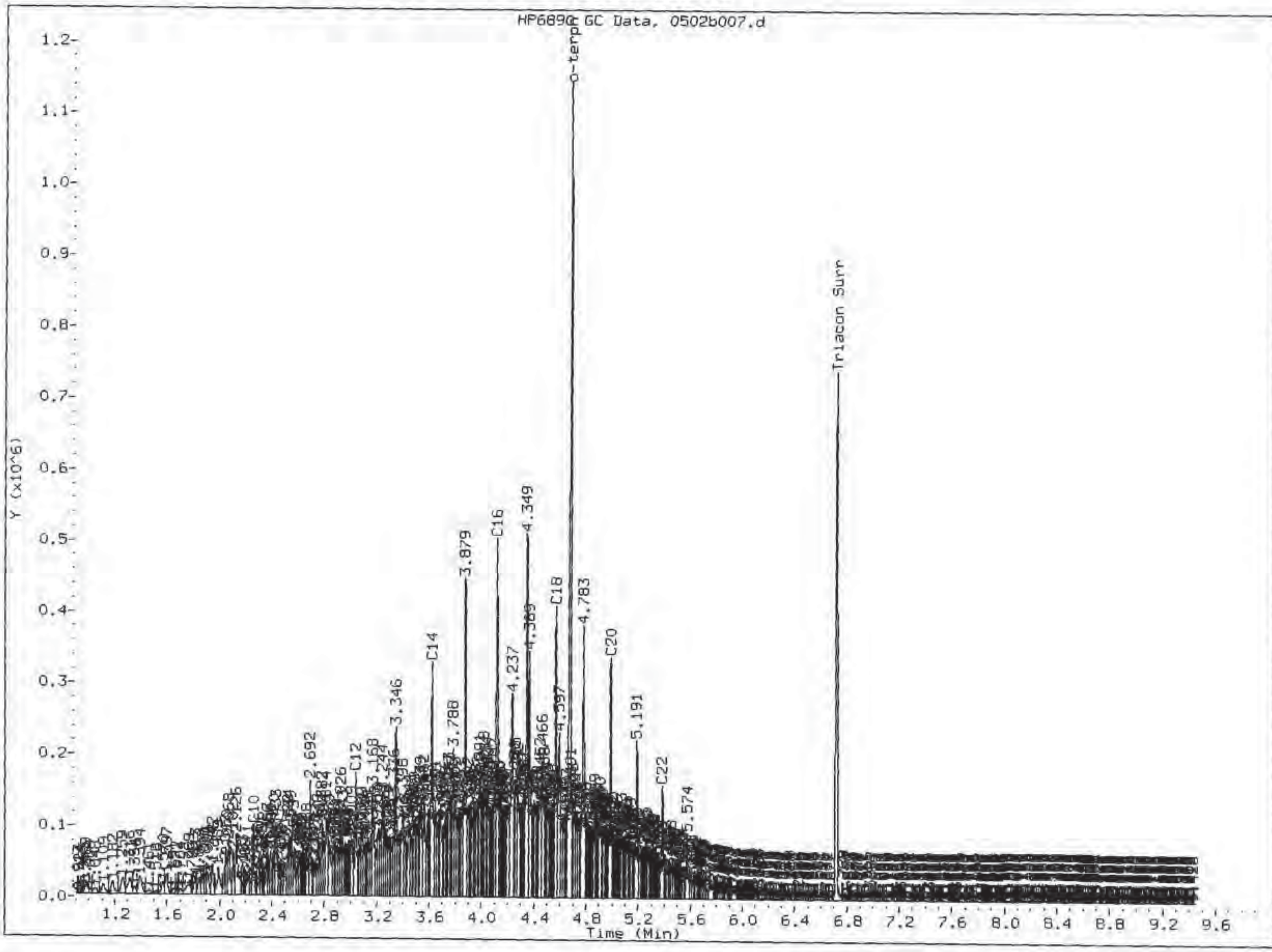
Operator: JW

Column diameter: 0.25

JV 5/6/13



FID:3B-2C/RTX-1 WN15LCSS1 FID:3B SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5.) Skimmed surrogate

Analyst: JW Date: 5/6/13

WN15 00141

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: WN15
Matrix: Soil
Project: PA Mill Stockpile Sampling
Date Received: 04/23/13
000137-015-03

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
13-8557-043013MB1	Method Blank	10.0 g	1.00 mL	-	04/30/13
13-8557-043013LCS1	Lab Control	10.0 g	1.00 mL	-	04/30/13
13-8557-WN15A	SP1-5-(1-5)	9.12 g	1.00 mL	D	04/30/13
13-8557-WN15AMS	SP1-5-(1-5)	9.16 g	1.00 mL	D	04/30/13
13-8557-WN15AMSD	SP1-5-(1-5)	9.16 g	1.00 mL	D	04/30/13
13-8558-WN15B	SP1-1-(1-5)	8.28 g	1.00 mL	D	04/30/13
13-8559-WN15C	SP1-6-(1-5)	8.02 g	1.00 mL	D	04/30/13
13-8560-WN15D	SP1-2-(1-5)	8.85 g	1.00 mL	D	04/30/13
13-8561-WN15E	SP1-3-(1-5)	8.19 g	1.00 mL	D	04/30/13
13-8562-WN15F	SP1-8-(1-5)	8.03 g	1.00 mL	D	04/30/13
13-8563-WN15G	SP1-7-(1-5)	9.09 g	1.00 mL	D	04/30/13
13-8564-WN15H	SP1-4-(1-5)	8.73 g	1.00 mL	D	04/30/13
13-8565-WN15I	SP2-4-(1-5)	8.55 g	1.00 mL	D	04/30/13
13-8566-WN15J	SP2-1-(1-5)	8.99 g	1.00 mL	D	04/30/13
13-8567-WN15K	SP2-2-(1-5)	8.73 g	1.00 mL	D	04/30/13
13-8568-WN15L	SP2-3-(1-5)	7.88 g	1.00 mL	D	04/30/13

Basis: D=Dry Weight W=As Received

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SP1-5-(1-5)
SAMPLE

Lab Sample ID: WN15A
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Percent Total Solids: 89.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	**7440-36-0**	**Antimony**	0.0056	0.0865	**0.0389**	J
3050B	05/01/13	6010C	05/06/13	**7440-38-2**	**Arsenic**	1.0	10.9	**8.8**	J
3050B	05/01/13	6010C	05/06/13	**7440-39-3**	**Barium**	0.131	0.7	**73.4**	
3050B	05/01/13	6010C	05/06/13	**7440-43-9**	**Cadmium**	0.240	0.4	**1.3**	
3050B	05/01/13	6010C	05/06/13	**7440-47-3**	**Chromium**	0.59	1	**38**	
3050B	05/01/13	6010C	05/06/13	**7440-48-4**	**Cobalt**	0.065	0.7	**12.5**	
3050B	05/01/13	6010C	05/06/13	**7440-50-8**	**Copper**	0.109	0.4	**72.0**	
3050B	05/01/13	6010C	05/06/13	**7439-92-1**	**Lead**	0.28	4	**48**	
3050B	05/01/13	6010C	05/06/13	**7439-96-5**	**Manganese**	0.087	0.2	**708**	
CLP	05/01/13	7471A	05/03/13	**7439-97-6**	**Mercury**	0.0010	0.02	**0.13**	
3050B	05/01/13	6010C	05/06/13	**7440-02-0**	**Nickel**	0.65	2	**57**	
3050B	05/01/13	200.8	05/07/13	**7782-49-2**	**Selenium**	0.043	0.216	**0.095**	J
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.065	0.7	0.7	U
3050B	05/01/13	200.8	05/07/13	**7440-28-0**	**Thallium**	0.0013	0.0865	**0.0476**	J
3050B	05/01/13	6010C	05/06/13	**7440-66-6**	**Zinc**	0.26	2	**95**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: SP1-1-(1-5)
SAMPLE

Lab Sample ID: WN15B
LIMS ID: 13-8558
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Percent Total Solids: 79.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	**7440-36-0**	**Antimony**	0.006	0.098	**0.010**	J
3050B	05/01/13	6010C	05/06/13	7440-38-2	Arsenic	1.1	10	10	U
3050B	05/01/13	6010C	05/06/13	**7440-39-3**	**Barium**	0.149	0.7	**67.4**	
3050B	05/01/13	6010C	05/06/13	**7440-43-9**	**Cadmium**	0.272	0.5	**0.9**	
3050B	05/01/13	6010C	05/06/13	**7440-47-3**	**Chromium**	0.67	1	**51**	
3050B	05/01/13	6010C	05/06/13	**7440-48-4**	**Cobalt**	0.074	0.7	**16.8**	
3050B	05/01/13	6010C	05/06/13	**7440-50-8**	**Copper**	0.124	0.5	**51.4**	
3050B	05/01/13	6010C	05/06/13	**7439-92-1**	**Lead**	0.32	4.95	**4.80**	J
3050B	05/01/13	6010C	05/06/13	**7439-96-5**	**Manganese**	0.099	0.2	**469**	
CLP	05/01/13	7471A	05/03/13	**7439-97-6**	**Mercury**	0.0012	0.02	**0.05**	
3050B	05/01/13	6010C	05/06/13	**7440-02-0**	**Nickel**	0.74	2	**46**	
3050B	05/01/13	200.8	05/07/13	**7782-49-2**	**Selenium**	0.049	0.245	**0.152**	J
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.074	0.7	0.7	U
3050B	05/01/13	200.8	05/07/13	**7440-28-0**	**Thallium**	0.001	0.098	**0.049**	J
3050B	05/01/13	6010C	05/06/13	**7440-66-6**	**Zinc**	0.30	2	**65**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

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ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: SP1-6-(1-5)
SAMPLE

Lab Sample ID: WN15C
LIMS ID: 13-8559
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Percent Total Solids: 77.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	**7440-36-0**	**Antimony**	0.007	0.100	**0.010**	J
3050B	05/01/13	6010C	05/06/13	**7440-38-2**	**Arsenic**	1.2	12.5	**3.0**	J
3050B	05/01/13	6010C	05/06/13	**7440-39-3**	**Barium**	0.150	0.8	**90.2**	
3050B	05/01/13	6010C	05/06/13	**7440-43-9**	**Cadmium**	0.275	0.5	**0.8**	
3050B	05/01/13	6010C	05/06/13	**7440-47-3**	**Chromium**	0.68	1	**45**	
3050B	05/01/13	6010C	05/06/13	**7440-48-4**	**Cobalt**	0.075	0.8	**15.4**	
3050B	05/01/13	6010C	05/06/13	**7440-50-8**	**Copper**	0.125	0.5	**34.3**	
3050B	05/01/13	6010C	05/06/13	**7439-92-1**	**Lead**	0.33	5	**8**	
3050B	05/01/13	6010C	05/06/13	**7439-96-5**	**Manganese**	0.100	0.3	**431**	
CLP	05/01/13	7471A	05/03/13	**7439-97-6**	**Mercury**	0.0013	0.03	**0.05**	
3050B	05/01/13	6010C	05/06/13	**7440-02-0**	**Nickel**	0.75	3	**41**	
3050B	05/01/13	200.8	05/07/13	**7782-49-2**	**Selenium**	0.050	0.251	**0.135**	J
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.075	0.8	0.8	U
3050B	05/01/13	200.8	05/07/13	**7440-28-0**	**Thallium**	0.002	0.100	**0.045**	J
3050B	05/01/13	6010C	05/06/13	**7440-66-6**	**Zinc**	0.30	3	**69**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

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ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: SP1-2-(1-5)
SAMPLE

Lab Sample ID: WN15D
LIMS ID: 13-8560
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Percent Total Solids: 86.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	**7440-36-0**	**Antimony**	0.0060	0.0920	**0.0138**	J
3050B	05/01/13	6010C	05/06/13	**7440-38-2**	**Arsenic**	0.41	4.47	**2.01**	J
3050B	05/01/13	6010C	05/06/13	**7440-39-3**	**Barium**	0.054	0.3	**65.4**	
3050B	05/01/13	6010C	05/06/13	**7440-43-9**	**Cadmium**	0.098	0.2	**0.7**	
3050B	05/01/13	6010C	05/06/13	**7440-47-3**	**Chromium**	0.241	0.4	**27.8**	
3050B	05/01/13	6010C	05/06/13	**7440-48-4**	**Cobalt**	0.027	0.3	**9.3**	
3050B	05/01/13	6010C	05/06/13	**7440-50-8**	**Copper**	0.045	0.2	**39.0**	
3050B	05/01/13	6010C	05/06/13	**7439-92-1**	**Lead**	0.12	2	**53**	
3050B	05/01/13	6010C	05/06/13	**7439-96-5**	**Manganese**	0.0358	0.09	**534**	
CLP	05/01/13	7471A	05/03/13	**7439-97-6**	**Mercury**	0.0011	0.02	**0.15**	
3050B	05/01/13	6010C	05/06/13	**7440-02-0**	**Nickel**	0.268	0.9	**46.8**	
3050B	05/01/13	200.8	05/07/13	**7782-49-2**	**Selenium**	0.046	0.230	**0.078**	J
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.027	0.3	0.3	U
3050B	05/01/13	200.8	05/07/13	**7440-28-0**	**Thallium**	0.0014	0.0920	**0.0368**	J
3050B	05/01/13	6010C	05/06/13	**7440-66-6**	**Zinc**	0.107	0.9	**74.7**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: SP1-3-(1-5)
SAMPLE

Lab Sample ID: WN15E
LIMS ID: 13-8561
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

Percent Total Solids: 78.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	**7440-36-0**	**Antimony**	0.007	0.101	**0.020**	**J**
3050B	05/01/13	6010C	05/06/13	**7440-38-2**	**Arsenic**	1.1	12.4	**5.5**	**J**
3050B	05/01/13	6010C	05/06/13	**7440-39-3**	**Barium**	0.148	0.7	**97.7**	
3050B	05/01/13	6010C	05/06/13	**7440-43-9**	**Cadmium**	0.272	0.5	**0.9**	
3050B	05/01/13	6010C	05/06/13	**7440-47-3**	**Chromium**	0.67	1	**46**	
3050B	05/01/13	6010C	05/06/13	**7440-48-4**	**Cobalt**	0.074	0.7	**18.1**	
3050B	05/01/13	6010C	05/06/13	**7440-50-8**	**Copper**	0.124	0.5	**76.5**	
3050B	05/01/13	6010C	05/06/13	**7439-92-1**	**Lead**	0.32	5	**50**	
3050B	05/01/13	6010C	05/06/13	**7439-96-5**	**Manganese**	0.099	0.2	**794**	
CLP	05/01/13	7471A	05/03/13	**7439-97-6**	**Mercury**	0.0011	0.02	**0.17**	
3050B	05/01/13	6010C	05/06/13	**7440-02-0**	**Nickel**	0.74	2	**57**	
3050B	05/01/13	200.8	05/07/13	**7782-49-2**	**Selenium**	0.050	0.253	**0.213**	**J**
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.074	0.7	0.7	U
3050B	05/01/13	200.8	05/07/13	**7440-28-0**	**Thallium**	0.002	0.101	**0.056**	**J**
3050B	05/01/13	6010C	05/06/13	**7440-66-6**	**Zinc**	0.30	2	**98**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

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ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: SP1-8-(1-5)
SAMPLE

Lab Sample ID: WN15F
LIMS ID: 13-8562
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Percent Total Solids: 77.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	7440-36-0	Antimony	0.007	0.1	0.1	U
3050B	05/01/13	6010C	05/06/13	**7440-38-2**	**Arsenic**	1.2	12.9	**2.5**	**J**
3050B	05/01/13	6010C	05/06/13	**7440-39-3**	**Barium**	0.155	0.8	**98.2**	
3050B	05/01/13	6010C	05/06/13	**7440-43-9**	**Cadmium**	0.284	0.5	**0.9**	
3050B	05/01/13	6010C	05/06/13	**7440-47-3**	**Chromium**	0.70	1	**51**	
3050B	05/01/13	6010C	05/06/13	**7440-48-4**	**Cobalt**	0.077	0.8	**18.8**	
3050B	05/01/13	6010C	05/06/13	**7440-50-8**	**Copper**	0.129	0.5	**34.8**	
3050B	05/01/13	6010C	05/06/13	**7439-92-1**	**Lead**	0.34	5.16	**3.02**	**J**
3050B	05/01/13	6010C	05/06/13	**7439-96-5**	**Manganese**	0.103	0.3	**593**	
CLP	05/01/13	7471A	05/03/13	**7439-97-6**	**Mercury**	0.0013	0.02	**0.05**	
3050B	05/01/13	6010C	05/06/13	**7440-02-0**	**Nickel**	0.77	3	**46**	
3050B	05/01/13	200.8	05/07/13	**7782-49-2**	**Selenium**	0.051	0.256	**0.179**	**J**
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.077	0.8	0.8	U
3050B	05/01/13	200.8	05/07/13	**7440-28-0**	**Thallium**	0.002	0.102	**0.051**	**J**
3050B	05/01/13	6010C	05/06/13	**7440-66-6**	**Zinc**	0.31	3	**67**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

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ANALYTICAL RESOURCES INCORPORATED

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Sample ID: SP1-7-(1-5)
SAMPLE

Lab Sample ID: WN15G
LIMS ID: 13-8563
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Percent Total Solids: 88.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	**7440-36-0**	**Antimony**	0.0058	0.0888	**0.0089**	J
3050B	05/01/13	6010C	05/06/13	**7440-38-2**	**Arsenic**	1.0	10.9	**1.5**	J
3050B	05/01/13	6010C	05/06/13	**7440-39-3**	**Barium**	0.130	0.7	**53.4**	
3050B	05/01/13	6010C	05/06/13	**7440-43-9**	**Cadmium**	0.239	0.4	**0.8**	
3050B	05/01/13	6010C	05/06/13	**7440-47-3**	**Chromium**	0.59	1	**32**	
3050B	05/01/13	6010C	05/06/13	**7440-48-4**	**Cobalt**	0.065	0.7	**11.8**	
3050B	05/01/13	6010C	05/06/13	**7440-50-8**	**Copper**	0.109	0.4	**44.7**	
3050B	05/01/13	6010C	05/06/13	**7439-92-1**	**Lead**	0.28	4	**19**	
3050B	05/01/13	6010C	05/06/13	**7439-96-5**	**Manganese**	0.087	0.2	**467**	
CLP	05/01/13	7471A	05/03/13	**7439-97-6**	**Mercury**	0.0010	0.02	**0.06**	
3050B	05/01/13	6010C	05/06/13	**7440-02-0**	**Nickel**	0.65	2	**39**	
3050B	05/01/13	200.8	05/07/13	**7782-49-2**	**Selenium**	0.044	0.222	**0.044**	J
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.065	0.7	0.7	U
3050B	05/01/13	200.8	05/07/13	**7440-28-0**	**Thallium**	0.0013	0.0888	**0.0400**	J
3050B	05/01/13	6010C	05/06/13	**7440-66-6**	**Zinc**	0.26	2	**59**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

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Sample ID: SP1-4-(1-5)
SAMPLE

Lab Sample ID: WN15H
LIMS ID: 13-8564
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Percent Total Solids: 85.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	**7440-36-0**	**Antimony**	0.0059	0.0903	**0.0181**	**J**
3050B	05/01/13	6010C	05/06/13	7440-38-2	Arsenic	1.1	10	10	U
3050B	05/01/13	6010C	05/06/13	**7440-39-3**	**Barium**	0.139	0.7	**52.9**	
3050B	05/01/13	6010C	05/06/13	**7440-43-9**	**Cadmium**	0.254	0.5	**0.7**	
3050B	05/01/13	6010C	05/06/13	**7440-47-3**	**Chromium**	0.62	1	**36**	
3050B	05/01/13	6010C	05/06/13	**7440-48-4**	**Cobalt**	0.069	0.7	**12.3**	
3050B	05/01/13	6010C	05/06/13	**7440-50-8**	**Copper**	0.116	0.5	**40.2**	
3050B	05/01/13	6010C	05/06/13	**7439-92-1**	**Lead**	0.30	5	**12**	
3050B	05/01/13	6010C	05/06/13	**7439-96-5**	**Manganese**	0.092	0.2	**441**	
CLP	05/01/13	7471A	05/03/13	**7439-97-6**	**Mercury**	0.0011	0.02	**0.05**	
3050B	05/01/13	6010C	05/06/13	**7440-02-0**	**Nickel**	0.69	2	**61**	
3050B	05/01/13	200.8	05/07/13	**7782-49-2**	**Selenium**	0.045	0.226	**0.068**	**J**
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.069	0.7	0.7	U
3050B	05/01/13	200.8	05/07/13	**7440-28-0**	**Thallium**	0.0014	0.0903	**0.0316**	**J**
3050B	05/01/13	6010C	05/06/13	**7440-66-6**	**Zinc**	0.28	2	**62**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

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Sample ID: SP2-4-(1-5)
SAMPLE

Lab Sample ID: WN15I
LIMS ID: 13-8565
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Percent Total Solids: 81.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	**7440-36-0**	**Antimony**	0.006	0.098	**0.010**	J
3050B	05/01/13	6010C	05/06/13	**7440-38-2**	**Arsenic**	1.1	12.1	**2.1**	J
3050B	05/01/13	6010C	05/06/13	**7440-39-3**	**Barium**	0.145	0.7	**79.4**	
3050B	05/01/13	6010C	05/06/13	**7440-43-9**	**Cadmium**	0.265	0.5	**1.0**	
3050B	05/01/13	6010C	05/06/13	**7440-47-3**	**Chromium**	0.65	1	**45**	
3050B	05/01/13	6010C	05/06/13	**7440-48-4**	**Cobalt**	0.072	0.7	**15.5**	
3050B	05/01/13	6010C	05/06/13	**7440-50-8**	**Copper**	0.121	0.5	**61.0**	
3050B	05/01/13	6010C	05/06/13	**7439-92-1**	**Lead**	0.31	5	**28**	
3050B	05/01/13	6010C	05/06/13	**7439-96-5**	**Manganese**	0.096	0.2	**524**	
CLP	05/01/13	7471A	05/03/13	**7439-97-6**	**Mercury**	0.0011	0.02	**0.08**	
3050B	05/01/13	6010C	05/06/13	**7440-02-0**	**Nickel**	0.72	2	**53**	
3050B	05/01/13	200.8	05/07/13	**7782-49-2**	**Selenium**	0.048	0.245	**0.078**	J
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.072	0.7	0.7	U
3050B	05/01/13	200.8	05/07/13	**7440-28-0**	**Thallium**	0.001	0.098	**0.044**	J
3050B	05/01/13	6010C	05/06/13	**7440-66-6**	**Zinc**	0.29	2	**79**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

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Sample ID: SP2-1-(1-5)
SAMPLE

Lab Sample ID: WN15J
LIMS ID: 13-8566
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Percent Total Solids: 87.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	**7440-36-0**	**Antimony**	0.0058	0.0887	**0.0177**	J
3050B	05/01/13	6010C	05/06/13	**7440-38-2**	**Arsenic**	1.0	11.4	**6.7**	J
3050B	05/01/13	6010C	05/06/13	**7440-39-3**	**Barium**	0.137	0.7	**88.3**	
3050B	05/01/13	6010C	05/06/13	**7440-43-9**	**Cadmium**	0.251	0.5	**1.0**	
3050B	05/01/13	6010C	05/06/13	**7440-47-3**	**Chromium**	0.62	1	**45**	
3050B	05/01/13	6010C	05/06/13	**7440-48-4**	**Cobalt**	0.068	0.7	**15.4**	
3050B	05/01/13	6010C	05/06/13	**7440-50-8**	**Copper**	0.114	0.5	**52.0**	
3050B	05/01/13	6010C	05/06/13	**7439-92-1**	**Lead**	0.30	5	**27**	
3050B	05/01/13	6010C	05/06/13	**7439-96-5**	**Manganese**	0.091	0.2	**762**	
CLP	05/01/13	7471A	05/03/13	**7439-97-6**	**Mercury**	0.0010	0.02	**0.11**	
3050B	05/01/13	6010C	05/06/13	**7440-02-0**	**Nickel**	0.68	2	**46**	
3050B	05/01/13	200.8	05/07/13	**7782-49-2**	**Selenium**	0.044	0.222	**0.124**	J
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.068	0.7	0.7	U
3050B	05/01/13	200.8	05/07/13	**7440-28-0**	**Thallium**	0.0013	0.0887	**0.0444**	J
3050B	05/01/13	6010C	05/06/13	**7440-66-6**	**Zinc**	0.27	2	**103**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

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Sample ID: SP2-2-(1-5)
SAMPLE

Lab Sample ID: WN15K
LIMS ID: 13-8567
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Percent Total Solids: 84.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	**7440-36-0**	**Antimony**	0.0061	0.0944	**0.0189**	J
3050B	05/01/13	6010C	05/06/13	**7440-38-2**	**Arsenic**	1.1	11.7	**2.5**	J
3050B	05/01/13	6010C	05/06/13	**7440-39-3**	**Barium**	0.140	0.7	**85.9**	
3050B	05/01/13	6010C	05/06/13	**7440-43-9**	**Cadmium**	0.257	0.5	**1.0**	
3050B	05/01/13	6010C	05/06/13	**7440-47-3**	**Chromium**	0.63	1	**48**	
3050B	05/01/13	6010C	05/06/13	**7440-48-4**	**Cobalt**	0.070	0.7	**14.5**	
3050B	05/01/13	6010C	05/06/13	**7440-50-8**	**Copper**	0.117	0.5	**64.2**	
3050B	05/01/13	6010C	05/06/13	**7439-92-1**	**Lead**	0.30	5	**43**	
3050B	05/01/13	6010C	05/06/13	**7439-96-5**	**Manganese**	0.094	0.2	**592**	
CLP	05/01/13	7471A	05/03/13	**7439-97-6**	**Mercury**	0.0011	0.02	**0.09**	
3050B	05/01/13	6010C	05/06/13	**7440-02-0**	**Nickel**	0.70	2	**47**	
3050B	05/01/13	200.8	05/07/13	**7782-49-2**	**Selenium**	0.047	0.236	**0.170**	J
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.070	0.7	0.7	U
3050B	05/01/13	200.8	05/07/13	**7440-28-0**	**Thallium**	0.0014	0.0944	**0.0425**	J
3050B	05/01/13	6010C	05/06/13	**7440-66-6**	**Zinc**	0.28	2	**93**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

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Sample ID: SP2-3-(1-5)
SAMPLE

Lab Sample ID: WN15L
LIMS ID: 13-8568
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/18/13
Date Received: 04/23/13

Percent Total Solids: 78.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	**7440-36-0**	**Antimony**	0.007	0.101	**0.025**	J
3050B	05/01/13	6010C	05/06/13	**7440-38-2**	**Arsenic**	1.1	12.3	**4.5**	J
3050B	05/01/13	6010C	05/06/13	**7440-39-3**	**Barium**	0.148	0.7	**100**	
3050B	05/01/13	6010C	05/06/13	**7440-43-9**	**Cadmium**	0.271	0.5	**0.9**	
3050B	05/01/13	6010C	05/06/13	**7440-47-3**	**Chromium**	0.66	1	**45**	
3050B	05/01/13	6010C	05/06/13	**7440-48-4**	**Cobalt**	0.074	0.7	**15.3**	
3050B	05/01/13	6010C	05/06/13	**7440-50-8**	**Copper**	0.123	0.5	**64.0**	
3050B	05/01/13	6010C	05/06/13	**7439-92-1**	**Lead**	0.32	5	**48**	
3050B	05/01/13	6010C	05/06/13	**7439-96-5**	**Manganese**	0.098	0.2	**597**	
CLP	05/01/13	7471A	05/03/13	**7439-97-6**	**Mercury**	0.0012	0.02	**0.12**	
3050B	05/01/13	6010C	05/06/13	**7440-02-0**	**Nickel**	0.74	2	**50**	
3050B	05/01/13	200.8	05/07/13	**7782-49-2**	**Selenium**	0.050	0.253	**0.172**	J
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.074	0.7	0.7	U
3050B	05/01/13	200.8	05/07/13	**7440-28-0**	**Thallium**	0.002	0.101	**0.046**	J
3050B	05/01/13	6010C	05/06/13	**7440-66-6**	**Zinc**	0.30	2	**96**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

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ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
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Sample ID: SP1-5-(1-5)
MATRIX SPIKE

Lab Sample ID: WN15A
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Antimony	200.8	0.09 U	0.43	21.7	2.0%	N
Arsenic	6010C	10 U	190	174	109%	
Barium	6010C	73.4	251	174	102%	
Cadmium	6010C	1.3	46.6	43.6	104%	
Chromium	6010C	38	81	43.6	98.6%	
Cobalt	6010C	12.5	54.3	43.6	95.9%	
Copper	6010C	72.0	100	43.6	64.2%	N
Lead	6010C	48	220	174	98.9%	
Manganese	6010C	708	668	43.6	-91.7%	H
Mercury	7471A	0.13	0.36	0.189	122%	
Nickel	6010C	57	110	43.6	122%	
Selenium	200.8	0.2 U	57.8	69.3	83.4%	
Silver	6010C	0.7 U	45.5	43.6	104%	
Thallium	200.8	0.09 U	17.7	21.7	81.6%	
Zinc	6010C	95	134	43.6	89.4%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

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INORGANICS ANALYSIS DATA SHEET
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Sample ID: SP1-5-(1-5)
DUPLICATE

Lab Sample ID: WN15A
LIMS ID: 13-8557
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: 04/17/13
Date Received: 04/23/13

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Antimony	200.8	0.09 U	0.09 U	0.0%	+/- 0.09	L
Arsenic	6010C	10 U	10 U	0.0%	+/- 10	L
Barium	6010C	73.4	74.4	1.4%	+/- 20%	
Cadmium	6010C	1.3	0.9	36.4%	+/- 0.4	L
Chromium	6010C	38	32	17.1%	+/- 20%	
Cobalt	6010C	12.5	10.7	15.5%	+/- 20%	
Copper	6010C	72.0	53.9	28.8%	+/- 20%	*
Lead	6010C	48	47	2.1%	+/- 20%	
Manganese	6010C	708	582	19.5%	+/- 20%	
Mercury	7471A	0.13	0.16	20.7%	+/- 20%	*
Nickel	6010C	57	56	1.8%	+/- 20%	
Selenium	200.8	0.2 U	0.2 U	0.0%	+/- 0.2	L
Silver	6010C	0.7 U	0.7 U	0.0%	+/- 0.7	L
Thallium	200.8	0.09 U	0.09 U	0.0%	+/- 0.09	L
Zinc	6010C	95	82	14.7%	+/- 20%	

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

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Sample ID: LAB CONTROL

Lab Sample ID: WN15LCS
LIMS ID: 13-8558
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Antimony	200.8	25.2	25.0	101%	
Arsenic	6010C	212	200	106%	
Barium	6010C	203	200	102%	
Cadmium	6010C	52.2	50.0	104%	
Chromium	6010C	52.5	50.0	105%	
Cobalt	6010C	51.1	50.0	102%	
Copper	6010C	51.3	50.0	103%	
Lead	6010C	204	200	102%	
Manganese	6010C	49.4	50.0	98.8%	
Mercury	7471A	0.55	0.50	110%	
Nickel	6010C	51	50	102%	
Selenium	200.8	78.1	80.0	97.6%	
Silver	6010C	54.6	50.0	109%	
Thallium	200.8	24.5	25.0	98.0%	
Zinc	6010C	50	50	100%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: WN15MB
LIMS ID: 13-8558
Matrix: Soil
Data Release Authorized:
Reported: 05/08/13

QC Report No: WN15-GeoEngineers
Project: PA Mill Stockpile Sampling
000137-015-03
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/01/13	200.8	05/07/13	**7440-36-0**	**Antimony**	0.006	0.100	**0.025**	**J**
3050B	05/01/13	6010C	05/06/13	7440-38-2	Arsenic	0.46	5	5	U
3050B	05/01/13	6010C	05/06/13	7440-39-3	Barium	0.060	0.3	0.3	U
3050B	05/01/13	6010C	05/06/13	7440-43-9	Cadmium	0.110	0.2	0.2	U
3050B	05/01/13	6010C	05/06/13	7440-47-3	Chromium	0.270	0.5	0.5	U
3050B	05/01/13	6010C	05/06/13	7440-48-4	Cobalt	0.030	0.3	0.3	U
3050B	05/01/13	6010C	05/06/13	7440-50-8	Copper	0.050	0.2	0.2	U
3050B	05/01/13	6010C	05/06/13	7439-92-1	Lead	0.13	2	2	U
3050B	05/01/13	6010C	05/06/13	7439-96-5	Manganese	0.040	0.1	0.1	U
CLP	05/01/13	7471A	05/03/13	7439-97-6	Mercury	0.0013	0.02	0.02	U
3050B	05/01/13	6010C	05/06/13	7440-02-0	Nickel	0.30	1	1	U
3050B	05/01/13	200.8	05/07/13	7782-49-2	Selenium	0.050	0.2	0.2	U
3050B	05/01/13	6010C	05/06/13	7440-22-4	Silver	0.030	0.3	0.3	U
3050B	05/01/13	200.8	05/07/13	7440-28-0	Thallium	0.002	0.1	0.1	U
3050B	05/01/13	6010C	05/06/13	7440-66-6	Zinc	0.12	1	1	U

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.