



December 21, 2010 Project No. 96-1412-853B

E/10/2266

Ed Emswiler Alaska Department of Environmental Conservation- Solid Waste Program 410 Willoughby Avenue, Suite 303 P.O. Box 111800 Juneau, Alaska 99811-1800

RESULTS OF THE CHEMICAL CHARACTERIZATION OF WOOD CHIPS AT WHITE PASS & YUKON ROUTE RAILROAD YARD, SKAGWAY ALASKA

Dear Mr. Emswiler,

Further to your letter dated July 26, 2010 addressed to White Pass & Yukon Route Railroad (White Pass), Golder Associates Ltd. (Golder), on behalf of White Pass, is pleased to provide the Alaska State Department of Environmental Conservation (ADEC) with the results of the wood chip stockpile sampling completed at the White Pass shops in Skagway, Alaska to determine the chemical composition of the wood chips and what chemicals, if any, are capable of leaching. In order to characterize the pile a two phase program of chemical characterization followed by leachate testing was completed in accordance to ADECs approval on July 26, 2010.

1.0 SCOPE OF WORK

Stockpile sampling was conducted on August 13 and 14, 2010. Sampling was undertaken by a qualified person from Golder as defined in Title 18 Chapter 75 of the Alaska Administrative Code (18AAC 75.990(100)). The stockpile was first divided into approximately six, 500 cubic meter cells (C1-C6). Five discrete samples and one composite sample were collected on a "dice" pattern throughout out each cell. One discrete sample, chosen at random, and one composite sample from each segment was submitted to TestAmerica Laboratories, Inc. in Beaverton, Oregon and analyzed for the following parameters:

- benzene, toluene, ethylbenzene, xylenes (BTEX, Method #AK101);
- Volatile and Gasoline Range Organics (GRO, Method #AK101);
- Diesel Range Organics (DRO, Method #AK102/103); and,
- Polyaromatic Hydrocarbons (PAHs, Method #8270C).



All six composite samples were also analyzed for DRO and PAH leachibility.

A total of 14 samples (including two quality control and/or quality assurance [QA/QC] duplicates) were submitted for Laboratory analysis. The approximate location of each stockpile sample is shown on the White Pass Stockpile Sampling Location Plan, Figure 1.

Golder standard sampling and decontamination procedures were followed during this investigation. Samples were placed in appropriate laboratory supplied jars and stored in a chilled cooler for transportation to the laboratory.

2.0 RESULTS

Analytical results from phase one, chemical characterization were received by Golder on August 31, 2010. The laboratory test results were compared to ADEC cleanup levels for direct contact and migration to groundwater (groundwater protection). The analytical results are attached and summarised in Table 1. Quality Assurance/Quality Control results are summarised in Table 2. Due to the heterogeneity of the woodchip matrix discrepancies between the duplicated samples and originals can be rationalized.

As shown on the Table 1, there were no concentrations which exceeded ADEC standards for (BTEX). The discrete sample in Cell 4 (C4-d) and the composite sample from Cell 6 (C6-c) were the only samples to exceed the ADEC standard for Gasoline Range Organics (GRO). All samples exceed both direct contact and groundwater protection levels for diesel-range organics (DRO) and polycyclic aromatic hydrocarbons (PAHs): benzo(a)anthracene; benzo(a)pyrene and benzo(a)flouranthene. In addition, the concentrations of 3 samples (C4-d, C4-c and C4-c (duplicate)) also exceed ADECs maximum allowable range for petroleum hydrocarbons with potential for migration to groundwater.

Due to the exceedances of concentrations in the above parameters, an evaluation of the leaching potential of the wood chips was requested by Golder on September 16, 2010. All six composite samples collected were analyzed for the leachability of DRO and PAHs. The results were received from TestAmerica on October 4, 2010.

The results of phase two, leachate characterization attached and summarized in Table 3. As shown on this table, the leachate exceeded ADEC groundwater cleanup levels for DRO and benzo(a)anthracene in all samples. One leachate sample also exceeded groundwater cleanup levels for benzo(a)pyrene and benzo(b)fluoranthene.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Based on this data, pending final disposition of the material, a plan should be prepared to manage the wood chip pile to minimize leachate generation and potential contamination of storm water runoff and submitted to ADEC for approval. The groundwater monitoring plan currently in place at the site would include additional monitoring of wells located immediately up-gradient and down-gradient of the pile. Should any permitting be required or the transport of the material for off-site use, storage or disposal, written authorization will be obtained from ADEC.



4.0 LIMITATIONS

This letter was prepared for the exclusive use of White Pass & Yukon Route Railroad and their representatives. The report is based on data and information collected during the previous documented investigations for the Site. The findings, interpretations and conclusions are based solely on the site conditions observed while at the property. The data presented in this report represent the soil conditions at the sampling locations tested. Soil and water conditions may vary with location, depth, sampling, methodology, analytical techniques and other factors.

Golder makes no warranty, expressed or implied, and assumes no liability with respect to the use of the information contained in this report at the subject site, or at any other site, for other than its intended purpose.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. Golder accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

If new information is discovered during future work, including excavations, borings or other studies, Golder should be requested to re-evaluate the conclusions presented in this report and to provide amendments as required.

5.0 CLOSURE

We trust that this letter adequately provides the results of the wood chip stockpile sampling at the White Pass Shops in Skagway, Alaska for your current needs and approval. Should you have any questions or require any additional information please call Gary Hamilton at (604) 296-4271.

Yours very truly,

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED

ORIGINAL SIGNED

Erin Liebrecht, GIT (AB) Junior Hydrogeologist Gary Hamilton, P.Geo. (BC) Principal - Senior Hydrogeologist

EL/GH/nlb

CC: Ed Hanousek, Superintendent of Rail Operations, White Pass & Yukon Route Railroad

Attachments: Table 1 - Chemical Characterization

Table 2 - QA/QC Results
Table 3 - Leachate Analysis

Figure 1 - White Pass Stockpile Sampling Location Plan

TestAmerica Laboratory Certificates

\bur1-s-filesrv2\final\1996\1412\96-1412-853b\let 1221_10 - stockpile characterization r1\let 1221_10 - stockpile characterization r1.



WhitePass Stockpile Sampling, August 2010 Chemical Characterization

	Location			C4 -c	C4 -d	C5 -d	C5 -c	C1 -d	C1 -c	C2-d	C2-c	C3-d	C3-c	C6-d	C6-c	C4-d	C6-d
	SCN	ADEC	ADEC	5150-1	5150-3	5150-9	5150-10	5149-2	5149-6	5149-10	5148-2	5148-5	5148-8	5151-5	5151-6	5151-7	5151-8
	Date	Clean-up	Clean-up	14-Aug-2010	14-Aug-2010	14-Aug-2010	14-Aug-2010	13-Aug-2010	13-Aug-2010	13-Aug-2010	13-Aug-2010	13-Aug-2010	13-Aug-2010	14-Aug-2010	14-Aug-2010	14-Aug-2010	14-Aug-2010
		Levels DC ¹	Levels MG ² ျွို့														
	QA/QC	No	ž		FDA									FDA		FD	FD
Physical Tests			<u> </u>														
% Solids ³				74.1	47.3	52.2	44	54.3	52.2	81.4	44.4	64.9	57	46.2	42	40.7	52.3
BTEX																	
Benzene		150	0.025	<0.284	<0.438	< 0.196	< 0.249	<0.192	<0.208	<0.123	<0.245	<0.162	<0.188	< 0.237	<0.266	< 0.516	<0.198
Toluene		8,100	6.5	<1.42	<2.19	<0.980	<1.24	<0.962	<1.04	< 0.614	<1.23	<0.810	< 0.941	<1.18	<1.33	<2.58	< 0.992
Ethylbenzene		2	6.9	<1.42	<2.19	<0.980	<1.24	< 0.962	<1.04	< 0.614	<1.23	< 0.810	< 0.941	<1.18	<1.33	<2.58	< 0.992
Xylene (total m,p,o)		20,300	63	<1.42	2.34	<0.980	<1.24	<0.962	<1.04	<0.614	<1.23	<0.810	<0.941	<1.18	<1.33	<2.58	<0.992
Petroleum Hydrocarbons																	
Diesel Range Organics (DRO)		10,250 I	250	15200*	45800*	10800	12000	6090	10000	8080	10300	7200	10400	4740	6440	76700*	5480
Gasoline Range Organics (GRO	O)	1400 I	300	148	399	63.2	220	55	<41.6	<24.6	235	<32.4	60.9	<47.4	327	131	208
					•										•	·	
Polyaromatic Hydrocarbons			l,							_							
Acenaphthene		2,800	180	274	2370	184	234	120	204	42.6	148	82.7	191	68.6	54.2	3270	86.5
Acenaphthylene		2,800	180	6.78	41.9	<9.40	<11.4	<9.22	<9.44	<6.06	<11.2	<7.62	<8.81	<5.37	<5.91	62.9	<9.54
Anthracene		20,600	3,000	316	1040	174	161	61.3	154	183	213	128	192	59.8	61.1	1440	86.4
Benzo (a) anthracene		4.9	3.6	140	525	86.7	104	45.2	101	158	177	98.9	107	33.4	25.3	705	51.2
Benzo (a) pyrene		0.49	2.1	41	121	26.7	30.4	13	31	49	52.1	33.4	33.3	10.3	8.19	171	15.1
Benzo (b) fluoranthene		4.9	12	55.1	184	35.6	42.7	17.7	40.7	67.3	72.9	41.2	45.8	13.5	9.82	242	21.2
Benzo (ghi) perylene		1,400	38,700	10.3	26.4	<9.40	<11.4	<9.22	<9.44	11.6	12.1	9.83	9	<5.37	<5.91	35.5	<9.54
Benzo (k) fluoranthene		49	120	48.6	139	30.8	32.8	14	32.5	56.2	58.2	36.9	36.2	12.2	9.88	205	17.2
Chrysene		490	360	147	538	94.8	107	45.5	111	163	178	109	121	37.3	29.1	670	56.9
Dibenzo (a,h) anthracene		0.49	4	<6.76	13.2	<9.40	<11.4	<9.22	<9.44	<6.06	<11.2	<7.62	<8.81	<5.37	<5.91	17.7	<9.54
Fluoranthene		1,900	1,400	871	3480	463	545	278	523	783	936	515	674	176	132	4390	284
Fluorene		2,300	220	385	2290	212	247	106	193	108	174	69.3	173	51.3	54.8	3110	74.5
Indeno (1,2,3-cd) pyrene		4.9	41	10.7	32.6	<9.40	<11.4	<9.22	<9.44	13.4	13.3	8.67	8.94	<5.37	<5.91	43.8	<9.54
Naphthalene		1,400	20	8.8	45.2	<9.40	<11.4	<9.22	<9.44	<6.06	<11.2	<7.62	<8.81	<5.37	<5.91	110	<9.54
Phenanthrene		20,600	3,000	1190	6570	652	777	360	590	257	488	231	706	168	171	8810	267
Pyrene		1,400	1,000	549	2020	304	351	163	334	572	632	346	400	120	95.6	2650	183

Notes:

All concentrations are in milligrams per kilogram (mg/kg).

1. Alaska Department of Environmental Conservation (ADEC) Tables B1 & B2 of "18 AAC 75, Articles 3 and 9, Oil and Other Hazardous Substances Pollution Control" Regulations as amended through October 9, 2008. "Direct Contact - Under 40 inch Zone"

2. Alaska Department of Environmental Conservation (ADEC) Tables B1 & B2 of "18 AAC 75, Articles 3 and 9, Oil and Other Hazardous Substances Pollution Control" Regulations as amended through October 9, 2008. "Migration to Groundwater - Under 40 inch Zone"

- 3. Percent calculated by weight
- * sample exceeds Maximum Allowable Concentrations (Table B2)
- I Ingestion Pathway (Table B2)

FDA = Field Duplicate Available

FD = Field Duplicate

ND = (X) - Not detected at concentrations above laboratory detection limit (LDL) shown in parentheses.

X	Concentration exceeds ADEC standard for "Migration to Groundwater"
Х	Concentration exceeds ADEC standard for "Direct Contact"
Х	Concentration exceeds ADEC standard for both "Direct Contact" and "Migration to Groundwater"

TABLE 2 White Pass StockPile Sampling August 2010 Quality Assurance/Quality Control

Location SCN Date QA/QC	ADEC Clean-up Levels ¹	ADEC Clean-up Levels ²	C4-d 5150-3 14-Aug-2010 FDA	C4-d 5151-7 14-Aug-2010 FD	MRL	RPD %	DF	C6-d 5151-5 14-Aug-2010 FDA	C6-d 5151-8 14-Aug-2010 FD	MRL	RPD %	DF
n												
Physical Tests						.=./						
% Solids ³			47.3	40.7	0.01	15%		46.2	52.3	0.01	12%	
BTEX												
	5.0	0.025	<0.438	<0.516	0.438	NC	NC	<0.237	<0.198	0.198	NC	NC
Benzene	1,000			<0.516 <2.58		_	NC NC		<0.198 <0.992	0.198	NC NC	NC NC
Toluene	7	6.5	<2.19		2.19	NC	-	<1.18				NC NC
Ethylbenzene	700	6.9	<2.19	<2.58	2.19	NC	NC	<1.18	<0.992	0.992	NC	-
Xylene (total m,p,o)	10,000	63	2.34	<2.58	2.19	NC	NC	<1.18	<0.992	0.992	NC	NC
Petroleum Hydrocarbons												
Diesel Range Organics (DRO)	10,250	250	45800	76700	520	50%	59.42	4740	5480	267	14%	17.75
Gasoline Range Organics (GRO)	1400	300	399	131	87.6	101%	3.06	<47.4	208	39.7	NC	NC
Polyaromatic Hydrocarbons												
Acenaphthene	2,800	180	2370	3270	209	32%	4.31	68.6	86.5	9.54	23%	1.88
Acenaphthylene	2,800	180	41.9	62.9	5.22	40%	4.02	<5.37	<9.54	9.54	NC	NC
Anthracene	20,600	9,000	1040	1440	209	32%	1.91	59.8	86.4	9.54	36%	2.79
Benzo (a) anthracene	4.90	3.6	525	705	209	29%	0.86	33.4	51.2	9.54	42%	1.87
Benzo (a) pyrene	0.49	2.1	121	171	5.22	34%	9.58	10.3	15.1	9.54	38%	0.50
Benzo (b) fluoranthene	4.90	12	184	242	5.22	27%	11.11	13.5	21.2	9.54	44%	0.81
Benzo (ghi) perylene	1,400	38,700	26.4	35.5	5.22	29%	1.74	<5.37	<9.54	9.54	NC	NC
Benzo (k) fluoranthene	49	120	139	205	5.22	38%	12.64	12.2	17.2	9.54	34%	0.52
Chrysene	490	360	538	670	209	22%	0.63	37.3	56.9	9.54	42%	2.05
Dibenzo (a,h) anthracene	0.49	4	13.2	17.7	5.22	29%	0.86	<5.37	<9.54	9.54	NC	NC
Fluoranthene	1,900	1,400	3480	4390	209	23%	4.35	176	284	9.54	47%	11.32
Fluorene	2,300	220	2290	3110	209	30%	3.92	51.3	74.5	9.54	37%	2.43
Indeno (1,2,3-cd) pyrene	4.90	41	32.6	43.8	5.22	29%	2.15	<5.37	<9.54	9.54	NC	NC
Naphthalene	1,400	20	45.2	110	5.22	84%	12.41	<5.37	<9.54	9.54	NC	NC
Phenanthrene	20,600	3,000	6570	8810	209	29%	10.72	168	267	9.54	46%	10.38
Pyrene	1,400	1,000	2020	2650	209	27%	3.01	120	183	9.54	42%	6.60

Notes:

All concentrations are in milligrams per kilogram (mg/kg).

- Alaska Department of Environmental Conservation (ADEC) Tables B1 & B2 of "18 AAC 75, Articles 3 and 9, Oil and Other Hazardous Substances Pollution Control" Regulations as amended through October 9,
- 2008. "Direct Contact"
- Alaska Department of Environmental Conservation (ADEC) Tables B1 & B2 of "18 AAC 75, Articles 3 and 9, Oil and Other Hazardous Substances Pollution Control" Regulations as amended through October 9,
- 2008. "Migration to Groundwater" 3. Percent Calculated by weight

RPD - Relative Percent Difference

MRL- Method Reporting Limit

DF- Difference Factor

NC - Not Calculated

ND (X) - Not detected at concentrations above laboratory

detection limit (LDL) shown in parentheses.

X	Concentration exceeds ADEC standard for "Migration to Groundwater"
X	Concentration exceeds ADEC standard for "Direct Contact"
X	Concentration exceeds ADEC standard for both "Direct Contact" and "Migration to Groundwater"

MRL is above clean-up level (in bold, italics) ND(X)

TABLE 3
WhitePass Stockpile Sampling August 2010
Leachate Analysis (SPLP)

Location SCN	ADEC	C4 -c 5150-1	C5 -c 5150-10	C1 -c 5149-6	C2-c 5148-2	C3-c 5148-8	C6-c 5151-6
Date	Clean-up Levels GW ¹	14-Aug-2010	14-Aug-2010	13-Aug-2010	13-Aug-2010	13-Aug-2010	14-Aug-2010
QA/QC							
Petroleum Hydrocarbons (mg/L)							
Diesel Range Organics (DRO)	1.5	6.86	4.03	3.63	4.10	3.97	2.59
Polyaromatic Hydrocarbons (µg/L)							
Acenaphthene	2200	181	140	193	98.5	97.2	95.1
Acenaphthylene	2200	4.82	3.1	6.07	4.01	2.88	2.06
Anthracene	11000	22.3	11.2	14	12.2	5.93	7.93
Benzo (a) anthracene	1.2	7.36	2.94	4.77	7.63	3.22	1.52
Benzo (a) pyrene	0.2	ND	ND	ND	1.34	ND	ND
Benzo (b) fluoranthene	1.2	ND	ND	ND	2.13	0.963	ND
Benzo (ghi) perylene	1100	ND	ND	ND	ND	ND	ND
Benzo (k) fluoranthene	12	ND	ND	ND	1.55	ND	ND
Chrysene	120	6.46	2.8	3.89	5.88	3.17	1.43
Dibenzo (a,h) anthracene	0.12	ND	ND	ND	ND	ND	ND
Fluoranthene	1500	82	34.4	57.6	81.1	34.7	21.9
Fluorene	1500	142	73.2	92.6	45.4	16.1	47.8
Indeno (1,2,3-cd) pyrene	1.2	ND	ND	ND	ND	ND	ND
Naphthalene	730	2.57	ND	ND	ND	ND	ND
Phenanthrene	11000	195	77.3	91.9	29.4	ND	52.6
Pyrene	1100	47.8	20.3	32.7	49.2	21.1	12.3

Notes:

 Alaska Department of Environmental Conservation (ADEC) Tables B1 & B2 of "18 AAC 75, Articles 3 and 9, Oil and Other Hazardous Substances Pollution Control" Regulations as amended through October 9, 2008. "Direct Contact"

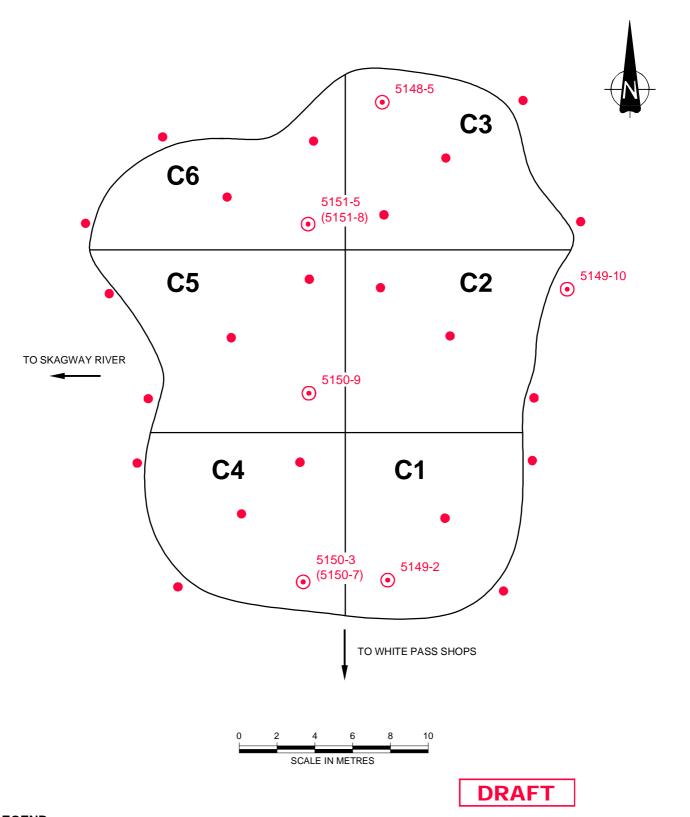
FDA = Field Duplicate Available

FD = Field Duplicate

 $\mbox{ND}=(\mbox{X})$ - Not detected at concentrations above laboratory $\mbox{ detection limit (LDL)}$ shown in parentheses.

Χ

Shaded box indicates concentration equals or exceeds ADEC clean up levels.



LEGEND

AM By:

9:42:01

2010

25,

October

Monday,

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File:

Drawing

- DISCRETE SAMPLE LOCATION
- DISCRETE SAMPLE SUBMITTED FOR ANALYSIS

NOTES

- 1. (5150-7) and (5151-8) ARE DUPLICATE SAMPLES.
- 2. PILE APPROXIMATELY 5 m HIGH.
- 3. EACH SEGMENT (C1-C6) APPROXIMATELY 500 m³.
- 4. DISCRETE SAMPLES ON PARAMETER TAKEN FROM SIDE OF PILE.

WHITE PASS & YUKON ROUTE SHOPS SKAGWAY, ALASKA

TITLE

WHITE PASS STOCKPILE SAMPLING LOCATION PLAN



PROJECT	No. 96-	1412-853B	PHASE	No.		1	000
DESIGN	EL	190CT10	SCALE	AS	SHOWN	REV.	-
CADD	GG	190CT10					
CHECK			F	IG	URI	E 1	
REVIEW			1	_			



PORTLAND, OR 9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

ORELAP#: OR100021

October 04, 2010

Amended Report

Erin Liebrecht Golder Associates - Canada 500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

RE: Stock Pile WP/YR

Enclosed are the results of analyses for samples received by the laboratory on 08/16/10 15:00. The following list is a summary of the Work Orders contained in this report, generated on 10/04/10 15:02.

If you have any questions concerning this report, please feel free to contact me.

Work Order	<u>Project</u>	<u>ProjectNumber</u>	
PTH0487	Stock Pile WP/YR	96-1412-853B	

TestAmerica Portland

Amended Report

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.



9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek DriveProject Number:96-1412-853BReport Created:Burnaby, BC/CAN V5C6C6Project Manager:Erin Liebrecht10/04/10 15:02

ANALYTICAL	REPORT FOR	SAMPLES
		17/4 19 11/1/7

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
5150-1	PTH0487-01	Other dry	08/14/10 09:05	08/16/10 15:00
5150-3	PTH0487-03	Other dry	08/14/10 09:05	08/16/10 15:00
5150-9	PTH0487-09	Other dry	08/14/10 10:11	08/16/10 15:00
5150-10	PTH0487-10	Other dry	08/14/10 11:45	08/16/10 15:00

TestAmerica Portland

Estella K Rieben

Amended Report

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.



9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek DriveProject Number:96-1412-853BReport Created:Burnaby, BC/CAN V5C6C6Project Manager:Erin Liebrecht10/04/10 15:02

Analytical Case Narrative

TestAmerica - Portland, OR

PTH0487

10/4/10: Amended Report

This report includes additional analyses for SPLP 8270 SIM PAH and SPLP AK 102 (for Diesel) as requested by the client.

8/31/10:

The AK101 GRO/BTEX method requires soil/solid samples to be extracted into methanol within 48 hours of sampling. The samples requested for this analysis were not received by the lab as extracts. They were past the 48 hour time frame upon arrival. The samples were extracted by the lab. Due to the absorbant nature of the matrix (wood chips), 10 grams of sample was extracted into 50 mls of methanol with the appropriate surrogate.

TestAmerica Portland

28tlla K Kuben

Amended Report

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.



9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number:96-1412-853BReport Created:Project Manager:Erin Liebrecht10/04/10 15:02

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
PTH0487-01RE1	(5150-1)			O	ther dry		Samp	led: 08/14/	10 09:05			N1
Gasoline Range Or	ganics	AK101/8021B	148		56.7	mg/kg dry	2x	10H0547	08/17/10 15:00	08/19/10 10:19	Q1	
Benzene		"	ND		0.284	"	"	"	"	"	RL3	
Toluene		"	ND		1.42	"	"	"	"	"	RL3	
Ethylbenzene		"	ND		1.42	"	"	"	"	"	RL3	
Xylenes (total)		"	ND		1.42	"	"	"	"	"	RL3	
Surrogate(s):	a,a,a-TFT (FID) a,a,a-TFT (PID)				117% 109%		50 - 150 % 50 - 150 %	"			"	
PTH0487-03RE1	(5150-3)			O	ther dry		Samp	led: 08/14/	10 09:05			N1
Gasoline Range Or	ganics	AK101/8021B	399		87.6	mg/kg dry	2x	10H0547	08/17/10 15:00	08/19/10 10:48	Q1	
Benzene		"	ND		0.438	"	"	"	"	"	RL3	
Toluene		"	ND		2.19	"	"	"	"	"	RL3	
Ethylbenzene		"	ND		2.19	"	"	"	"	"	RL3	
Xylenes (total)		"	2.34		2.19	"	"	"	"	"		
Surrogate(s):	a,a,a-TFT (FID) a,a,a-TFT (PID)				122% 112%		50 - 150 % 50 - 150 %	"			"	
PTH0487-09	(5150-9)			O	ther dry		Samp	led: 08/14/	10 10:11			N1
Gasoline Range Or	ganics	AK101/8021B	63.2		39.2	mg/kg dry	1x	10H0547	08/17/10 15:00	08/19/10 00:26	Q1	
Benzene		"	ND		0.196	"	"	"	"	"		
Toluene		"	ND		0.980	"	"	"	"	"		
Ethylbenzene		"	ND		0.980	"	"	"	"	"		
Xylenes (total)		"	ND		0.980	"	"	"	"	"		
Surrogate(s):	a,a,a-TFT (FID) a,a,a-TFT (PID)				113% 109%		50 - 150 % 50 - 150 %	"			" "	
PTH0487-10	(5150-10)			O	ther dry		Samp	led: 08/14/	10 11:45			N1
Gasoline Range Or	ganics	AK101/8021B	220		49.7	mg/kg dry	1x	10H0547	08/17/10 15:00	08/19/10 00:55	Q1	
Benzene		"	ND		0.249	"	"	"	"	"		
Toluene		"	ND		1.24	"	"	"	"	"		
Ethylbenzene		"	ND		1.24	"	"	"	"	"		
Xylenes (total)		"	ND		1.24	"	"	"	"	"		
Surrogate(s):	a,a,a-TFT (FID) a,a,a-TFT (PID)				112% 110%		50 - 150 % 50 - 150 %	"			"	

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Amended Report

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Amended Report

Golder Associates - Canada

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

Stock Pile WP/YR Project Name:

96-1412-853B Project Number: Project Manager: Erin Liebrecht Report Created: 10/04/10 15:02

Diesel Range Organics (C10-C25) per AK102

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	1	Notes
PTH0487-01	(5150-1)			Other dry Sampled: 08/14/10 09:05								
Diesel Range Orga	anics	AK102	15200		336	mg/kg dry	20x	10H0676	08/20/10 09:35	08/20/10 17:16		Q9
Surrogate(s):	1-Chlorooctadecane	?		10	0300%		50 - 150 %	"			"	Z 3
PTH0487-03	(5150-3)		Other dry Sampled: 08/14/10 09:05									
Diesel Range Orga	anics	AK102	45800		520	mg/kg dry	20x	10H0676	08/20/10 09:35	08/20/10 17:33		Q9
Surrogate(s):	1-Chlorooctadecane	?			NR		50 - 150 %	"			"	Z 3
PTH0487-09	(5150-9)			Othe	er dry		Samp	led: 08/14/	10 10:11			
Diesel Range Orga	anics	AK102	10800		468	mg/kg dry	20x	10H0676	08/20/10 09:35	08/20/10 17:50		Q9
Surrogate(s):	1-Chlorooctadecane	?		5	5300%		50 - 150 %	"			"	Z 3
PTH0487-10	(5150-10)			Othe	er dry							
Diesel Range Orga	anics	AK102	12000		566	mg/kg dry	20x	10H0676	08/20/10 09:35	08/20/10 18:08		Q9
Surrogate(s):	1-Chlorooctadecane	?			2600%		50 - 150 %	"			"	Z3

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Amended Report

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Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

96-1412-853B

Erin Liebrecht

500-4260 Still Creek Drive Project Number:
Burnaby, BC/CAN V5C6C6 Project Manager:

Report Created:

10/04/10 15:02

Diesel Range Organics (C10-C25) per AK102 on SPLP Extracted Sample

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0487-01	(5150-1)	Otl	ier dry		Sampl	led: 08/14/	10 09:05				
Diesel Range Org	anics	1312/AK102	6.86		0.250	mg/l	1x	10I0878	09/29/10 11:00	09/30/10 17:36	
Surrogate(s):	1-Chlorooctade	cane			91.5%		50 - 150 %	"			"
PTH0487-10	(5150-10)			Otl	ner dry		Sampl	led: 08/14/	10 11:45		
Diesel Range Org	anics	1312/AK102	4.03		0.250	mg/l	1x	10I0878	09/29/10 11:00	09/30/10 17:54	
Surrogate(s):	1-Chlorooctade	cane			77.2%		50 - 150 %	"			"

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Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Project Manager: Erin Liebrecht Report Created: 10/04/10 15:02

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0487-01 (5150-1)			Ot	her dry		Samp	led: 08/14/	10 09:05		
Acenaphthene	EPA 8270m	274000		6760	ug/kg dry	100x	10H0676	08/20/10 09:35	08/23/10 15:41	
Acenaphthylene	"	6780		6760	"	"	"	"	"	
Anthracene	"	316000		6760	"	"	"	"	"	
Benzo (a) anthracene	"	140000		6760	"	"	"	"	"	
Benzo (a) pyrene	"	41000		6760	"	"	"	"	"	
Benzo (b) fluoranthene	"	55100		6760	"	"	"	"	"	
Benzo (ghi) perylene	"	10300		6760	"	"	"	"	"	
Benzo (k) fluoranthene	"	48600		6760	"	"	"	"	"	
Chrysene	"	147000		6760	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND		6760	"	"	"	"	"	
Fluoranthene	"	871000		67600	"	1000x	"	"	08/24/10 10:37	
Fluorene	"	385000		67600	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	10700		6760	"	100x	"	"	08/23/10 15:41	
Naphthalene	"	8800		6760	"	"	"	"	"	
Phenanthrene	"	1190000		6760	"	"	"	"	"	
Pyrene	"	549000		67600	"	1000x	"	"	08/24/10 10:37	
Surrogate(s): Fluorene-d10				NR		24 - 125 %	100x		08/23/10	15:41 Z 3
Pyrene-d10				NR		41 - 141 %	"		"	Z 3
Benzo (a) pyre	ene-d12			NR		38 - 143 %	"		"	Z 3

PTH0487-03 (5150-3)			O	ther dry		Sam	pled: 08/14/	10 09:05	
Acenaphthene	EPA 8270m	2370000		209000	ug/kg dry	2000x	10H0676	08/20/10 09:35	08/25/10 21:14
Acenaphthylene	"	41900		5220	"	50x	"	"	08/23/10 14:02
Anthracene	"	1040000		209000	"	2000x	"	"	08/25/10 21:14
Benzo (a) anthracene	"	525000		209000	"	"	"	"	"
Benzo (a) pyrene	"	121000		5220	"	50x	"	"	08/23/10 14:02
Benzo (b) fluoranthene	"	184000		5220	"	"	"	"	"
Benzo (ghi) perylene	"	26400		5220	"	"	"	"	"
Benzo (k) fluoranthene	"	139000		5220	"	"	"	"	"
Chrysene	"	538000		209000	"	2000x	"	"	08/25/10 21:14
Dibenzo (a,h) anthracene	"	13200		5220	"	50x	"	"	08/23/10 14:02
Fluoranthene	"	3480000		209000	"	2000x	"	"	08/25/10 21:14
Fluorene	"	2290000		209000	"	"	"	"	n
Indeno (1,2,3-cd) pyrene	"	32600		5220	"	50x	"	"	08/23/10 14:02
Naphthalene	"	45200		5220	"	"	"	"	"
Phenanthrene	"	6570000		209000	"	2000x	"	"	08/25/10 21:14

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THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Project Manager: Erin Liebrecht Report Created: 10/04/10 15:02

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0487-03 (5150-3)			Ot	her dry		Samp	led: 08/14/	10 09:05		
Pyrene	EPA 8270m	2020000		209000	ug/kg dry	2000x	10H0676	08/20/10 09:35	08/25/10 21:14	
Surrogate(s): Fluorene-d10				NR		24 - 125 %	50x		08/23/10 14:02	Z3
Pyrene-d10				NR		41 - 141 %	"		"	Z 3
Benzo (a) pyrene	e-d12			NR		38 - 143 %	"		"	Z 3
PTH0487-09 (5150-9)			Ot	her dry		Samp	led: 08/14/	10 10:11		
Acenaphthene	EPA 8270m	184000		9400	ug/kg dry	100x	10H0676	08/20/10 09:35	08/23/10 16:12	
Acenaphthylene	"	ND		9400	"		"	"	"	
Anthracene	"	174000		9400	"	"	"	"	"	
Benzo (a) anthracene	"	86700		9400	"	"	"	"	"	
Benzo (a) pyrene	"	26700		9400	"	"	"	"	"	
Benzo (b) fluoranthene	"	35600		9400	"	"	"	"	"	
Benzo (ghi) perylene	"	ND		9400	"	"	"	"	"	
Benzo (k) fluoranthene	"	30800		9400	"	"	"	"	"	
Chrysene	"	94800		9400	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND		9400	"	"	"	"	"	
Fluoranthene	"	463000		94000	"	1000x	"	"	08/24/10 11:08	
Fluorene	"	212000		9400	"	100x	"	"	08/23/10 16:12	
Indeno (1,2,3-cd) pyrene	"	ND		9400	"		"	"	"	
Naphthalene	"	ND		9400	"	"	"	"	"	
Phenanthrene	"	652000		94000	"	1000x	"	"	08/24/10 11:08	
Pyrene	"	304000		9400	"	100x	"	"	08/23/10 16:12	
Surrogate(s): Fluorene-d10				NR		24 - 125 %	"		"	Z 3
Pyrene-d10				NR		41 - 141 %	"		"	Z 3
Benzo (a) pyrene	e-d12			NR		38 - 143 %	"		"	Z 3
PTH0487-10 (5150-10)			Ot	her dry		Samp	led: 08/14/	10 11:45		
Acenaphthene	EPA 8270m	234000		11400	ug/kg dry	100x	10H0676	08/20/10 09:35	08/23/10 16:44	
Acenaphthylene	"	ND		11400	"	"	"	"	"	
Anthracene	"	161000		11400	"	"	"	"	"	
Benzo (a) anthracene	"	104000		11400	"	"	"	"	"	
Benzo (a) pyrene	"	30400		11400	"	"	"	"	"	
Benzo (b) fluoranthene	"	42700		11400	"	"	"	"	"	
Benzo (ghi) perylene	"	ND		11400	"	"	"	"	"	
Benzo (k) fluoranthene	"	32800		11400	"	"	"	"	"	
Chrysene	"	107000		11400	,,	,,	,,		"	

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Amended Report

Golder Associates - Canada

Stock Pile WP/YR Project Name:

Report Created:

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: Project Manager: Erin Liebrecht

96-1412-853B

10/04/10 15:02

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	1	Notes
PTH0487-10 (5150-10)			Ot	her dry		Samp	oled: 08/14/1	10 11:45			
Dibenzo (a,h) anthracene	EPA 8270m	ND		11400	ug/kg dry	100x	10H0676	08/20/10 09:35	08/23/10 16:44		
Fluoranthene	"	545000		11400	"	"	"	"	"		
Fluorene	"	247000		11400	"	"	"	"	"		
Indeno (1,2,3-cd) pyrene	"	ND		11400	"	"	"	"	"		
Naphthalene	"	ND		11400	"	"	"	"	"		
Phenanthrene	"	777000		114000	"	1000x	"	"	08/24/10 11:39		
Pyrene	"	351000		11400	"	100x	"	"	08/23/10 16:44		
Surrogate(s): Fluorene-d10				NR		24 - 125 %	"			"	Z 3
Pyrene-d10				NR		41 - 141 %	"			"	Z 3
Benzo (a) pyrene	-d12			NR		38 - 143 %	"			"	Z 3

TestAmerica Portland

Amended Report

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Report Created:

10/04/10 15:02

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B
Project Manager: Erin Liebrecht

Polynuclear Aromatic Compounds per EPA 8270M-SIM. TCLP/SPLP Extracted

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
PTH0487-01 (5150-1)			Ot	ther dry		Samp	oled: 08/14/	10 09:05			Н
Acenaphthene	1311-2/8270m	181		4.00	ug/l	10x	1010755	09/24/10 12:15	09/27/10 19:11		
Acenaphthylene	"	4.82		2.00	"	5x	"	"	09/28/10 14:37		
Anthracene	"	22.3		2.00	"	"	"	"	"		
Benzo (a) anthracene	"	7.36		2.00	"	"	"	"	"		
Benzo (a) pyrene	"	ND		2.00	"	"	"	"	"		
Benzo (b) fluoranthene	"	ND		2.00	"	"	"	"	"		
Benzo (ghi) perylene	"	ND		2.00	"	"	"	"	"		
Benzo (k) fluoranthene	"	ND		2.00	"	"	"	"	"		
Chrysene	"	6.46		2.00		"	"	"	"		
Dibenzo (a,h) anthracene	"	ND		2.00		"	"	"	"		
Fluoranthene	"	82.0		2.00		"	"	"	"		
Fluorene	"	142		2.00		"	"	"	"		
Indeno (1,2,3-cd) pyrene	"	ND		2.00		"	"	"	"		
Naphthalene	"	2.57		2.00		"	"	"	"		
Phenanthrene	"	195		4.00		10x	"	"	09/27/10 19:11		
Pyrene	"	47.8		2.00	"	5x	"	"	09/28/10 14:37		
Surrogate(s): Fluorene-d1	<u>, </u>			82.6%		25 - 125 %	"			n .	
Pyrene-d10				89.6%		23 - 150 %	"			"	
Benzo (a) py	rene-d12			80.1%		10 - 125 %	"			"	

PTH0487-10 (5150-10)			Ot	her dry		Sam	pled: 08/14/	10 11:45		H4
Acenaphthene	1311-2/8270m	140		2.00	ug/l	5x	1010755	09/24/10 12:15	09/28/10 15:08	
Acenaphthylene	"	3.10		2.00	"	"	"	"	"	
Anthracene	"	11.2		2.00	"	"	"	"	"	
Benzo (a) anthracene	"	2.94		2.00	"	"	"	"	"	
Benzo (a) pyrene	"	ND		2.00	"	"	"	"	"	
Benzo (b) fluoranthene	"	ND		2.00	"	"	"	"	"	
Benzo (ghi) perylene	"	ND		2.00	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND		2.00	"	"	"	"	"	
Chrysene	"	2.80		2.00	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND		2.00	"	"	"	"	"	
Fluoranthene	"	34.4		2.00	"	"	"	"	"	
Fluorene	"	73.2		2.00	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND		2.00	"	"	"	"	"	
Naphthalene	"	ND		2.00	"	"	"	"	"	
Phenanthrene	"	77.3		2.00	"	"	"	"	"	

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Amended Report

Golder Associates - Canada Stock Pile WP/YR Project Name:

500-4260 Still Creek Drive 96-1412-853B Report Created: Project Number: Burnaby, BC/CAN V5C6C6 Project Manager: Erin Liebrecht 10/04/10 15:02

Polynuclear Aromatic Compounds per EPA 8270M-SIM. TCLP/SPLP Extracted

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
PTH0487-10	(5150-10)			Otl	her dry		Samp	led: 08/14/	10 11:45			H4
Pyrene		1311-2/8270m	20.3		2.00	ug/l	5x	10I0755	09/24/10 12:15	09/28/10 15:08		
Surrogate(s):	Fluorene-d10				77.9%		25 - 125 %	"			"	
	Pyrene-d10				84.6%		23 - 150 %	"			"	
	Benzo (a) pyrene	e-d12			76.9%		10 - 125 %	"			"	

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Stock Pile WP/YR

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Amended Report

Golder Associates - Canada

Canada Project Name:

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number:96-1412-853BReport Created:Project Manager:Erin Liebrecht10/04/10 15:02

Percent Dry Weight (Solids) per ASTM D2216-80

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0487-01	(5150-1)			Otl	her dry		Samj	pled: 08/14/	10 09:05		
% Solids		ASTM D2216-80	74.1		0.0100	% by Weight	1x	10H0554	08/17/10 19:00	08/19/10 09:50	
PTH0487-03	(5150-3)			Otl	her dry		Samj	pled: 08/14/	10 09:05		
% Solids		ASTM D2216-80	47.3		0.0100	% by Weight	1x	10H0554	08/17/10 19:00	08/19/10 09:50	
PTH0487-09	(5150-9)			Otl	her dry		Samj	pled: 08/14/	10 10:11		
% Solids		ASTM D2216-80	52.2		0.0100	% by Weight	1x	10H0554	08/17/10 19:00	08/19/10 09:50	
PTH0487-10	(5150-10)			Otl	her dry		Sam	pled: 08/14/	10 11:45		
% Solids		ASTM D2216-80	44.0		0.0100	% by Weight	1x	10H0554	08/17/10 19:00	08/19/10 09:50	

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PORTLAND, OR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name: St

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

Project Number: 96-1412-853B
Project Manager: Erin Liebrecht

Report Created: 10/04/10 15:02

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B - Laboratory Quality Control Results TestAmerica Portland

QC Batch: 10H0547	Sail Pro	naration M	lethod: EPA	5035 M	odified									
QC Batch: 10110547									0/					
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	RPD	(Limits)	Analyzed	Notes
Blank (10H0547-BLK1)								Extra	acted:	08/17/10 13	:00			
Gasoline Range Organics	AK101/8021 B	ND		3.98	mg/kg wet	1x							08/18/10 16:58	
Benzene	"	ND		0.0199	"	"							"	
Toluene	"	ND		0.0996	"	"							"	
Ethylbenzene	"	ND		0.0996	"	"							"	
Xylenes (total)	"	ND		0.0996	"	"							"	
Surrogate(s): a,a,a-TFT (FID) a,a,a-TFT (PID)		Recovery:	112% 108%	L	imits: 50-150% 50-150%	"							08/18/10 16:58 "	
LCS (10H0547-BS1)								Extra	acted:	08/17/10 13	:00			
Benzene	AK101/8021	1.05		0.0198	mg/kg wet	1x		0.992	106%	(70-130)			08/18/10 15:03	
Toluene	В "	1.02		0.0992	"	"		"	103%				"	
Ethylbenzene	"	1.08		0.0992	"	"		"	109%				"	
Xylenes (total)		3.16		0.0992	"	"		2.98	106%	"			"	
Surrogate(s): a,a,a-TFT (PID)		Recovery:	114%	L	imits: 50-150%	"							08/18/10 15:03	
LCS (10H0547-BS2)								Extra	acted:	08/17/10 13	:00			
Gasoline Range Organics	AK101/8021 B	25.6		3.98	mg/kg wet	1x		24.9	103%	(60-120)			08/18/10 16:01	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	111%	L	imits: 50-150%	"							08/18/10 16:01	
LCS Dup (10H0547-BSD1)								Extra	acted:	08/17/10 13	:00			
Benzene	AK101/8021 B	1.07		0.0196	mg/kg wet	1x		0.979	109%	(70-130)	1.73%	(20)	08/18/10 15:32	
Toluene	"	1.00		0.0979	"	"		"	102%	"	1.69%	· "	"	
Ethylbenzene	"	1.06		0.0979	"	"		"	109%	"	1.51%	5 "	"	
Xylenes (total)	"	3.10		0.0979	"	"		2.94	106%	"	1.87%	. "	"	
Surrogate(s): a,a,a-TFT (PID)		Recovery:	117%	L	imits: 50-150%	"							08/18/10 15:32	
LCS Dup (10H0547-BSD2)								Extra	acted:	08/17/10 13	:00			
Gasoline Range Organics	AK101/8021 B	26.4		3.97	mg/kg wet	1x		24.8	106%	(60-120)	3.26%	(20)	08/18/10 16:29	
Surrogate(s): a,a,a-TFT (FID)	ь	Recovery:	115%	L	imits: 50-150%	"							08/18/10 16:29	
Duplicate (10H0547-DUP1)				QC Sourc	e: PTH0490-02			Extra	acted:	08/17/10 15	:00			N
Gasoline Range Organics	AK101/8021	232		40.1	mg/kg dry	1x	235					(50)	08/18/10 19:11	

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Surrogate(s): a,a,a-TFT (FID)

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Limits: 50-150%

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Estella Rieben, Project Manage

Recovery: 114%

08/18/10 19:11



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Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

96-1412-853B Project Number: Project Manager: Erin Liebrecht Report Created: 10/04/10 15:02

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B - Laboratory Quality Control Results

				ΓestAmer	ica Portland									
QC Batch: 10H0547	Soil Pre	paration M	lethod: EPA	A 5035 M	odified		·						·	
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (10H0547-DUP2)				QC Sourc	e: PTH0490-0	05		Extr	acted:	08/17/10 15	5:00			N1
Gasoline Range Organics	AK101/8021 B	ND		32.4	mg/kg dry	1x	ND				3.72%	(50)	08/18/10 23:01	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	114%	L	imits: 50-150%	6 "							08/18/10 23:01	
Matrix Spike (10H0547-MS1)				QC Source	e: PTH0490-0	08		Extr	acted:	08/17/10 15	5:00			N1
Benzene	AK101/8021 B	8.95		0.188	mg/kg dry	1x	ND	8.65	103%	(50-150)			08/18/10 18:14	
Toluene	"	8.63		0.941	"	"	0.109	"	98.4%				"	
Ethylbenzene	"	9.06		0.941	"	"	ND	"	105%	"			"	
Xylenes (total)	"	26.9		0.941	"	"	ND	26.0	104%	"			"	
Surrogate(s): a,a,a-TFT (PID)		Recovery:	118%	L	imits: 50-150%	6 "							08/18/10 18:14	
Matrix Spike Dup (10H0547-M3	SD1)			QC Source	e: PTH0490-0	08		Extr	acted:	08/17/10 15	5:00			N1
Benzene	AK101/8021 B	8.98		0.188	mg/kg dry	1x	ND	8.65	104%	(50-150)	0.378%	(20)	08/18/10 18:43	
Toluene	"	8.68		0.941	"	"	0.109	"	99.0%	"	0.603%	, "	"	
Ethylbenzene	"	9.14		0.941	"	"	ND	"	106%	"	0.884%	, "	"	
Xylenes (total)	"	27.2		0.941	"	"	ND	26.0	105%	"	0.989%	, "	"	
Surrogate(s): a,a,a-TFT (PID)		Recovery:	114%	L	imits: 50-150%	6 "							08/18/10 18:43	

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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:02

	Diesel R	ange Organic	s (C10-C25	6) per AK	102 - La	borat	ory Qual	ity Cor	trol	Results				
			Т	estAmeric	a Portland									
QC Batch: 10H0676	Soil P	reparation Met	thod: EPA	3550 Fue	ls									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	RPD ((Limits)	Analyzed	Notes
Blank (10H0676-BLK1)								Extra	icted:	08/20/10 09	9:35			
Diesel Range Organics	AK102	ND		12.5	mg/kg wet	1x							08/20/10 16:00	
Surrogate(s): 1-Chlorooctadecane		Recovery: 9	0.1%	Lin	nits: 50-150%	"							08/20/10 16:00	
LCS (10H0676-BS1)								Extra	icted:	08/20/10 09	0:35			
Diesel Range Organics	AK102	132		12.5	mg/kg wet	1x		125	106%	(75-125)			08/20/10 15:43	
Surrogate(s): 1-Chlorooctadecane		Recovery: 8	8.7%	Lin	nits: 60-120%	"							08/20/10 15:43	
Duplicate (10H0676-DUP1)				QC Source:	PTH0487-01			Extra	icted:	08/20/10 09	0:35			
Diesel Range Organics	AK102	14500		334	mg/kg dry	20x	15200				4.81%	(40)	08/20/10 16:14	Q9
Surrogate(s): 1-Chlorooctadecane		Recovery: 120	000%	Lin	nits: 50-150%	"							08/20/10 16:14	Z3
Duplicate (10H0676-DUP2)				QC Source:	PTH0489-02			Extra	icted:	08/20/10 09	0:35			
Diesel Range Organics	AK102	6010		225	mg/kg dry	10x	6090				1.31%	(40)	08/20/10 16:59	Q9
Surrogate(s): 1-Chlorooctadecane		Recovery: 17	780%	Lin	nits: 50-150%	"							08/20/10 16:59	ZX

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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number:96-1412-853BReport Created:Project Manager:Erin Liebrecht10/04/10 15:02

Diesel Ran	ge Organics (C10-C25)	•		Extracted ca Portland	Sam	ple - La	borato	ry Qı	ıality Co	ontrol	Result	ts	
QC Batch: 10I0878	Other d	ry Prepara	tion Method:	EPA 13	312/3510									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits	s) Analyzed	Notes
Blank (10I0878-BLK1)								Exti	racted:	09/29/10 11	:00			
Diesel Range Organics	1312/AK102	ND		0.250	mg/l	1x							09/30/10 16:26	
Surrogate(s): 1-Chlorooctadecane		Recovery:	85.5%	Li	mits: 50-150%	"							09/30/10 16:26	
Blank (10I0878-BLK2)								Exti	racted:	09/29/10 11	:00			
Diesel Range Organics	1312/AK102	ND		0.240	mg/l	1x							09/30/10 16:44	
Surrogate(s): 1-Chlorooctadecane		Recovery:	79.0%	Li	mits: 50-150%	"							09/30/10 16:44	
LCS (10I0878-BS1)								Exti	racted:	09/29/10 11	:00			
Diesel Range Organics	1312/AK102	2.10		0.250	mg/l	1x		2.50	83.9%	(75-125)			09/30/10 17:01	
Surrogate(s): 1-Chlorooctadecane		Recovery:	81.4%	Li	mits: 50-150%	"							09/30/10 17:01	
LCS Dup (10I0878-BSD1)								Exti	racted:	09/29/10 11	:00			
Diesel Range Organics	1312/AK102	2.01		0.250	mg/l	1x		2.50	80.6%	(75-125)	4.02%	6 (20)	09/30/10 17:19	
Surrogate(s): 1-Chlorooctadecane		Recovery:	82.8%	Li	mits: 50-150%	"							09/30/10 17:19	

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PORTLAND, OR

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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:02

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM - Laboratory Quality Control Results
Test A marica Portland

QC Batch: 10H0676 Soil Preparation Method: EPA 3550 Fuels $\begin{array}{cc} ^{0\!/\!\!\!\!/} & \text{(Limits)} & ^{0\!/\!\!\!\!\!/} \\ REC & RPD \end{array}$ Source Spike Analyte Method Result MDL* MRL Units Dil (Limits) Analyzed Blank (10H0676-BLK1) Extracted: 08/20/10 09:35 Acenaphthene EPA 8270m 197 50.2 08/23/10 15:04 В1 ug/kg wet 1xAcenaphthylene ND 50.2 ND 50.2 Anthracene ND 50.2 Benzo (a) anthracene 50.2 Benzo (a) pyrene ND Benzo (b) fluoranthene ND 50.2 Benzo (ghi) perylene ND 50.2 ND 50.2 Benzo (k) fluoranthene Chrysene ND 50.2 ND 50.2 Dibenzo (a,h) anthracene Fluoranthene ND 50.2 Fluorene 83.3 50.2 В1 Indeno (1,2,3-cd) pyrene ND 50.2 Naphthalene ND 50.2 Phenanthrene ND 50.2 В1 50.2 Pyrene ND Surrogate(s): Fluorene-d10Limits: 24-125% 08/23/10 15:04 Recovery: Pyrene-d10 92.0% 41-141% Benzo (a) pyrene-d12 82.6% 38-143%

Acenaphthene		EPA 8270m	269	-	 50.2	ug/kg wet	1x	 250	108%	(33-139)	 	08/23/10 14:33
Benzo (a) pyrene		"	256	-	 50.2	"	"	 "	103%	(45-149)	 	"
Pyrene		"	266	-	 50.2	"	"	 "	107%	(39-138)	 	"
Surrogate(s):	Fluorene-d10		Recovery:	91.0%	Lin	nits: 24-125%	"					08/23/10 14:33
	Pyrene-d10			102%		41-141%	<i>"</i>					"
	Renzo (a) pyrene-d12			99.0%		38-143%	á "					"

Duplicate (10H0676-DUP1)			QC Source	e: PTH0487	-01		Extr	acted: (08/20/10 0	9:35	
Acenaphthene	EPA 8270m	278000	 6710	ug/kg dry	100x	274000				1.47% (40)	08/24/10 16:52
Acenaphthylene	"	7060	 6710	"	"	6780				4.02% "	"
Anthracene	"	274000	 6710	"	"	316000				14.2% "	"
Benzo (a) anthracene	"	138000	 6710	"	"	140000				0.862% "	"
Benzo (a) pyrene	"	38100	 6710	"	"	41000				7.22% "	"
Benzo (b) fluoranthene	"	51100	 6710	"	"	55100				7.50% "	"
Benzo (ghi) perylene	"	9720	 6710	"	"	10300				5.50% "	"
Benzo (k) fluoranthene	"	47300	 6710	"	"	48600				2.83% "	"
Chrysene	"	147000	 6710	"	"	147000				0.582% "	"
Dibenzo (a,h) anthracene	"	ND	 6710	"	"	ND				14.3% "	"
Fluoranthene	"	892000	 67100	"	1000x	871000				2.36% "	08/24/10 17:23

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LCS (10H0676-BS2)

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Extracted: 08/20/10 09:35



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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:02

Polynuclear Ard	matic Hydro	carbon Sere		estAmeric			705111	Labor	atoi	y Quant	y Con	ii oi ix	csuits	
QC Batch: 10H0676	Soil Pre	paration Meth	od: EPA	3550 Fu	els									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits) Analyzed	Notes
Duplicate (10H0676-DUP1)				QC Source	: PTH0487	-01		Extra	cted:	08/20/10 09	:35			•
Fluorene	"	408000		67100	"	"	385000				5.81%	"	"	
Indeno (1,2,3-cd) pyrene	"	10600		6710	**	100x	10700				0.783%	"	08/24/10 16:52	
Naphthalene	"	11300		6710	"	"	8800				25.3%	"	"	
Phenanthrene	"	1480000		67100	**	1000x	1190000				21.3%	"	08/24/10 17:23	
Pyrene	"	571000		67100	"	"	549000				4.08%	"	"	
Surrogate(s): Fluorene-d10		Recovery:	NR	Li	mits: 24-125	% 100x							08/24/10 16:52	Z
Pyrene-d10			NR		41-14	1% "							"	2
Benzo (a) pyrene-d12			NR		38-14.	3% "							"	2
Duplicate (10H0676-DUP2)				QC Source	: PTH0489	-02		Extra	cted:	08/20/10 09	:35			
Acenaphthene	EPA 8270m	92400		9040	ug/kg dry	100x	120000				25.9%	(40)	08/24/10 17:55	
Acenaphthylene	"	ND		9040	"		ND				NR	"	"	
Anthracene	"	58400		9040	"	"	61300				4.77%	"	"	
Benzo (a) anthracene	"	29700		9040	"	"	45200				41.3%	"	"	R
Benzo (a) pyrene	"	ND		9040	**	"	13000				37.1%	"	"	
Benzo (b) fluoranthene	"	11300		9040	"	"	17700				44.3%	"	"	R
Benzo (ghi) perylene	"	ND		9040	**	"	ND				25.2%	"	"	
Benzo (k) fluoranthene	"	10300		9040	"	"	14000				30.8%	"	"	
Chrysene	"	33400		9040	"	"	45500				30.6%	"	"	
Dibenzo (a,h) anthracene	"	ND		9040	"	"	ND				NR	"	"	
Fluoranthene	"	163000		9040	"	"	278000				52.2%	"	"	R2
Fluorene	"	70700		9040	"	"	106000				40.0%	"	"	
Indeno (1,2,3-cd) pyrene	"	ND		9040	"	"	ND				36.1%	"	"	
Naphthalene	"	ND		9040	"	"	ND				NR	"	"	
Phenanthrene	"	209000		9040	"	"	360000				53.1%	"	"	R
		110000		9040	,,		163000				39.0%		,,	

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Estella K Rieben

Benzo (a) pyrene-d12

Amended Report

38-143% "

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Estella Rieben, Project Manage

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Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

96-1412-853B Project Number: Project Manager: Erin Liebrecht Report Created: 10/04/10 15:02

Polynuclear Aromatic Compounds per EPA 8270M-SIM. TCLP/SPLP Extracted - Laboratory Quality Control Results TestAmerica Portland

QC Batc	h: 10I0755	Water F	reparation	Method: 35	20B Liq-	Liq									
Analyte		Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (10I075	55-BLK1)								Extr	acted:	09/24/10 12	:15			
Acenaphthene		1311-2/8270	ND		0.400	ug/l	1x							09/27/10 17:39	
Acenaphthylene		m "	ND		0.400	"								"	
Anthracene		"	ND		0.400	"									
Benzo (a) anthracen	e	"	ND		0.400	"	"							"	
Benzo (a) pyrene		"	ND		0.400	"	"							"	
Benzo (b) fluoranthe	ene	,,	ND		0.400	"								,,	
Benzo (ghi) perylen		,,	ND		0.400	"									
Benzo (k) fluoranthe		,,	ND		0.400	"								,,	
Chrysene		,,	ND		0.400	"									
Dibenzo (a,h) anthra	acene	"	ND		0.400	"								,,	
Fluoranthene		,,	ND		0.400	"									
Fluorene		,,	ND		0.400	"									
Indeno (1,2,3-cd) py	vrene	,,	ND		0.400	"									
Naphthalene		"	ND		0.400	"	,,							,,	
Phenanthrene		"	ND		0.400	"	,,							,,	
Pyrene		"	ND		0.400	"								"	
Surrogate(s):	Fluorene-d10		Recovery:	81.3%	I is	mits: 25-125%	,,							09/27/10 17:39	
Surroguie(s).	Pyrene-d10		Recovery.	85.3%	Li	23-150%	,,							"	
	Benzo (a) pyrene-d12			83.0%		10-125%	"							"	
LCS (1010755	S-RS1)								Extr	acted:	09/24/10 12	:15			
Acenaphthene	5-D51)	1311-2/8270	8.33		0.400	ug/l	1x		10.0	83.3%				09/27/10 18:10	
		m									(== ===)				
Benzo (a) pyrene		"	8.16		0.400	"	"		"	81.6%	(38-137)			"	
Pyrene		"	8.11		0.400	"	"		"	81.1%	(33-133)			"	
Surrogate(s):	Fluorene-d10		Recovery:	79.8%	Li	mits: 25-125%	"							09/27/10 18:10	
	Pyrene-d10			80.5%		23-150%	"							"	
	Benzo (a) pyrene-d12			81.7%		10-125%	"							"	
Matrix Spike	(10I0755-MS1)				QC Source	: PTH0487-01			Extr	acted:	09/24/10 12	:15			
Acenaphthene		1311-2/8270	210		8.00	ug/l	20x	181	10.0	285%	(26-135)		-	09/27/10 18:40	MHA
Benzo (a) pyrene		m "	ND		8.00	,,		ND	"	NR	(38-137)			,,	M
Pyrene		"	56.2		8.00	"		47.8	,,	83.3%				"	141
	Fluorene-d10			87.2%		mits: 25-125%	,,	0		22.370	(== 155)			09/27/10 18:40	
Surrogate(s):	Pyrene-d10		Recovery:	80.7%	Li	mus: 23-125% 23-150%								09/2//10 18:40	
	- 7. 00 0.10					25 150/0									

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Benzo (a) pyrene-d12

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10-125% "

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72.9%



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Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B
Project Manager: Erin Liebrecht

Report Created: 10/04/10 15:02

Percent Dry Weight (Solids) per ASTM D2216-80 - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 10H0554	Soil Pre	paration Met	hod: Dry	Weight									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	~p	% REC	(Limits)	% (Li	imits) Analyzed	Notes
Duplicate (10H0554-DUP1)				QC Source:	PTH0464-0	1		Extrac	ted:	08/17/10 19	9:00		
% Solids	ASTM D2216-80	91.2		0.0100 %	by Weight	1x	93.2				2.20% (2	00) 08/19/10 09:50	
Duplicate (10H0554-DUP2)				QC Source:	PTH0464-02	2		Extrac	ted:	08/17/10 19	9:00		
% Solids	ASTM D2216-80	92.4		0.0100 %	by Weight	1x	92.4		-		0.0163% (2	00) 08/19/10 09:50	

TestAmerica Portland

Estella K Rieben

Amended Report

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9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Project Number: 96-1412-853B Report Created: Burnaby, BC/CAN V5C6C6 Project Manager: Erin Liebrecht 10/04/10 15:02

Notes and Definitions

Report Specific Notes:

B1 - Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.

H4 - Sample was extracted past holding time, but analyzed within analysis holding time.

The sample required a dilution due to matrix interference. Because of this dilution, the matrix spike concentrations in the sample were reduced to a level where the recovery calculation does not provide useful information. See Blank Spike (LCS).

MHA - Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).

N1 - See case narrative.

Q1 - Does not match typical pattern

Q9 - Hydrocarbon pattern most closely resembles creosote or similar product.

QP - Hydrocarbon result partly due to individual peak(s) in quantitation range.

R2 - The RPD exceeded the acceptance limit.

RL3 - Reporting limit raised due to high concentrations of non-target analytes.

The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

ZX - Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.

Laboratory Reporting Conventions:

DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.

ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR/NA _ Not Reported / Not Available

dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.

wet Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported

on a Wet Weight Basis.

RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).

MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.

MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B.
 *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.

 Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.

Reporting - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

TestAmerica Portland

Estella K Rieben

Amended Report

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9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada 500-4260 Still Creek Drive

Burnaby, BC/CAN V5C6C6

Project Name:

Stock Pile WP/YR

Project Number: Project Manager: 96-1412-853B Erin Liebrecht Report Created: 10/04/10 15:02

Electronic Signature

- Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*.

Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory.

Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Portland

Estella K Rieben

Amended Report

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CERTIFICATION SUMMARY

TestAmerica Portland

Method	Matrix	Alaska
1311-2/8270m	Other dry	
1312/AK102	Other dry	
AK101/8021B	Other dry	X
AK102	Other dry	X
ASTM D2216-80	Other dry	
EPA 1312	Other dry	
EPA 8270m	Other dry	

TestAmerica Portland

Estella K Rieben

Amended Report

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

A.b. Ship to TEST AMERICA 9405 Nimbus Beckerton Client Contact Fin Liebrecht -7673 Fax 867 - 633 - 6077 170 Titanium Way Phone 867-334

5150

500 - 4260 Still Creek Drive Burnaby, B.C. Tel: 604-296-4200 Fax: 604-298-5253 www.golder.com Canada V5C 6C6 Golder Associates

15, 2010 Shipping Date_

Auvi 1

Attn. Jarrell

Sampled by Eliebrecht

11A 061

Miteharse

anader

Address 2018

Client Name Coler Associates

Sample Notes (preserved, saltwater, freshwater, may contain sewage...) Time: Date: Date: 0-0.8m Courier Name: 3) Received by: 3) Released by: Company: (MOH) \times X Test(s) Requested 8 BIEX Lex 7 3 95 Š 3 Date: Time: Date: DRO Comments/Instructions 5 by Code Sample Container Type 2×905 Number of Sample Containers x Volume of Sample Containers (1 x 20L) G=grab C=composite Ď Sample Collection Method 2) Released by: 2) Received by: Company: Material Safety Data Sheet Attached? (✔) Type of Each Sample Zees CATO 15,2010 ż /://am Date: ダ/に/10 Sample Identification Date: Acc 8533 2X/27 Time: 5150 - 10 5150-9 5-0515 5150 -8 5100-4 5150-3 5150-6 5150-7 5/50-2 5150-Company Golder Associates 1412 1601 1) Released by Frishe chy Stock Pik (24-h clock) 9.05 11:45 Courier Name: NAMS 1) Received by: 4 Light 10:11 ع Results Needed By (DD/MMM/YYYY) 08/2010 PO/Reference No. Collection Date Project Title

1 For composite effluent or water samples, the sample collection date/time is the **end** of the compositing period.

Receiving Water (RW): Effluent (E); Elutriate (ELU); Sediment (SED); Chemical (CHEM); Stormwater (SW); Other (Please Specify)

Collapsible Carboy (CC); glass jar (GJ); Jerry Can (JC); Plastic HDPE (P); Other (Please Specify) Please note any conditions the lab should be aware of for safety and storage concerns

Please see instructions for completion on back of form

Revision Date: March 20, 2009

White—returned to consignor by consignee

Yellow-kept by consignee (e.g. receiver)

White, Yellow—accompany the shipment

Distribution of copies:

Company:

Time:

Company:

1500

Company:

Time:

Pink—kept by consignor (e.g. shipper)

TestAmerica Portland Sample Receiving Checklist

	Order #: 17 HO487 Date/Time Received	1: 8/16/10 1500 White Pass
Time		AK OTHER
Coo	cking Checks: ler #(s): _ / pratures: 3 - 8 Digi #1 Digi #2 IR Gun Digi #2 IR Gun Digi #3 Digi #4 (Plastic (Class)	Temperature out of Range: Not enough or No IceIce MeltedW/in 4 Hrs of collectionOther:
N/A	Yes No	Initials: PS
	I. If ESI client, were temp blanks received? If no,	document on NOD.
	2. Cooler Seals intact? (N/A if hand delivered) if	no, document on NOD
	3. Chain of Custody present? If no, document on	NOD.
	4. Bottles received intact? If no, document on NO	DD.
	5. Sample is not multiphasic? If no, document on	NOD.
	6. Proper Container and preservatives used? If no	o, document on NOD.
	7. pH of all samples checked and meet requireme	
2	8. Cyanide samples checked for sulfides and mee	t requirements? If no, notify PM.
	9. HF Dilution required?	
	10. Sufficient volume provided for all analysis? PM before proceeding. 11. Did chain of custody agree with samples rece	
	2 12. Is the "Sampled by" section of the COC comp	
	13. Were VOA/Oil Syringe samples without head	
	☐ 14. Were VOA vials preserved? ☐HCl ☐Sodiu	m Thiosulfate Ascorbic Acid
.*	15. Did samples require preservation with sodium	thiosulfate?
	☐ 16. If yes to #15, was the residual chlorine test no	egative? If no, document on NOD.
	☐ ☐ 17. Are dissolved/field filtered metals bottles sed	iment-free? If no, document on NOD.
	☐ 18. Is sufficient volume provided for client requence, document on NOD and contact PM before pro☐ ☐ 19. Are analyses with short holding times received.	oceeding.
	20. Was Standard Turn Around (TAT) requested	
	21. Receipt date(s) < 48 hours past the collection	
	· · · · · · · · · · · · · · · · · · ·	

TestAmerica Portland Sample Receiving Checklist

Work Order #: **PTH0487**

				00
Logi	in Ch	ecks	•	Initials: YS
N/A	Yes	No		
	\square		22. Sufficient volume provided for all analysis? If no, docum	nent on NOD & contact PM.
			23. Sufficient volume provided for client requested MS/MSI	or matrix duplicates? If
			no, document on NOD and contact PM.	
			24. Did the chain of custody include "received by" and "relin	quished by" signatures,
			dates and times?	
Z			25. Were special log in instructions read and followed?	
			26. Were tests logged checked against the COC?	,
\square			27. Were rush notices printed and delivered?	
Ø			28. Were short hold notices printed and delivered?	
			29. Were subcontract COCs printed?	
			30. Was HF dilution logged?	•
Lab	eling	and	Storage Checks:	Initials: \(\beta \)
N/A	Yes	No		
			31. Were the subcontracted samples/containers put in Sx frid	loe?
		П	32. Were sample bottles and COC double checked for dissol	
			33. Did the sample ID, Date, and Time from label match wh	
			34. Were Foreign sample stickers affixed to each container a	
	LI		foreign fridge?	
7 .	П	П	35. Were HF stickers affixed to each container, and container	ers stored in Sx fridge?
太			36. Was an NOD for created for noted discrepancies and pla	_
	iment a		roblems or discrepancies and the actions taken to resolve them	



PORTLAND, OR 9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

ORELAP#: OR100021

Amended Report

October 04, 2010

Erin Liebrecht Golder Associates - Canada 500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

RE: Stock Pile WP/YR

Enclosed are the results of analyses for samples received by the laboratory on 08/16/10 15:00. The following list is a summary of the Work Orders contained in this report, generated on 10/04/10 15:14.

If you have any questions concerning this report, please feel free to contact me.

Work Order	<u>Project</u>	<u>ProjectNumber</u>
PTH0489	Stock Pile WP/YR	96-1412-853B

TestAmerica Portland

Amended Report

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.



9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek DriveProject Number:96-1412-853BReport Created:Burnaby, BC/CAN V5C6C6Project Manager:Erin Liebrecht10/04/10 15:14

ANALYTICA	L REPORT	FOR SAMPLI	2.5

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
5149-2	PTH0489-02	Other dry	08/13/10 16:00	08/16/10 15:00
5149-6	PTH0489-06	Other dry	08/13/10 16:00	08/16/10 15:00
5149-10	PTH0489-10	Other dry	08/13/10 16:00	08/16/10 15:00

TestAmerica Portland

Estella K Rieben

Amended Report

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Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek DriveProject Number:96-1412-853BReport Created:Burnaby, BC/CAN V5C6C6Project Manager:Erin Liebrecht10/04/10 15:14

Analytical Case Narrative

TestAmerica - Portland, OR

PTH0489

10/4/10: Amended Report

This report includes additional analyses for SPLP 8270 SIM PAH and SPLP AK 102 (for Diesel) as requested by the client.

8/31/10:

The AK101 GRO/BTEX method requires soil/solid samples to be extracted into methanol within 48 hours of sampling. The samples requested for this analysis were not received by the lab as extracts. They were past the 48 hour time frame upon arrival. The samples were extracted by the lab. Due to the absorbant nature of the matrix (wood chips), 10 grams of sample was extracted into 50 mls of methanol with the appropriate surrogate.

TestAmerica Portland

Estella K Kuben

Amended Report

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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number:96-1412-853BReport Created:Project Manager:Erin Liebrecht10/04/10 15:14

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Note	es
PTH0489-02	(5149-2)			Ot	her dry		Samp	led: 08/13/	10 16:00			N
Gasoline Range Or	rganics	AK101/8021B	55.0		38.5	mg/kg dry	1x	10H0547	08/17/10 15:00	08/18/10 23:58	Q1	Į
Benzene		"	ND		0.192	"	"	"	"	"		
Toluene		"	ND		0.962	"	"	"	"	"		
Ethylbenzene		"	ND		0.962	"	"	"	"	"		
Xylenes (total)		"	ND		0.962	"	"	"	"	"		
Surrogate(s):	a,a,a-TFT (FID)				113%		50 - 150 %	"			"	
	a,a,a-TFT (PID)				112%		50 - 150 %	"			"	
PTH0489-06RE1	(5149-6)			Ot	her dry		Samp	led: 08/13/	10 16:00			N
Gasoline Range Org	ganics	AK101/8021B	ND		41.6	mg/kg dry	1x	10H0547	08/17/10 15:00	08/19/10 09:21		
Benzene			ND		0.208	"	"	"	"	"		
Toluene		"	ND		1.04	"	"	"	"	"		
Ethylbenzene		"	ND		1.04	"	"	"	"	"		
Xylenes (total)		"	ND		1.04	"	"	"	"	"		
Surrogate(s):	a,a,a-TFT (FID)				114%		50 - 150 %	"			"	
	a,a,a-TFT (PID)				117%		50 - 150 %	"			"	
PTH0489-10RE1	(5149-10)			Ot	her dry		Samp	led: 08/13/	10 16:00			P-HS, N1
Gasoline Range Org	ganics	AK101/8021B	ND		24.6	mg/kg dry	1x	10H0547	08/17/10 15:00	08/19/10 08:52		
Benzene		"	ND		0.123	"	"	"	"	"		
Toluene			ND		0.614	"	"	"	"	"		
Ethylbenzene		"	ND		0.614	"	"	"	"	"		
Xylenes (total)		"	ND		0.614	"	"	"	"	"		
Surrogate(s):	a,a,a-TFT (FID)				114%		50 - 150 %	"			"	
	a,a,a-TFT (PID)				115%		50 - 150 %	"			"	

TestAmerica Portland

Estella K Rieben

Amended Report

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Amended Report

Golder Associates - Canada

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

Stock Pile WP/YR Project Name:

96-1412-853B Project Number: Project Manager: Erin Liebrecht Report Created: 10/04/10 15:14

Diesel Range Organics (C10-C25) per AK102

TestAmerica Portland

Analyte	Method	Result	MDL* MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0489-02 (5149-2)			Other dry		Samp	led: 08/13/	10 16:00		
Diesel Range Organics	AK102	6090	229	mg/kg dry	10x	10Н0676	08/20/10 09:35	08/23/10 11:12	Q9
Surrogate(s): 1-Chlorooct	tadecane		3450%		50 - 150 %	"			" ZX
PTH0489-06 (5149-6)			Other dry		Samp	led: 08/13/	10 16:00		
Diesel Range Organics	AK102	10000	470	mg/kg dry	20x	10H0676	08/20/10 09:35	08/23/10 11:29	Q9
Surrogate(s): 1-Chlorooct	tadecane		5840%		50 - 150 %	"			" Z3
PTH0489-10 (5149-10)			Other dry		Samp	led: 08/13/	10 16:00		
Diesel Range Organics	AK102	8080	302	mg/kg dry	20x	10H0676	08/20/10 09:35	08/23/10 11:46	Q9
Surrogate(s): 1-Chlorooct	tadecane		13400%		50 - 150 %	"			" Z3

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Amended Report

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Stock Pile WP/YR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada Project Name:

500-4260 Still Creek DriveProject Number:96-1412-853BReport Created:Burnaby, BC/CAN V5C6C6Project Manager:Erin Liebrecht10/04/10 15:14

Diesel Range Organics (C10-C25) per AK102 on SPLP Extracted Sample

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0489-06 (5149-6)			Otl	her dry		Samp	led: 08/13/	10 16:00		
Diesel Range Organics	1312/AK102	3.63		0.250	mg/l	1x	10I0878	09/29/10 11:00	09/30/10 18:11	
Surrogate(s): 1-Chloroocto	adecane			60.1%		50 - 150 %	"			"

TestAmerica Portland

Estella K Rieben

Amended Report

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THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Project Manager: Erin Liebrecht Report Created: 10/04/10 15:14

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed		Notes
PTH0489-02 (5149-2)			Oth	er dry		Samp	led: 08/13/	10 16:00			
Acenaphthene	EPA 8270m	120000		9220	ug/kg dry	100x	10Н0676	08/20/10 09:35	08/23/10 17:15		
Acenaphthylene	"	ND		9220	"	"	"	"	"		
Anthracene		61300		9220	"	"	"	"	"		
Benzo (a) anthracene		45200		9220	"	"	"	"	"		
Benzo (a) pyrene		13000		9220	"	"	"	"	"		
Benzo (b) fluoranthene	"	17700		9220	"	"	"	"	"		
Benzo (ghi) perylene		ND		9220	"	"	"		"		
Benzo (k) fluoranthene	"	14000		9220	"	"	"	"	"		
Chrysene	"	45500		9220	"	"	"	"	"		
Dibenzo (a,h) anthracene		ND		9220	"	"	"		"		
Fluoranthene		278000		9220	"	"	"	"	"		
Fluorene		106000		9220	"	"	"	"	"		
Indeno (1,2,3-cd) pyrene		ND		9220	"	"	"		"		
Naphthalene		ND		9220	"	"	"		"		
Phenanthrene	"	360000		9220	"	"	"		"		
Pyrene	"	163000		9220	"	"	"	"	"		
Surrogate(s): Fluorene-d10				NR		24 - 125 %	"			"	Z3
Pyrene-d10				NR		41 - 141 %	"			"	Z 3
Benzo (a) pyrene	e-d12			NR		38 - 143 %	"			"	Z 3
PTH0489-06 (5149-6)			Oth	er dry		Samp	led: 08/13/	10 16:00			
Acenaphthene	EPA 8270m	204000		9440	ug/kg dry	100x	10Н0676	08/20/10 09:35	08/23/10 17:46		
Acenaphthylene	"	ND		9440	"	"	"	"	"		
Anthracene	"	154000		9440	"	"	"	"	"		
Benzo (a) anthracene	"	101000		9440	"	"	"	"	"		

Phenanthrene

TestAmerica Portland

Benzo (a) pyrene Benzo (b) fluoranthene

Benzo (ghi) perylene

Chrysene

Fluorene

Fluoranthene

Naphthalene

Benzo (k) fluoranthene

Dibenzo (a,h) anthracene

Indeno (1,2,3-cd) pyrene

Estella K Rieben

Amended Report

1000x

100x

1000x

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08/24/10 12:40

08/24/10 12:40

08/23/10 17:46

Estella Rieben, Project Manage

9440

9440 9440

9440

9440

9440

94400

9440

9440

9440

94400

31000

40700

32500

111000

523000

193000

ND

ND

ND

590000

ND



9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada 500-4260 Still Creek Drive

Burnaby, BC/CAN V5C6C6

Project Name:

Stock Pile WP/YR

Project Number:

96-1412-853B

Report Created:

Project Manager: Erin Liebrecht

10/04/10 15:14

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0489-06 ((5149-6)			Otl	ner dry		Samp	led: 08/13/	10 16:00		
Pyrene		EPA 8270m	334000		9440	ug/kg dry	100x	10H0676	08/20/10 09:35	08/23/10 17:46	
Surrogate(s):	Fluorene-d10				NR		24 - 125 %	"		"	Z 3
	Pyrene-d10				NR		41 - 141 %	"		"	Z 3
	Benzo (a) pyrene-	·d12			NR		38 - 143 %	"		"	Z 3
PTH0489-10 ((5149-10)			Otl	her dry		Samp	led: 08/13/	10 16:00		
Acenaphthene		EPA 8270m	42600		6060	ug/kg dry	100x	10H0676	08/20/10 09:35	08/23/10 18:17	
Acenaphthylene		"	ND		6060	"	"	"	"	"	
Anthracene		"	183000		6060	"	"	"	"	"	
Benzo (a) anthracei	ne	"	158000		6060	"	"	"	"	"	
Benzo (a) pyrene		"	49000		6060	"	"	"	"	"	
Benzo (b) fluoranth	iene	"	67300		6060	"	"	"	"	"	
Benzo (ghi) perylen	ie	"	11600		6060	"	"	"	"	"	
Benzo (k) fluoranth	iene	"	56200		6060	"	"	"	"	"	
Chrysene		"	163000		6060	"	"	"	"	"	
Dibenzo (a,h) anthra	icene	"	ND		6060	"	"	"	"	"	
Fluoranthene		"	783000		60600	"	1000x	"	"	08/24/10 13:12	
Fluorene		"	108000		6060	"	100x	"	"	08/23/10 18:17	
Indeno (1,2,3-cd) py	yrene	"	13400		6060	"	"	"	"	"	
Naphthalene		"	ND		6060	"	"	"	"	"	
Phenanthrene		"	257000		6060	"	"	"	"	"	
Pyrene		"	572000		60600	"	1000x	"	"	08/24/10 13:12	
Surrogate(s):	Fluorene-d10				NR		24 - 125 %	100x		08/23/10) 18:17 Z3
S (2).	Pyrene-d10				NR		41 - 141 %	"		"	Z 3
	Benzo (a) pyrene-	·d12			NR		38 - 143 %	"		"	Z 3

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Amended Report

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9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Project Manager: Erin Liebrecht Report Created: 10/04/10 15:14

Polynuclear Aromatic Compounds per EPA 8270M-SIM. TCLP/SPLP Extracted

TestAmerica Portland

Analyte	М	ethod Resul	t MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0489-06 (5149-6)		(Other dry		Samp	oled: 08/13/	10 16:00		H4
Acenaphthene	1311	-2/8270m 193	3	2.00	ug/l	5x	1010755	09/24/10 12:15	09/28/10 15:38	
Acenaphthylene		" 6.0	7	2.00	"	"	"	"	"	
Anthracene		" 14.0)	2.00	"	"	"	"	"	
Benzo (a) anthracen	ie	" 4.7	7	2.00	"	"	"	"	"	
Benzo (a) pyrene		" NI)	2.00	"	"	"	"	"	
Benzo (b) fluoranthe	ne	" NI)	2.00	"	"	"	"	"	
Benzo (ghi) perylene	;	" NI)	2.00	"	"	"	"	"	
Benzo (k) fluoranthe	ne	" NI)	2.00	"	"	"	"	"	
Chrysene		" 3.89)	2.00	"	"	"	"	"	
Dibenzo (a,h) anthra	cene	" NI)	2.00	"	"	"	"	"	
Fluoranthene		" 57.0	6	2.00	"	"	"	"	"	
Fluorene		92.0	6	2.00	"	"	"	"	"	
Indeno (1,2,3-cd) py	rene	" NI)	2.00	"	"	"	"	"	
Naphthalene		" NI)	2.00	"	"	"	"	"	
Phenanthrene		91.9)	2.00	"	"	"	"	"	
Pyrene		" 32.	7	2.00	"	"	"	"	"	
Surrogate(s):	Fluorene-d10			83.6%		25 - 125 %	"			"
- ',	Pyrene-d10			89.7%		23 - 150 %	"			"
	Benzo (a) pyrene-d12			83.6%		10 - 125 %	"			"

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Amended Report

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Stock Pile WP/YR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada 500-4260 Still Creek Drive

Burnaby, BC/CAN V5C6C6

Project Name:
Project Number:
Project Manager:

96-1412-853B Report Created: Erin Liebrecht 10/04/10 15:14

Percent Dry Weight (Solids) per ASTM D2216-80

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0489-02	(5149-2)			Otl	ner dry		Sam	pled: 08/13/	10 16:00		
% Solids		ASTM D2216-80	54.3		0.0100	% by Weight	1x	10H0554	08/17/10 19:00	08/19/10 09:50	
PTH0489-06	(5149-6)			Otl	ner dry		Sam	pled: 08/13/	10 16:00		
% Solids		ASTM D2216-80	52.2		0.0100	% by Weight	1x	10H0554	08/17/10 19:00	08/19/10 09:50	
PTH0489-10	(5149-10)			Otl	her dry		Sam	pled: 08/13/	10 16:00		
% Solids		ASTM D2216-80	81.4		0.0100	% by Weight	1x	10H0554	08/17/10 19:00	08/19/10 09:50	

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PORTLAND, OR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number:96-1412-853BReport Created:Project Manager:Erin Liebrecht10/04/10 15:14

	ine Range Org			-	rica Portland									
QC Batch: 10H0547	Soil Pre	paration M	lethod:	EPA 5035 M	lodified									
Analyte	Method	Result	M	DL* MRI	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (10H0547-BLK1)								Extr	acted:	08/17/10 13	:00			
Gasoline Range Organics	AK101/8021	ND		3.98	mg/kg wet	1x							08/18/10 16:58	
Benzene	В "	ND		0.0199	"	"							"	
Toluene	"	ND		0.0996	"	"							"	
Ethylbenzene	"	ND		0.0996	"								"	
Xylenes (total)	"	ND		0.0996	"	"							"	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	112%	i	Limits: 50-150%	, ,,							08/18/10 16:58	
a,a,a-TFT (PID)			108%		50-1509								"	
LCS (10H0547-BS1)								Extr	acted:	08/17/10 13	6:00			
Benzene	AK101/8021	1.05		0.0198	mg/kg wet	1x		0.992	106%	(70-130)			08/18/10 15:03	
Toluene	B "	1.02		0.0992	"			,,	103%	,,			,,	
Ethylbenzene	"	1.08			,,			,,	109%	,,			"	
Xylenes (total)	"	3.16			"			2.98	106%	,,			,,	
Surrogate(s): a,a,a-TFT (PID)		Recovery:	114%		Limits: 50-150%	, "							08/18/10 15:03	
1 CC (10110545 BC2)								Ent	4 4 .	00/17/10 13				
LCS (10H0547-BS2) Gasoline Range Organics	AK101/8021	25.6		3.98	mg/kg wet	1x		24.9	103%	08/17/10 13 (60-120)			08/18/10 16:01	
	В	20.0						2	10370	(00 120)				
Surrogate(s): a,a,a-TFT (FID)		Recovery:	111%	i	Limits: 50-150%	"							08/18/10 16:01	
LCS Dup (10H0547-BSD1)								Extr	acted:	08/17/10 13	:00			
Benzene	AK101/8021 B	1.07		0.0196	mg/kg wet	1x		0.979	109%	(70-130)	1.73%	(20)	08/18/10 15:32	
Toluene	"	1.00		0.0979	"	"		"	102%	"	1.69%	, "	"	
Ethylbenzene	"	1.06		0.0979	"	"		"	109%	"	1.51%	, "	"	
Xylenes (total)	"	3.10		0.0979	"			2.94	106%	"	1.87%	, "	"	
Surrogate(s): a,a,a-TFT (PID)		Recovery:	117%	i	Limits: 50-150%	"							08/18/10 15:32	
LCS Dup (10H0547-BSD2)								Extr	acted:	08/17/10 13	6:00			
Gasoline Range Organics	AK101/8021	26.4		. 3 07	mg/kg wet	1x		24.8	106%	(60-120)		ú (20)	08/18/10 16:29	
	B							27.0	100/0	(00-120)	J.20/	(20)		
Surrogate(s): a,a,a-TFT (FID)		Recovery:	115%	İ	Limits: 50-150%	"							08/18/10 16:29	
Duplicate (10H0547-DUP1)				QC Source	ee: PTH0490-0	2		Extr	acted:	08/17/10 15	5:00			N
Gasoline Range Organics	AK101/8021 B	232		49.1	mg/kg dry	1x	235				1.40%	(50)	08/18/10 19:11	(
	ь													

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Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

Project Number: 96-1412-853B
Project Manager: Erin Liebrecht

Report Created: 10/04/10 15:14

08/18/10 18:43

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 10H0547	Soil Pre	paration M	lethod: EPA	A 5035 M	odified									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (10H0547-DUP2)				QC Source	e: PTH0490-05	i		Exti	acted:	08/17/10 15	:00			N1
Gasoline Range Organics	AK101/8021 B	ND		32.4	mg/kg dry	1x	ND				3.72%	(50)	08/18/10 23:01	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	114%	L	imits: 50-150%	"							08/18/10 23:01	
Matrix Spike (10H0547-MS1)				QC Source	e: PTH0490-08	:		Exti	acted:	08/17/10 15	:00			N1
Benzene	AK101/8021 B	8.95		0.188	mg/kg dry	1x	ND	8.65	103%	(50-150)			08/18/10 18:14	
Toluene	"	8.63		0.941	"	"	0.109	"	98.4%	"			"	
Ethylbenzene	"	9.06		0.941	"	"	ND	"	105%	"			"	
Xylenes (total)	"	26.9		0.941	"	"	ND	26.0	104%	"			"	
Surrogate(s): a,a,a-TFT (PID)		Recovery:	118%	L	imits: 50-150%	"							08/18/10 18:14	
Matrix Spike Dup (10H0547-MS	SD1)			QC Source	e: PTH0490-08	;		Exti	racted:	08/17/10 15	:00			N1
Benzene	AK101/8021 B	8.98		0.188	mg/kg dry	1x	ND	8.65	104%	(50-150)	0.378%	(20)	08/18/10 18:43	
Toluene	"	8.68		0.941	"	"	0.109	"	99.0%	"	0.603%	5 "	"	
Ethylbenzene	"	9.14		0.941	"	"	ND	"	106%	"	0.884%	5 "	"	
Xylenes (total)	"	27.2		0.941	"	"	ND	26.0	105%	"	0.989%	5 "	"	

Limits: 50-150%

Recovery: 114%

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Surrogate(s): a,a,a-TFT (PID)

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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:14

	Diesel Ra	ange Organi	ics (C10-C2	25) per Al	K102 - La	borat	ory Qual	ity Co	ntrol	Results				
				TestAmeric	ca Portland									
QC Batch: 10H0676	Soil P	reparation M	lethod: EP	A 3550 Fu	els									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits) Analyzed	Notes
Blank (10H0676-BLK1)								Extr	acted:	08/20/10 09	9:35			
Diesel Range Organics	AK102	ND		12.5	mg/kg wet	1x							08/20/10 16:00	
Surrogate(s): 1-Chlorooctadecane		Recovery:	90.1%	Lii	nits: 50-150%	"							08/20/10 16:00	
LCS (10H0676-BS1)								Extr	acted:	08/20/10 09):35			
Diesel Range Organics	AK102	132		12.5	mg/kg wet	1x		125	106%	(75-125)			08/20/10 15:43	
Surrogate(s): 1-Chlorooctadecane		Recovery:	88.7%	Lii	mits: 60-120%	"							08/20/10 15:43	
Duplicate (10H0676-DUP1)				QC Source	: PTH0487-01			Extr	acted:	08/20/10 09):35			
Diesel Range Organics	AK102	14500		334	mg/kg dry	20x	15200				4.81%	(40)	08/20/10 16:14	Q9
Surrogate(s): 1-Chlorooctadecane		Recovery:	12000%	Lii	nits: 50-150%	"							08/20/10 16:14	Z.
Duplicate (10H0676-DUP2)				QC Source	: PTH0489-02			Extr	acted:	08/20/10 09):35			
Diesel Range Organics	AK102	6010		225	mg/kg dry	10x	6090				1.31%	(40)	08/20/10 16:59	Q9
Surrogate(s): 1-Chlorooctadecane		Recovery:	1780%	Lin	nits: 50-150%	"							08/20/10 16:59	ZX

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Amended Report

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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:14

Diesel Rang	ge Organics (C10-C25)	•			Sam	ple - La	borato	ry Qı	iality Co	ontrol	Result	S	
			Т	estAmeric	a Portland									
QC Batch: 1010878	Other d	ry Prepara	tion Method:	EPA 13	12/3510									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits) Analyzed	Notes
Blank (10I0878-BLK1)								Extr	acted:	09/29/10 11	:00			
Diesel Range Organics	1312/AK102	ND		0.250	mg/l	1x							09/30/10 16:26	
Surrogate(s): 1-Chlorooctadecane		Recovery:	85.5%	Lin	mits: 50-150%	"							09/30/10 16:26	
Blank (10I0878-BLK2)								Extr	acted:	09/29/10 11	:00			
Diesel Range Organics	1312/AK102	ND		0.240	mg/l	1x				-			09/30/10 16:44	
Surrogate(s): 1-Chlorooctadecane		Recovery:	79.0%	Lii	nits: 50-150%	"							09/30/10 16:44	
LCS (10I0878-BS1)								Extr	acted:	09/29/10 11	:00			
Diesel Range Organics	1312/AK102	2.10		0.250	mg/l	1x		2.50	83.9%	(75-125)			09/30/10 17:01	
Surrogate(s): 1-Chlorooctadecane		Recovery:	81.4%	Lin	nits: 50-150%	"							09/30/10 17:01	
LCS Dup (10I0878-BSD1)								Extr	acted:	09/29/10 11	:00			
Diesel Range Organics	1312/AK102	2.01		0.250	mg/l	1x		2.50	80.6%	(75-125)	4.02%	6 (20)	09/30/10 17:19	
Surrogate(s): 1-Chlorooctadecane		Recovery:	82.8%	Lii	nits: 50-150%	"							09/30/10 17:19	

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PORTLAND, OR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:14

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM - Laboratory Quality Control Results
Test A marica Portland

QC Batch: 10H0676 **Soil Preparation Method:** EPA 3550 Fuels Source Spike Analyte Method Result MDL* MRL Units Dil (Limits) (Limits) Analyzed RPD REC Amt Blank (10H0676-BLK1) Extracted: 08/20/10 09:35 EPA 8270m 197 50.2 08/23/10 15:04 В1 Acenaphthene 1x ug/kg wet Acenaphthylene ND 50.2 Anthracene ND 50.2 ND 50.2 Benzo (a) anthracene Benzo (a) pyrene ND 50.2 Benzo (b) fluoranthene ND 50.2 ND 50.2 Benzo (ghi) perylene 50.2 Benzo (k) fluoranthene ND Chrysene ND 50.2 Dibenzo (a,h) anthracene ND 50.2 Fluoranthene 50.2 ND Fluorene 83.3 50.2 В1 Indeno (1,2,3-cd) pyrene ND 50.2 Naphthalene ND 50.2 Phenanthrene ND 50.2 В1 Pyrene ND 50.2 Fluorene-d10Limits: 24-125% 08/23/10 15:04 Surrogate(s): Recovery: 66.6% 92.0% Pyrene-d10 41-141% Benzo (a) pyrene-d12 82.6% 38-143% Extracted: 08/20/10 09:35 LCS (10H0676-BS2) EPA 8270m 08/23/10 14:33 Acenaphthene 50.2 ug/kg wet 1x250 108% (33-139)50.2 256 Benzo (a) pyrene 103% (45-149)Pyrene 266 ---50.2 107% (39-138)Surrogate(s): Fluorene-d10 91.0% Limits: 24-125% 08/23/10 14:33 Recovery: Pyrene-d10 102% 41-141% Benzo (a) pyrene-d12 99.0% 38-143% QC Source: PTH0487-01 Duplicate (10H0676-DUP1) Extracted: 08/20/10 09:35 EPA 8270m 278000 08/24/10 16:52 Acenaphthene 6710 ug/kg dry 100x 1.47% (40) Acenaphthylene 7060 6710 6780 4.02% Anthracene 274000 6710 316000 14.2% Benzo (a) anthracene 138000 6710 140000 0.862% Benzo (a) pyrene 38100 6710 41000 7.22% Benzo (b) fluoranthene 51100 6710 55100 7.50% Benzo (ghi) perylene 9720 6710 10300 5.50%

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Benzo (k) fluoranthene

Dibenzo (a,h) anthracene

Chrysene

Fluoranthene

Estella K Rieben

Amended Report

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2.83%

0.582%

14.3%

2.36%

Estella Rieben, Project Manage

6710

6710

6710

67100

48600

147000

ND

871000

1000x

47300

147000

892000

ND

08/24/10 17:23



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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:14

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM - Laboratory Quality Control Results
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (10H0676-DUP1)				QC Source	e: PTH0487-	-01		Extra	cted:	08/20/10 09	:35			
Fluorene	"	408000		67100	"	"	385000				5.81%	"	"	
Indeno (1,2,3-cd) pyrene	"	10600		6710	"	100x	10700				0.783%	"	08/24/10 16:52	
Naphthalene	"	11300		6710	"	"	8800				25.3%	"	"	
Phenanthrene	"	1480000		67100	"	1000x	1190000				21.3%	"	08/24/10 17:23	
Pyrene	"	571000		67100	"	"	549000				4.08%	"	"	
Surrogate(s): Fluorene-d10		Recovery:	NR	L	imits: 24-125	% 100x							08/24/10 16:52	Z
Pyrene-d10			NR		41-141								"	Z
Benzo (a) pyrene-d12			NR		38-143	8% "							"	Z
Duplicate (10H0676-DUP2)				QC Source	e: PTH0489-	-02		Extra	cted:	08/20/10 09	:35			
Acenaphthene	EPA 8270m	92400		9040	ug/kg dry	100x	120000				25.9%	(40)	08/24/10 17:55	
Acenaphthylene	"	ND		9040	"	"	ND				NR	"	"	
Anthracene	"	58400		9040	"	"	61300				4.77%	"	"	
Benzo (a) anthracene	"	29700		9040	"	"	45200				41.3%	"	"	R2
Benzo (a) pyrene	"	ND		9040	"	"	13000				37.1%	"	"	
Benzo (b) fluoranthene	"	11300		9040	"	"	17700				44.3%	"	"	R2
Benzo (ghi) perylene	"	ND		9040	"	"	ND				25.2%	"	"	
Benzo (k) fluoranthene	"	10300		9040	"	"	14000				30.8%	"	"	
Chrysene	"	33400		9040	"	"	45500				30.6%	"	"	
Dibenzo (a,h) anthracene	"	ND		9040	"	"	ND				NR	"		
Fluoranthene	"	163000		9040	"	"	278000				52.2%	"		R2
Fluorene	"	70700		9040	"	"	106000				40.0%	"		
Indeno (1,2,3-cd) pyrene	"	ND		9040	"	"	ND				36.1%	"		
mucho (1,2,3-cu) pyrene		ND		9040	"	"	ND				NR	"		
Naphthalene														
	"	209000		9040	"	"	360000				53.1%	"	"	R2

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Benzo (a) pyrene-d12

Amended Report

38-143% "

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Estella Rieben, Project Manage

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THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B
Project Manager: Erin Liebrecht

Report Created: 10/04/10 15:14

Polynuclear Aromatic Compounds per EPA 8270M-SIM. TCLP/SPLP Extracted - Laboratory Quality Control Results TestAmerica Portland

QC Batcl	h: 10I0755	Water I	Preparation	Method:	3520B Liq	-Liq									
Analyte		Method	Result	MDI	L* MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (10I075	5-BLK1)								Ext	racted:	09/24/10 12	2:15			
Acenaphthene		1311-2/8270	ND		0.400	ug/l	1x						(09/27/10 17:39	
Acenaphthylene		m "	ND		0.400	"	"							"	
Anthracene		"	ND		0.400	"	"								
Benzo (a) anthracene		"	ND		0.400	"	"								
Benzo (a) pyrene		"	ND		0.400	"	"							"	
Benzo (b) fluoranthe	ne	,,	ND		0.400	"	"							"	
Benzo (ghi) perylene	,	,,	ND		0.400	"	"							"	
Benzo (k) fluoranthe	ne	"	ND		0.400	"	"								
Chrysene		"	ND		0.400	"	"							"	
Dibenzo (a,h) anthra	cene	"	ND		0.400	"	"								
Fluoranthene		"	ND		0.400	"	"							"	
Fluorene		"	ND		0.400	"	"							"	
Indeno (1,2,3-cd) pyr	rene	"	ND		0.400	"	"							"	
Naphthalene		"	ND		0.400	"	"								
Phenanthrene		"	ND		0.400	"	"								
Pyrene		"	ND		0.400	"	"							"	
Surrogate(s):	Fluorene-d10		Recovery:	81.3%	L	imits: 25-125	% "							09/27/10 17:39	
0 17	Pyrene-d10		Í	85.3%		23-150								"	
	Benzo (a) pyrene-d12			83.0%		10-12:	5% "							"	
LCS (1010755	-BS1)								Ext	racted:	09/24/10 12	2:15			
Acenaphthene	,	1311-2/8270	8.33		0.400	ug/l	1x		10.0	83.3%	(26-135)		(09/27/10 18:10	
Benzo (a) pyrene		m "	8.16		0.400	"	"		"	81.6%	(38-137)			"	
Pyrene		"	8.11		0.400	"			,,	81.1%	(33-133)			,,	
Surrogate(s):	Fluorene-d10		Recovery:	79.8%	I	imits: 25-125	% "							09/27/10 18:10	
2 28 (2)	Pyrene-d10			80.5%		23-150								"	
	Benzo (a) pyrene-d12			81.7%		10-12:	5% "							"	
Matrix Spike	(10I0755-MS1)				QC Sourc	e: PTH0487	-01		Ext	racted:	09/24/10 12	2:15			
Acenaphthene	,	1311-2/8270	210		8.00	ug/l	20x	181	10.0	285%	(26-135)		(09/27/10 18:40	МН
Benzo (a) pyrene		m "	ND		8.00	"	"	ND	,,	NR	(38-137)			"	N
Pyrene		"	56.2		8.00	"	"	47.8	"	83.3%	(33-133)			"	.,
Surrogate(s):	Fluorene-d10		Recovery:	87.2%		imits: 25-125	0/ "							09/27/10 18:40	

TestAmerica Portland

Estella K Rieben

Benzo (a) pyrene-d12

Amended Report

10-125% "

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Estella Rieben, Project Manage

72.9%



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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:14

	Percent Dry	Weight (Soli	/ .	STM D2216-80 · TestAmerica Portlan		ratory Q	uality Cont	rol Result	ts		
QC Batch: 10H0554 Soil Preparation Method: Dry Weight											
Analyte	Method	Result	MDL*	MRL Units	Dil	Source Result	Spike % Amt REC	(Limits)	⁰ / _A (Limit	s) Analyzed	Notes
Duplicate (10H0554-DUP1)				QC Source: PTH0464	-01		Extracted:	08/17/10 19	:00		
% Solids	ASTM D2216-80	91.2		0.0100 % by Weight	1x	93.2			2.20% (20)	08/19/10 09:50	
Duplicate (10H0554-DUP2)				QC Source: PTH0464	-02		Extracted:	08/17/10 19	:00		
% Solids	ASTM D2216-80	92.4		0.0100 % by Weight	1x	92.4			0.0163% (20)	08/19/10 09:50	

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Amended Report

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Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek DriveProject Number:96-1412-853BReport Created:Burnaby, BC/CAN V5C6C6Project Manager:Erin Liebrecht10/04/10 15:14

Notes and Definitions

Report Specific Notes:

B1 - Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.

H4 - Sample was extracted past holding time, but analyzed within analysis holding time.

The sample required a dilution due to matrix interference. Because of this dilution, the matrix spike concentrations in the sample were reduced to a level where the recovery calculation does not provide useful information. See Blank Spike (LCS).

MHA - Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).

N1 - See case narrative.

P-HS - Sample container contained headspace.

Q1 - Does not match typical pattern

4. Hydrocarbon pattern most closely resembles creosote or similar product.

QP - Hydrocarbon result partly due to individual peak(s) in quantitation range.

R2 - The RPD exceeded the acceptance limit.

The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

ZX - Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.

Laboratory Reporting Conventions:

DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.

ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR/NA _ Not Reported / Not Available

dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.

wet Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.

RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).

MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.

MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B.
 *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.

 Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.

Reporting - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

TestAmerica Portland

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Amended Report

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Stock Pile WP/YR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada Project Name:

500-4260 Still Creek DriveProject Number:96-1412-853BReport Created:Burnaby, BC/CAN V5C6C6Project Manager:Erin Liebrecht10/04/10 15:14

Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*.

Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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Estella K Rieben

Amended Report

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CERTIFICATION SUMMARY

TestAmerica Portland

Method	Matrix	Alaska
1311-2/8270m	Other dry	
1312/AK102	Other dry	
AK101/8021B	Other dry	X
AK102	Other dry	X
ASTM D2216-80	Other dry	
EPA 1312	Other dry	
EPA 8270m	Other dry	

TestAmerica Portland

Estella K Rieben

Amended Report

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9405 SW Nimbus AVE 800th Ship to TEST PAYERICA Pursil Bearlerton, OR Attn. Darrell Client Contact Erin Liebrecht Fax 8107-633-6077 Phone 867-354-7673 Sampled by Eric Liebrecht Address 2018 170 Titanium Way Client Name Golder Associates lanada. Whitehors, 4T 091

サ

500 - 4260 Still Creek Drive Burnaby, B.C. Canada V5C 6C6 Golder Associates

Tel: 604-296-4200 Fax: 604-298-5253 www.golder.com

Shipping Date Aug 15, 2010

		2																	
4	Sample Notes (preserved, saltwater, freshwater, may contain sewage)	, 25 m								•					Date:	Time:		Date:	Time:
	(preserved, sal	0-0		~			Contract	,			→				3) Released by:	Company:	Courier Name:	3) Received by:	Company:
sted	- 191	^		*	×		#61	×	X	×	X THE				3) Rele	S		3) Rec	Co
Test(s) Requested	CR0		7				7				7	106							* .
Tes	DRO		7				/				/	no			Date:	Time:		Date:	Ттте:
ი	Sample Container Ty by Code	75	_		-						>	tructions_	-		Da	Ė		Da	Ė
ło	Number of Sample Containers × Volume Sample Containers (1 × 20L)	2x99661	-								>	Comments/Instructions						·	
poq	Sample Collection Met G=grab Cccomposit	ৰ্		,							>				by:		Name:	by:	
~	Type of Each Sampl Material Safety Data SI (V)	GE CS CS CS CS CS CS CS CS CS CS CS CS CS						7 .			→				2) Released I	Company:	Courier N	2) Received I	Company:
	Sample Identification	5149-1	5149-2	543	5149-4	5149-5	5/40-6	5149-7	5149-8	5149=9			WP/YR		J Date: Aug 15, 2010 2)	xtes 1 Time: //://am	Knolchweak		Time: 1500 5.1
-	Time (24-h clock)	16:00									>	96-1412	ock Pile	, A	Liebreh	Company: Golder Associates	1	rapple	\$
	Collection Date (DD/MMM/YYYYY)	13/08/2010			•						>	PO/Reference No. 96 - 1412	Project Title Stock Pile WP NR	Results Needed By	1) Released by:	Company:	Courier Name: WINGS	1) Received by:	Company:

² Receiving Water (RW): Effluent (E); Elutriate (ELU); Sediment (SED); Chemical (CHEM); Stormwater (SW); Other (Please Specify) 1 For composite effluent or water samples, the sample collection date/time is the **end** of the compositing period.

Distribution of copies:

White-returned to consignor by consignee Yellow-kept by consignee (e.g. receiver) White, Yellow—accompany the shipment Pink—kept by consignor (e.g. shipper)

³ Collapsible Carboy (CC); glass jar (GJ); Jerry Can (JC); Plastic HDPE (P); Other (Please Specify)

⁴ Please note any conditions the lab should be aware of for safety and storage concerns

TestAmerica Portland Sample Receiving Checklist

Work Order #: <u>PTHOUS9</u> Date/Time Received Client Name and Project: <u>Golden</u> W	d: 8/16/10 1500
Time Zone: EDT/EST CDT/CST MDT/MST XPDT/PST	OTHER
Unpacking Checks: Cooler #(s): / Temperatures: 3 % Digi #1 Digi #2 IR Gun Fenteek [Plastic Glass)	Temperature out of Range: Not enough or No IceIce MeltedW/in 4 Hrs of collectionOther:
N/A Yes No	Initials:_\(\sigma\)
1. If ESI client, were temp blanks received? If no	document on NOD.
☐ ☐ 2. Cooler Seals intact? (N/A if hand delivered) if	no, document on NOD.
☐ 3. Chain of Custody present? If no, document on	NOD.
4. Bottles received intact? If no, document on NO	DD.
5. Sample is not multiphasic? If no, document or	NOD.
6. Proper Container and preservatives used? If no	o, document on NOD.
7. pH of all samples checked and meet requireme	ents? If no, document on NOD.
8. Cyanide samples checked for sulfides and mee	t requirements? If no, notify PM.
9. HF Dilution required?	
Description 10. Sufficient volume provided for all analysis? PM before proceeding. 11. Did chain of custody agree with samples received.	
☐ 12. Is the "Sampled by" section of the COC comp	
13. Were VOA/Oil Syringe samples without head	
☐ ☐ 14. Were VOA vials preserved? ☐HCl ☐Sodiu	
15. Did samples require preservation with sodium	
16. If yes to #15, was the residual chlorine test no	•
☐ ☐ 17. Are dissolved/field filtered metals bottles sed	
18. Is sufficient volume provided for client reque	
no, document on NOD and contact PM before pro	oceeding.
20. Was Standard Turn Around (TAT) requested	?
21. Receipt date(s) < 48 hours past the collection	date(s)? If no, notify PM.

TestAmerica Portland Sample Receiving Checklist

· ·			
Logi	n Ch	ecks	: Initials: \(\begin{align*} \frac{1}{2} & \text{Initials:} \\ \end{align*}
N/A	Yes	No	
	\mathbb{Z}		22. Sufficient volume provided for all analysis? If no, document on NOD & contact PM.
			23. Sufficient volume provided for client requested MS/MSD or matrix duplicates? If
·			no, document on NOD and contact PM.
			24. Did the chain of custody include "received by" and "relinquished by" signatures,
			dates and times?
			25. Were special log in instructions read and followed?
			26. Were tests logged checked against the COC?
			27. Were rush notices printed and delivered?
			28. Were short hold notices printed and delivered?
			29. Were subcontract COCs printed?
			30. Was HF dilution logged?
Lab	eling	and	Storage Checks: Initials: 15
N/A	Yes	No	
			31. Were the subcontracted samples/containers put in Sx fridge?
			32. Were sample bottles and COC double checked for dissolved/filtered metals?
			33. Did the sample ID, Date, and Time from label match what was logged?
			34. Were Foreign sample stickers affixed to each container and containers stored in
			foreign fridge?
			35. Were HF stickers affixed to each container, and containers stored in Sx fridge?
			36. Was an NOD for created for noted discrepancies and placed in folder?
	ment a		oblems or discrepancies and the actions taken to resolve them on a Notice of Discrepancy



PORTLAND, OR 9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

ORELAP#: OR100021

Amended Report

October 04, 2010

Erin Liebrecht Golder Associates - Canada 500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

RE: Stock Pile WP/YR

Enclosed are the results of analyses for samples received by the laboratory on 08/16/10 15:00. The following list is a summary of the Work Orders contained in this report, generated on 10/04/10 15:17.

If you have any questions concerning this report, please feel free to contact me.

Work Order	<u>Project</u>	<u>ProjectNumber</u>
PTH0490	Stock Pile WP/YR	96-1412-853B

TestAmerica Portland

Amended Report

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Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Project Number: 96-1412-853B Report Created:
Burnaby, BC/CAN V5C6C6 Project Manager: Erin Liebrecht 10/04/10 15:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
5148-2	PTH0490-02	Other dry	08/13/10 16:46	08/16/10 15:00
5148-5	PTH0490-05	Other dry	08/13/10 16:46	08/16/10 15:00
5148-8	PTH0490-08	Other dry	08/13/10 16:46	08/16/10 15:00

TestAmerica Portland

Estella K Rieben

Amended Report

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Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek DriveProject Number:96-1412-853BReport Created:Burnaby, BC/CAN V5C6C6Project Manager:Erin Liebrecht10/04/10 15:17

Analytical Case Narrative

TestAmerica - Portland, OR

PTH0490

10/4/10: Amended Report

This report includes additional analyses for SPLP 8270 SIM PAH and SPLP AK 102 (for Diesel) as requested by the client.

8/31/10:

The AK101 GRO/BTEX method requires soil/solid samples to be extracted into methanol within 48 hours of sampling. The samples requested for this analysis were not received by the lab as extracts. They were past the 48 hour time frame upon arrival. The samples were extracted by the lab. Due to the absorbant nature of the matrix (wood chips), 10 grams of sample was extracted into 50 mls of methanol with the appropriate surrogate.

TestAmerica Portland

Estella K Rieben

Amended Report

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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number:96-1412-853BReport Created:Project Manager:Erin Liebrecht10/04/10 15:17

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	N	Notes	
PTH0490-02	(5148-2)			Ot	ther dry		Samp	led: 08/13/	10 16:46				N
Gasoline Range O	Organics	AK101/8021B	235		49.1	mg/kg dry	1x	10H0547	08/17/10 15:00	08/18/10 19:40		QP	
Benzene		"	ND		0.245	"	"	"	"	"			
Toluene		"	ND		1.23	"	"	"	"	"			
Ethylbenzene		"	ND		1.23	"	"	"	"	"			
Xylenes (total)		"	ND		1.23	"	"	"	"	"			
Surrogate(s):	a,a,a-TFT (FID)				116%		50 - 150 %	"			"		
	a,a,a-TFT (PID)				111%		50 - 150 %	"			"		
PTH0490-05	(5148-5)			Ot	ther dry		Samp	led: 08/13/	10 16:46				N1
Gasoline Range O	rganics	AK101/8021B	ND		32.4	mg/kg dry	1x	10H0547	08/17/10 15:00	08/18/10 23:29			
Benzene		"	ND		0.162	"	"	"	"	"			
Toluene		"	ND		0.810	"	"	"	"	"			
Ethylbenzene		"	ND		0.810		"	"	"	"			
Xylenes (total)		"	ND		0.810	"	"	"	"	"			
Surrogate(s):	a,a,a-TFT (FID)				110%		50 - 150 %	"			"		
	a,a,a-TFT (PID)				107%		50 - 150 %	"			"		
PTH0490-08	(5148-8)			Ot	ther dry		Samp	led: 08/13/	10 16:46				N1
Gasoline Range O	Organics	AK101/8021B	60.9		37.6	mg/kg dry	1x	10H0547	08/17/10 15:00	08/18/10 17:46		Q1	
Benzene		"	ND		0.188	"	"	"	"	"			
Toluene		"	ND		0.941	"	"	"	"	"			
Ethylbenzene		"	ND		0.941	"	"	"	"	"			
Xylenes (total)		"	ND		0.941	"	"	"	"	"			
Surrogate(s):	a,a,a-TFT (FID)				116%		50 - 150 %	"			"		
	a,a,a-TFT (PID)				113%		50 - 150 %	"			"		

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Estella K Rieben

Amended Report

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Amended Report

Golder Associates - Canada 500-4260 Still Creek Drive

Burnaby, BC/CAN V5C6C6

Project Name:

Stock Pile WP/YR

Project Number:

96-1412-853B

Report Created:

Project Manager: Erin Liebrecht

10/04/10 15:17

Diesel Range Organics (C10-C25) per AK102

TestAmerica Portland

Analyte	Method	Result	MDL* M	IRL Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0490-02 (5148-2)			Other di	ry	Samp	oled: 08/13/	10 16:46		
Diesel Range Organics	AK102	10300		mg/kg dry	20x	10H0676	08/20/10 09:35	08/23/10 12:03	Q9
Surrogate(s): 1-Chloroocto	adecane		7450%	6	50 - 150 %	"			" Z3
PTH0490-05 (5148-5)			Other di	ry	Samp	oled: 08/13/	10 16:46		
Diesel Range Organics	AK102	7200		mg/kg dry	20x	10H0676	08/20/10 09:35	08/23/10 12:20	Q9
Surrogate(s): 1-Chloroocto	adecane		8170%	6	50 - 150 %	"			" Z3
PTH0490-08 (5148-8)			Other di	r y	Samp	oled: 08/13/	10 16:46		
Diesel Range Organics	AK102	10400		mg/kg dry	20x	10H0676	08/20/10 09:35	08/23/10 12:36	Q9
Surrogate(s): 1-Chloroocto	adecane		6580%	6	50 - 150 %	"			" Z3

TestAmerica Portland

Estella K Rieben

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Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

96-1412-853B Project Number: Project Manager: Erin Liebrecht Report Created: 10/04/10 15:17

Diesel Range Organics (C10-C25) per AK102 on SPLP Extracted Sample

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0490-02 (5148-2)			Otl	ner dry		Sampl	led: 08/13/	10 16:46		
Diesel Range Organics	1312/AK102	4.10		0.250	mg/l	1x	10I0878	09/29/10 11:00	09/30/10 18:29	
Surrogate(s): 1-Chlorooct	adecane			69.9%		50 - 150 %	"			"
PTH0490-08 (5148-8)			Otl	ner dry		Sampl	led: 08/13/	10 16:46		
Diesel Range Organics	1312/AK102	3.97		0.250	mg/l	1x	10I0878	09/29/10 11:00	09/30/10 18:46	
Surrogate(s): 1-Chlorooct	adecane			65.4%		50 - 150 %	"			"

TestAmerica Portland

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9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number:96-1412-853BReport Created:Project Manager:Erin Liebrecht10/04/10 15:17

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0490-02 (514	8-2)		Ot	her dry		Sampl	led: 08/13/	10 16:46		
Acenaphthene	EPA 8270m	148000		11200	ug/kg dry	100x	10H0676	08/20/10 09:35	08/23/10 18:53	
Acenaphthylene	"	ND		11200	"	"	"	"	"	
Anthracene	"	213000		11200	"	"	"	"	"	
Benzo (a) anthracene	"	177000		11200	"	"	"	"	"	
Benzo (a) pyrene	"	52100		11200	"	"	"	"	"	
Benzo (b) fluoranthene	"	72900		11200	"	"	"	"	"	
Benzo (ghi) perylene	"	12100		11200	"	"	"	"	"	
Benzo (k) fluoranthene	"	58200		11200	"	"	"	"	"	
Chrysene	"	178000		11200	"	"	"	"	"	
Dibenzo (a,h) anthracene	, "	ND		11200	"	"	"	"	"	
Fluoranthene	"	936000		112000	"	1000x	"	"	08/24/10 13:43	
Fluorene	"	174000		11200	"	100x	"	"	08/23/10 18:53	
Indeno (1,2,3-cd) pyreno	e "	13300		11200	"	"	"	"	"	
Naphthalene	"	ND		11200	"	"	"	"	"	
Phenanthrene	"	488000		11200	"	"	"	"	"	
Pyrene	"	632000		112000	"	1000x	"	"	08/24/10 13:43	
Surrogate(s): Flu	orene-d10			NR		24 - 125 %	100x		08/23/10 1	8:53 Z 3
	rene-d10			NR		41 - 141 %	"		"	Z 3
Ber	nzo (a) pyrene-d12			NR		38 - 143 %	"		"	Z 3

PTH0490-05 (5148-5)			Ot	her dry		Sam	pled: 08/13/	10 16:46	
Acenaphthene	EPA 8270m	82700		7620	ug/kg dry	100x	10H0676	08/20/10 09:35	08/23/10 19:24
Acenaphthylene	"	ND		7620	"	"	"	"	"
Anthracene	"	128000		7620	"	"	"	"	"
Benzo (a) anthracene	"	98900		7620	"	"	"	"	"
Benzo (a) pyrene	"	33400		7620	"	"	"	"	"
Benzo (b) fluoranthene	"	41200		7620	"	"	"	"	11
Benzo (ghi) perylene	"	9830		7620	"	"	"	"	"
Benzo (k) fluoranthene	"	36900		7620	"	"	"	"	"
Chrysene	"	109000		7620	"	"	"	"	"
Dibenzo (a,h) anthracene	"	ND		7620	"	"	"	"	"
Fluoranthene	"	515000		76200	"	1000x	"	"	08/24/10 14:14
Fluorene	"	69300		7620	"	100x	"	"	08/23/10 19:24
Indeno (1,2,3-cd) pyrene	"	8670		7620	"	"	"	"	11
Naphthalene	"	ND		7620	"	"	"	"	"
Phenanthrene	"	231000		7620	"	"	"	"	"

TestAmerica Portland

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Amended Report

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Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Project Manager: Erin Liebrecht Report Created: 10/04/10 15:17

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM

TestAmerica Portland

Analyte	N	1ethod I	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed		Notes
PTH0490-05 (5	5148-5)			Other	r dry		Sampl	led: 08/13/	10 16:46			
Pyrene	El	PA 8270m 34	46000		7620	ug/kg dry	100x	10H0676	08/20/10 09:35	08/23/10 19:24		
Surrogate(s):	Fluorene-d10				NR		24 - 125 %	"			"	Z3
	Pyrene-d10				NR		41 - 141 %	"			"	Z 3
	Benzo (a) pyrene-d12				NR		38 - 143 %	"			"	Z 3
PTH0490-08 (5	5148-8)			Other	r dry		Sampl	led: 08/13/1	10 16:46			
Acenaphthene	EI	PA 8270m 19	91000		8810	ug/kg dry	100x	10H0676	08/20/10 09:35	08/23/10 19:55		
Acenaphthylene		"	ND		8810	"	"	"	"	"		
Anthracene		" 19	92000		8810	"	"	"	"	"		
Benzo (a) anthraceno	e	" 10	07000		8810	"	"	"	"	"		
Benzo (a) pyrene		"	33300		8810	"	"	"	"	"		
Benzo (b) fluoranthe	ene	"	45800		8810	"	"	"	"	"		
Benzo (ghi) perylene		"	9000		8810	"	"	"	"	"		
Benzo (k) fluoranthe	ene	"	36200		8810	"	"	"	"	"		
Chrysene		" 12	21000		8810	"	"	"	"	"		
Dibenzo (a,h) anthrac	ene	"	ND		8810	"	"	"	"	"		
Fluoranthene		" 6	74000		88100	"	1000x	"	"	08/24/10 14:45		
Fluorene		" 1	73000		8810	"	100x	"	"	08/23/10 19:55		
Indeno (1,2,3-cd) pyr	rene	"	8940		8810	"	"	"	"	"		
Naphthalene		"	ND		8810	"	"	"	"	"		
Phenanthrene		" 70	06000		88100	"	1000x	"	"	08/24/10 14:45		
Pyrene		" 40	00000		8810	"	100x	"	"	08/23/10 19:55		
Surrogate(s):	Fluorene-d10				NR		24 - 125 %	"			"	Z 3
	Pyrene-d10				NR		41 - 141 %	"			"	Z 3
	Benzo (a) pyrene-d12				NR		38 - 143 %	"			"	Z 3

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Amended Report

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PORTLAND, OR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Project Manager: Erin Liebrecht Report Created: 10/04/10 15:17

Polynuclear Aromatic Compounds per EPA 8270M-SIM. TCLP/SPLP Extracted

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1311-2/8270m " " " "	98.5 4.01 12.2 7.63	Ott	4.00 0.800 0.800	ug/l	10x	led: 08/13/1	09/24/10 12:15	00/07/10 00 40		Н
" "	4.01 12.2 7.63		0.800			1010755	09/24/10 12:15	00/05/10 00 40		
"	12.2 7.63			"				09/27/10 20:42		
"	7.63		0.800		2x	"	"	09/28/10 16:08		
"			0.800	"	"	"	"	"		
			0.800	"	"	"	"	"		
"	1.34		0.800	"	"	"	"	"		
	2.13		0.800	"	"	"	"	"		
"	ND		0.800	"	"	"	"	"		
"	1.55		0.800	"	"	"	"	"		
"	5.88		0.800	"	"	"	"	"		
"	ND		0.800	"	"	"	"	"		
"	81.1		4.00	"	10x	"	"	09/27/10 20:42		
"	45.4		0.800	"	2x	"	"	09/28/10 16:08		
"	ND		0.800	"	"	"	"	"		
"	ND		0.800	"	"	"	"	"		
"	29.4		0.800	"	"	"	"	"		
"	49.2		0.800	"	"	"	"	"		
			79.9%		25 - 125 %	"			"	
			88.9%		23 - 150 %	"			"	
112			80.8%		10 - 125 %	"			"	
		ND 1.55 5.88 ND 81.1 45.4 ND ND ND 29.4	ND 1.55 5.88 ND 81.1 45.4 ND ND ND 49.2	ND 0.800 1.55 0.800 ND 0.800 A9.2 0.800	ND 0.800 " 1.55 0.800 " 5.88 0.800 " ND 0.800 " 81.1 4.00 " 45.4 0.800 " ND 0.800 " ND 0.800 " 29.4 0.800 " 49.2 0.800 "	ND 0.800 " " 5.88 0.800 " " ND 0.800 " " 81.1 4.00 " 10x 45.4 0.800 " 2x ND 0.800 " " ND 0.800 " " ND 0.800 " " 49.2 0.800 " " 79.9% 25 - 125 % 88.9% 23 - 150 %	ND 0.800 " " " " " " " " " " " " " " " " " "	ND 0.800 " " " " " " " " " " " " " " " " " "	ND 0.800 " " " " " " " " " " " " " " " " " "	1.55 0.800 " " " " " " " " " " " " " " " " " "

PTH0490-08 (5148-8)			Ot	her dry		Sam	pled: 08/13/	10 16:46		H4
Acenaphthene	1311-2/8270m	97.2		4.00	ug/l	10x	1010755	09/24/10 12:15	09/27/10 21:13	
Acenaphthylene	"	2.88		0.800	"	2x	"	"	09/28/10 16:37	
Anthracene	"	5.93		0.800	"	"	"	"	"	
Benzo (a) anthracene	"	3.22		0.800	"	"	"	"	"	
Benzo (a) pyrene	"	ND		0.800	"	"	"	"	"	
Benzo (b) fluoranthene	"	0.963		0.800	"	"	"	"	"	
Benzo (ghi) perylene	"	ND		0.800	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND		0.800		"	"	"	"	
Chrysene	"	3.17		0.800	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND		0.800	"	"	"	"	"	
Fluoranthene	"	34.7		0.800		"	"	"	"	
Fluorene	"	16.1		0.800	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND		0.800		"	"	"	"	
Naphthalene	"	ND		0.800	"	"	"	"	"	
Phenanthrene	"	ND		0.800	"	"	"	"	"	

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Amended Report

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Amended Report

Golder Associates - Canada 500-4260 Still Creek Drive

Burnaby, BC/CAN V5C6C6

Project Name:

Stock Pile WP/YR

Project Number: Project Manager: 96-1412-853B Erin Liebrecht Report Created: 10/04/10 15:17

Polynuclear Aromatic Compounds per EPA 8270M-SIM. TCLP/SPLP Extracted

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
PTH0490-08	(5148-8)			Otl	her dry		Samp	led: 08/13/	10 16:46			Н4
Pyrene		1311-2/8270m	21.1		0.800	ug/l	2x	10I0755	09/24/10 12:15	09/28/10 16:37		
Surrogate(s):	Fluorene-d10				75.7%		25 - 125 %	"			"	
	Pyrene-d10				86.7%		23 - 150 %	"			"	
	Benzo (a) pyrene	e-d12			78.5%		10 - 125 %	"			"	

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Stock Pile WP/YR

96-1412-853B

Erin Liebrecht

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Project Name:

Golder Associates - Canada

500-4260 Still Creek Drive Project Number:
Burnaby, BC/CAN V5C6C6 Project Manager:

Report Created: 10/04/10 15:17

Percent Dry Weight (Solids) per ASTM D2216-80

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0490-02	(5148-2)			Ot	her dry		Sam	pled: 08/13/	10 16:46		
% Solids		ASTM D2216-80	44.4		0.0100	% by Weight	1x	10H0554	08/17/10 19:00	08/19/10 09:50	
PTH0490-05	(5148-5)			Ot	her dry		Sam	pled: 08/13/	10 16:46		
% Solids		ASTM D2216-80	64.9		0.0100	% by Weight	1x	10Н0554	08/17/10 19:00	08/19/10 09:50	
PTH0490-08	(5148-8)			Oti	her dry		Sam	pled: 08/13/	10 16:46		
% Solids		ASTM D2216-80	57.0		0.0100	% by Weight	1x	10H0554	08/17/10 19:00	08/19/10 09:50	

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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number:96-1412-853BReport Created:Project Manager:Erin Liebrecht10/04/10 15:17

Sason	ine Range Org	,			ica Portland		Labore			, contr				
QC Batch: 10H0547	Soil Pre	paration M	lethod: EPA	5035 M	odified									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits) Analyzed	Notes
Blank (10H0547-BLK1)								Extr	acted:	08/17/10 13	3:00			
Gasoline Range Organics	AK101/8021	ND		3.98	mg/kg wet	1x							08/18/10 16:58	
Benzene	B "	ND		0.0199	"	"							"	
Toluene	"	ND		0.0996	"	"							"	
Ethylbenzene	"	ND		0.0996	"	"							"	
Xylenes (total)	"	ND		0.0996	"	"							"	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	112%	1	imits: 50-150%	"							08/18/10 16:58	
a,a,a-TFT (PID)			108%		50-150%									
LCS (10H0547-BS1)								Extr	acted:	08/17/10 13	:00			
Benzene	AK101/8021	1.05		0.0198	mg/kg wet	1x		0.992	106%	(70-130)			08/18/10 15:03	
Toluene	B "	1.02		0.0992	"	"		"	103%				"	
Ethylbenzene	"	1.08		0.0992	"	"		"	109%				"	
Xylenes (total)	"	3.16		0.0992	"	"		2.98	106%				"	
Surrogate(s): a,a,a-TFT (PID)		Recovery:	114%	1	imits: 50-150%	"							08/18/10 15:03	
LCS (10H0547-BS2)								Extr	acted:	08/17/10 13	6:00			
Gasoline Range Organics	AK101/8021 B	25.6		3.98	mg/kg wet	1x		24.9	103%	(60-120)			08/18/10 16:01	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	111%	1	imits: 50-150%	"							08/18/10 16:01	
LCS Dup (10H0547-BSD1)								Extr	acted:	08/17/10 13	3:00			
Benzene	AK101/8021	1.07		0.0196	mg/kg wet	1x		0.979	109%	(70-130)	1.73%	(20)	08/18/10 15:32	
Toluene	B "	1.00		0.0979	"			"	102%		1.69%	5 "	"	
Ethylbenzene	"	1.06		0.0979	"	"		"	109%		1.51%	· "	"	
Xylenes (total)	"	3.10		0.0979	"	"		2.94	106%	"	1.87%	, "		
Surrogate(s): a,a,a-TFT (PID)		Recovery:	117%	1	imits: 50-150%	"							08/18/10 15:32	
LCS Dup (10H0547-BSD2)								Extr	acted:	08/17/10 13	3:00			
Gasoline Range Organics	AK101/8021 B	26.4		3.97	mg/kg wet	1x		24.8	106%	(60-120)	3.26%	(20)	08/18/10 16:29	
Surrogate(s): a,a,a-TFT (FID)	Б	Recovery:	115%	1	imits: 50-150%	"							08/18/10 16:29	
Duplicate (10H0547-DUP1)				QC Source	e: PTH0490-02			Extr	acted:	08/17/10 15	5:00			N
Gasoline Range Organics	AK101/8021	232		49.1	mg/kg dry	1x	235				1.40%	(50)	08/18/10 19:11	Ç
Surrogate(s): a,a,a-TFT (FID)	В	Recovery:	114%		imits: 50-150%	"							08/18/10 19:11	

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Amended Report

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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:17

L				-	-									
Gasoli	ne Range Org	anics (C6-		_	r AK101/8 ica Portland		- Labora	atory (Quality	y Contro	ol Res	ults		
QC Batch: 10H0547	Soil Pre	paration M	ethod: EP	A 5035 M	odified									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits	s) Analyzed	Notes
Duplicate (10H0547-DUP2)				QC Source	e: PTH0490-	05		Ext	racted:	08/17/10 15	:00			N1
Gasoline Range Organics	AK101/8021 B	ND		32.4	mg/kg dry	1x	ND				3.72%	6 (50)	08/18/10 23:01	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	114%	I	imits: 50-1509	% "							08/18/10 23:01	
Matrix Spike (10H0547-MS1)				QC Source	e: PTH0490-	08		Ext	racted:	08/17/10 15	:00			N1
Benzene	AK101/8021 B	8.95		0.188	mg/kg dry	1x	ND	8.65	103%	(50-150)			08/18/10 18:14	
Toluene	"	8.63		0.941	"	"	0.109	"	98.4%	"			"	
Ethylbenzene	"	9.06		0.941	"	"	ND	"	105%	"			"	
Xylenes (total)	"	26.9		0.941	"	"	ND	26.0	104%	"			"	
Surrogate(s): a,a,a-TFT (PID)		Recovery:	118%	I	imits: 50-150%	% "							08/18/10 18:14	
Matrix Spike Dup (10H0547-M	SD1)			QC Source	e: PTH0490-	08		Ext	racted:	08/17/10 15	:00			N1
Benzene	AK101/8021 B	8.98		0.188	mg/kg dry	1x	ND	8.65	104%	(50-150)	0.3789	% (20)	08/18/10 18:43	
Toluene	"	8.68		0.941	"	"	0.109	"	99.0%	"	0.6039	% "	"	
Ethylbenzene	"	9.14		0.941	"	"	ND	"	106%	"	0.8849	/ ₀ "	"	
Xylenes (total)	"	27.2		0.941	"	"	ND	26.0	105%	"	0.9899	/ ₀ "	"	

Limits: 50-150%

Recovery: 114%

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Surrogate(s): a,a,a-TFT (PID)

Amended Report

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08/18/10 18:43



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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

Surrogate(s): 1-Chlorooctadecane

Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:17

	Diesel Ra	ange Organ	ics (C10-C2		K102 - La ica Portland	borat	ory Qual	lity Co	ntrol	Results				
QC Batch: 10H0676	Soil P	reparation N	lethod: EP.	A 3550 Fu	iels									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	RPD (Limits	s) Analyzed	Notes
Blank (10H0676-BLK1)								Exti	acted:	08/20/10 09	:35			
Diesel Range Organics	AK102	ND		12.5	mg/kg wet	1x							08/20/10 16:00	
Surrogate(s): 1-Chlorooctadecane		Recovery:	90.1%	L	imits: 50-150%	"							08/20/10 16:00	
LCS (10H0676-BS1)								Exti	racted:	08/20/10 09	:35			
Diesel Range Organics	AK102	132		12.5	mg/kg wet	1x		125	106%	(75-125)			08/20/10 15:43	
Surrogate(s): 1-Chlorooctadecane		Recovery:	88.7%	L	imits: 60-120%	"							08/20/10 15:43	
Duplicate (10H0676-DUP1)				QC Sourc	e: PTH0487-01			Exti	acted:	08/20/10 09	:35			
Diesel Range Organics	AK102	14500		334	mg/kg dry	20x	15200				4.81%	(40)	08/20/10 16:14	Q9
Surrogate(s): 1-Chlorooctadecane		Recovery:	12000%	L	imits: 50-150%	"							08/20/10 16:14	Z
Duplicate (10H0676-DUP2)				QC Sourc	e: PTH0489-02			Exti	racted:	08/20/10 09	:35			
Diesel Range Organics	AK102	6010		225	mg/kg dry	10x	6090				1.31%	(40)	08/20/10 16:59	Q9

Limits: 50-150%

Recovery: 1780%

TestAmerica Portland

Estella K Rieben

Amended Report

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Estella Rieben, Project Manage

08/20/10 16:59



9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Project Number:

Golder Associates - Canada

Project Name: Sto

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

Project Manager: Erin Liebrecht

96-1412-853B

Report Created: 10/04/10 15:17

Diesal Rane	ge Organics (C10-C25)	ner AK102 o	n SDI D	Extracted	Sami	nla - I al	horato	ry Oı	iality Co	ntrol	Pacult	8	
Diesei Kang	ge Organics (C10-C23)	-		a Portland	Sam	ріс - Га	DUIALU	ıy Qı	тапц С)11(1 ()1	Kesuit	•	
QC Batch: 10I0878	Other d	ry Prepara	tion Method:	EPA 13	12/3510									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)) Analyzed	Notes
Blank (10I0878-BLK1)								Exti	racted:	09/29/10 11	1:00			
Diesel Range Organics	1312/AK102	ND		0.250	mg/l	1x							09/30/10 16:26	
Surrogate(s): 1-Chlorooctadecane		Recovery:	85.5%	Lin	nits: 50-150%	"							09/30/10 16:26	
Blank (10I0878-BLK2)								Exti	racted:	09/29/10 11	1:00			
Diesel Range Organics	1312/AK102	ND		0.240	mg/l	1x						-	09/30/10 16:44	
Surrogate(s): 1-Chlorooctadecane		Recovery:	79.0%	Lin	nits: 50-150%	"							09/30/10 16:44	
LCS (10I0878-BS1)								Exti	racted:	09/29/10 11	1:00			
Diesel Range Organics	1312/AK102	2.10		0.250	mg/l	1x		2.50	83.9%	(75-125)			09/30/10 17:01	
Surrogate(s): 1-Chlorooctadecane		Recovery:	81.4%	Lin	nits: 50-150%	"							09/30/10 17:01	
LCS Dup (10I0878-BSD1)								Exti	racted:	09/29/10 11	1:00			
Diesel Range Organics	1312/AK102	2.01		0.250	mg/l	1x		2.50	80.6%	(75-125)	4.02%	(20)	09/30/10 17:19	
Surrogate(s): 1-Chlorooctadecane		Recovery:	82.8%	Lin	nits: 50-150%	"							09/30/10 17:19	

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Amended Report

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THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

QC Batch: 10H0676

Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:17

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM - Laboratory Quality Control Results
TestAmerica Portland

Soil Preparation Method: EPA 3550 Fuels

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limit	s) Analyzed	Notes
Blank (10H0676-BLK1)								Extra	acted:	08/20/10 09	:35			
Acenaphthene	EPA 8270m	197		50.2	ug/kg wet	1x							08/23/10 15:04	В1
Acenaphthylene	"	ND		50.2	"	"							"	
Anthracene	"	ND		50.2	"	"							"	
Benzo (a) anthracene	"	ND		50.2	"	"							"	
Benzo (a) pyrene	"	ND		50.2	"	"							"	
Benzo (b) fluoranthene	"	ND		50.2	"	"							"	
Benzo (ghi) perylene	"	ND		50.2	"	"							"	
Benzo (k) fluoranthene	"	ND		50.2	"	"							"	
Chrysene	"	ND		50.2	"	"							"	
Dibenzo (a,h) anthracene	"	ND		50.2	"								"	
Fluoranthene	"	ND		50.2	"								"	
Fluorene	"	83.3		50.2	"	"								В1
Indeno (1,2,3-cd) pyrene	"	ND		50.2	"	"								
Naphthalene	"	ND		50.2	"	"								
Phenanthrene	"	ND		50.2	"	"							"	В1
Pyrene	"	ND		50.2	"	"							"	
Surrogate(s): Fluorene-d10		Recovery:	66.6%	I.	imits: 24-125	% "							08/23/10 15:04	
Pyrene-d10		necovery.	92.0%	L	41-141								"	
Benzo (a) pyrene-d12			82.6%		38-143	1% "							"	
LCC (10H0(7) DC2)								Evetu	a atada	08/20/10 09	.25			
LCS (10H0676-BS2)	EPA 8270m	269		50.2		1							08/23/10 14:33	
Acenaphthene	EPA 82/0m			50.2	ug/kg wet	1x		250	108%	(33-139)			08/23/10 14:33	
Benzo (a) pyrene		256		50.2	,,	,			103%	(45-149)				
Pyrene		266		50.2					107%	(39-138)				
Surrogate(s): Fluorene-d10		Recovery:	91.0%	L	imits: 24-125								08/23/10 14:33	
Pyrene-d10 Benzo (a) pyrene-d12			102% 99.0%		41-141 38-143								,,	
Benzo (a) pyrene-a12			99.070		30-143	//0								
Duplicate (10H0676-DUP1)				QC Source	e: PTH0487-	01		Extra	acted:	08/20/10 09	:35			
Acenaphthene	EPA 8270m	278000		6710	ug/kg dry	100x	274000				1.47%	(40)	08/24/10 16:52	
Acenaphthylene	"	7060		6710	"	"	6780				4.02%	ó "	"	
Anthracene	"	274000		6710	"	"	316000				14.2%	ó "	"	
Benzo (a) anthracene	"	138000		6710	"	"	140000				0.8629	% "	"	
Benzo (a) pyrene	"	38100		6710	"	"	41000				7.22%	ó "	"	
Benzo (b) fluoranthene	"	51100		6710	"	"	55100				7.50%	ó "	"	
Benzo (ghi) perylene	"	9720		6710	"	"	10300				5.50%	ó "	"	
Benzo (k) fluoranthene	"	47300		6710	"	"	48600				2.83%	ó "	"	
Chrysene	"	147000		6710	"	"	147000				0.5829	% "	"	
Dibenzo (a,h) anthracene	"	ND		6710	"	"	ND				14.3%	ó "	"	
Fluoranthene		892000		67100	,,	1000x	871000				2.36%		08/24/10 17:23	

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Estella K Rieben

Amended Report

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9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:17

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM - Laboratory Quality Control Results
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (10H0676-DUP1)				QC Source:	PTH0487-	01		Extr	acted:	08/20/10 09	:35			
Fluorene	"	408000		67100	"	"	385000				5.81%	"		
Indeno (1,2,3-cd) pyrene	"	10600		6710	"	100x	10700				0.783%	. "	08/24/10 16:52	
Naphthalene	"	11300		6710	"	"	8800				25.3%	"		
Phenanthrene	"	1480000		67100	"	1000x	1190000				21.3%	"	08/24/10 17:23	
Pyrene	"	571000		67100	"	"	549000				4.08%	"	"	
Surrogate(s): Fluorene-d10		Recovery:	NR	Lin	nits: 24-125	% 100x							08/24/10 16:52	
Pyrene-d10			NR		41-141								"	2
Benzo (a) pyrene-d12			NR		38-143	% "							"	
Duplicate (10H0676-DUP2)				QC Source:	PTH0489-	02		Extr	acted:	08/20/10 09	:35			
Acenaphthene	EPA 8270m	92400		9040	ug/kg dry	100x	120000				25.9%	(40)	08/24/10 17:55	
Acenaphthylene	"	ND		9040	"	"	ND				NR	"		
Anthracene	"	58400		9040	"	"	61300				4.77%	"	"	
Benzo (a) anthracene	"	29700		9040	"	"	45200				41.3%	"	"	R
Benzo (a) pyrene	"	ND		9040	"	"	13000				37.1%	"	"	
Benzo (b) fluoranthene	"	11300		9040	"	"	17700				44.3%	"	"	R
Benzo (ghi) perylene	"	ND		9040	"	"	ND				25.2%	"	"	
Benzo (k) fluoranthene	"	10300		9040	"	"	14000				30.8%	"	"	
Chrysene	"	33400		9040	"	"	45500				30.6%	"		
Dibenzo (a,h) anthracene	"	ND		9040	"	"	ND				NR	"		
Fluoranthene	"	163000		9040	"	"	278000				52.2%	"	"	R
Fluorene	"	70700		9040	"	"	106000				40.0%	"	"	
Indeno (1,2,3-cd) pyrene	"	ND		9040	"	"	ND				36.1%	"	"	
Naphthalene	"	ND		9040	"	"	ND				NR	"	"	
Phenanthrene	"	209000		9040	"	"	360000				53.1%	"		R
Pyrene	"	110000		9040	"	"	163000				39.0%	"		
Surrogate(s): Fluorene-d10		Recovery:	NR	Lin	nits: 24-125	% "							08/24/10 17:55	

41-141% "

38-143% "

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Estella K Rieben

Pyrene-d10

Benzo (a) pyrene-d12

Amended Report

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Estella Rieben, Project Manage

NR

NR

Z3

Z3



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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number:96-1412-853BReport Created:Project Manager:Erin Liebrecht10/04/10 15:17

Polynuclear Aromatic Compounds per EPA 8270M-SIM.	TCLP/SPLP Extracted - Laboratory Quality Control Results
TestAmeric	rica Portland

QC Batch	n: 10I0755	Water I	Preparation	n Method:	3520B Liq	-Liq									
Analyte		Method	Result	MD	DL* MRL	Units	Dil	Source Result	Spike Amt	e % REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (10I075	5-BLK1)								Ext	racted:	09/24/10 12	2:15			
Acenaphthene		1311-2/8270	ND		0.400	ug/l	1x							09/27/10 17:39	
Acenaphthylene		m "	ND		0.400	,,								"	
Anthracene		"	ND		0.400	"	"							"	
Benzo (a) anthracene		"	ND		0.400	"	"							"	
Benzo (a) pyrene		"	ND		0.400	"	"							"	
Benzo (b) fluoranther	ne	,,	ND		0.400	"									
Benzo (ghi) perylene		,,	ND		0.400	"	"							"	
Benzo (k) fluoranther		,,	ND		0.400	"	"							"	
Chrysene		,,	ND		0.400	"	"							"	
Dibenzo (a,h) anthrac	cene	,,	ND		0.400	"	"							"	
Fluoranthene		,,	ND		0.400	"	"							"	
Fluorene		,,	ND		0.400	"	"							"	
Indeno (1,2,3-cd) pyr	rene	,,	ND		0.400	"	"							"	
Naphthalene		"	ND		0.400	,,	"							"	
Phenanthrene		"	ND		0.400	,,	"							"	
Pyrene		,,	ND		0.400	"	"							"	
	Fluorene-d10			81.3%		imits: 25-12	50/ "							09/27/10 17:39	
surrogaie(s).	Pyrene-d10		Recovery:	85.3%	L	23-12 23-1.								"	
	Benzo (a) pyrene-d12			83.0%		10-1								"	
LCS (10I0755-	-BS1)								Ext	racted:	09/24/10 12	2:15			
Acenaphthene		1311-2/8270	8.33		0.400	ug/l	1x		10.0	83.3%	(26-135)			09/27/10 18:10	
Benzo (a) pyrene		m "	8.16		0.400	,,	,,		,,	81.6%	(38-137)			"	
Pyrene		"	8.11		0.400	,,			"	81.1%	(33-133)				
	EI IIO					25.12	50/ "			01.170	(55 155)			00/27/10 10 10	
Surrogate(s):	Fluorene-d10 Pyrene-d10		Recovery:	79.8% 80.5%	L	imits: 25-12 23-1.	3/0							09/27/10 18:10	
	Benzo (a) pyrene-d12			80.5% 81.7%		23-1. 10-1.								"	
	Benzo (a) pyrene u12			01.770		10 12	2370								
Matrix Spike ((10I0755-MS1)				QC Source	e: PTH048	7-01		Ext	racted:	09/24/10 12	2:15			
Acenaphthene		1311-2/8270	210		8.00	ug/l	20x	181	10.0	285%	(26-135)			09/27/10 18:40	MHA
Benzo (a) pyrene		m "	ND		8.00	,,		ND	"	NR	(38-137)			"	M4
Pyrene		"	56.2		8.00	"		47.8	"	83.3%	(33-133)			"	
	Elizana din					imita. 35 13	15% "			55.570	(55 155)			00/27/10 10:40	
Surrogate(s):	Fluorene-d10 Pyrene-d10		Recovery:	87.2% 80.7%	L	imits: 25-12 23-1.	570							09/27/10 18:40	
	Benzo (a) pyrene-d12			72.9%		10-12								"	

TestAmerica Portland

Estella K. Rieben

Amended Report

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Amended Report

Golder Associates - Canada

500-4260 Still Creek Drive

Burnaby, BC/CAN V5C6C6

Project Name:

Stock Pile WP/YR

Project Number: Project Manager: 96-1412-853B Erin Liebrecht Report Created: 10/04/10 15:17

Percent Dry Weight (Solids) per ASTM D2216-80 - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 10H0554	Soil Pre	paration Metl	od: Dry	Weight										
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	°% RPD ((Limits)	Analyzed	Notes
Duplicate (10H0554-DUP1)				QC Source:	PTH0464-01			Extra	acted:	08/17/10 1	9:00			
% Solids	ASTM D2216-80	91.2		0.0100 %	by Weight	1x	93.2				2.20%	(20)	08/19/10 09:50	
Duplicate (10H0554-DUP2)				QC Source:	PTH0464-02			Extra	acted:	08/17/10 1	9:00			
% Solids	ASTM D2216-80	92.4		0.0100 %	by Weight	1x	92.4				0.0163%	(20)	08/19/10 09:50	

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Amended Report

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Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Project Number: 96-1412-853B Report Created: Burnaby, BC/CAN V5C6C6 Project Manager: Erin Liebrecht 10/04/10 15:17

Notes and Definitions

Report Specific Notes:

B1 - Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.

H4 - Sample was extracted past holding time, but analyzed within analysis holding time.

M4 - The sample required a dilution due to matrix interference. Because of this dilution, the matrix spike concentrations in the sample were reduced to a level where the recovery calculation does not provide useful information. See Blank Spike (LCS).

MHA - Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).

N1 - See case narrative.

Q1 - Does not match typical pattern

Q9 - Hydrocarbon pattern most closely resembles creosote or similar product.

QP - Hydrocarbon result partly due to individual peak(s) in quantitation range.

R2 - The RPD exceeded the acceptance limit.

The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

ZX - Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.

<u>Laboratory Reporting Conventions:</u>

DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.

ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR/NA Not Reported / Not Available

dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.

Wet Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.

RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).

MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.

MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B.
 *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.

 Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.

Reporting - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

- Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*.

Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Portland

Electronic

Signature

Estella K Rieben

Amended Report

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory

CERTIFICATION SUMMARY

TestAmerica Portland

Method	Matrix	Alaska
1311-2/8270m	Other dry	
1312/AK102	Other dry	
AK101/8021B	Other dry	X
AK102	Other dry	X
ASTM D2216-80	Other dry	
EPA 1312	Other dry	
EPA 8270m	Other dry	

TestAmerica Portland

Estella K Rieben

Amended Report

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.

Fax 867 - 633 - 60787 Client Name Golder Associates. Client Contact Evin Liebrecht Phone 867 - 334 - 7673 Liebrecht Address 2018 170 Titonium Way V/A 06/

S.W Ship to TEST America INC Bowletter, 02 97008 of 405 Nimbus Ave.

Golder Associates 044041

5148

500 - 4260 Still Creek Drive Burnaby, B.C. Canada V5C 6C6 Tel: 604-296-4200 Fax: 604-298-5253 www.golder.com

Shipping Date Aug 15, 200

Auvi)

Attn. Darrell

Sampled by 4.

Whitehorse (anada

4	Sample Notes (preserved, saltwater, freshwater, may contain sewage)	0-0.025 m			ATATA ATATA		A re-				D				ed by: Date:	Ine:	Courier Name:	ed by: Date:	лиу: Ттме:
	HOP	×		×	×		×	X		×	X				3) Released by:	Company:	Courie	3) Received by:	Company:
Test(s) Requested	080 GR0	ž.	7			7			>			On Tre	}						
က	by Code		7			7			>			ctions			Date:	Time:		Date:	Time:
οί	Number of Sample Containers × Volume Sample Containers (1 × 20L) Sample Container TY	2×902 GT									→ →	Comments/Instructions		.					
роч	Sample Collection Met	ত	·		, , , , , ,						<u> </u>				by:	<u>;</u>	Vame:	l by:	ÿ
~	Type of Each Sampl Material Safety Data SI (V)	Voo D CHIP)		N		447 °					,		-	2) Released	Company:	Courier Name:	Received	Company:
	Sample Identification		5148-2	5148-3	5148-4	5140-5	5149-6	5148-7	5148 -8	5148-9	5148-10	353B	UP/4R	n-z	Sate: Pug 15, 7010 2)	тіте: //://am		ABRE S//U//Q LAY/Received	Time: 1500 00
		5148-	514	514	514	814	514	5148	5148	514	514	96-1412-8538			Liste	ia tes	apelstyrak	The same of the sa	,
1	Time (24-h clock)	16:46	e ^r						•	9.05	>		Stack Pile	3y	Liebach	Companyfolder Associa tes	L	hobert	T
-	Collection Date (DD/MMM/YYYYY)	13/08/2010							>	14/08/2010		PO/Reference No	Project Title	Results Needed By.	1) Released by: E. Liebrecht Lie	Company	Courier Name: MINGS	1) Received by:	Company:

I For composite effluent or water samples, the sample collection date/time is the end of the compositing period.

Receiving Water (RW): Effluent (E); Elutriate (ELU);.Sediment (SED); Chemical (CHEM); Stormwater (SW); Other (Please Specify)

3 Collapsible Carboy (CC); glass jar (GJ); Jerry Can (JC); Plastic HDPE (P); Other (Please Specify) 4 Please note any conditions the lab should be aware of for safety and storage concerns

Please see instructions for completion on back of form

Distribution of copies:

White-returned to consignor by consignee Yellow-kept by consignee (e.g. receiver) White, Yellow—accompany the shipment Pink—kept by consignor (e.g. shipper)

Revision Date: March 20, 2009

TestAmerica Portland

Sample Receiving Checklist

Work Order #: PTH0490, Date/Time Received: 8/14/10 1500 Client Name and Project: Colder White Passes
Time Zone: DEDT/EST DEDT/CST MDT/MST PDT/PST AK OTHER
Unpacking Checks: Cooler #(s): /
N/A Yes No Initials: 15
1. If ESI client, were temp blanks received? If no, document on NOD.
2. Cooler Seals intact? (N/A if hand delivered) if no, document on NOD
3. Chain of Custody present? If no, document on NOD.
4. Bottles received intact? If no, document on NOD.
5. Sample is not multiphasic? If no, document on NOD.
6. Proper Container and preservatives used? If no, document on NOD.
7. pH of all samples checked and meet requirements? If no, document on NOD.
8. Cyanide samples checked for sulfides and meet requirements? If no, notify PM.
9. HF Dilution required?
10. Sufficient volume provided for all analysis? If no, document on NOD and consult PM before proceeding. 11. Did chain of custody agree with samples received? If no, document on NOD.
12. Is the "Sampled by" section of the COC completed?
☐ ☐ 13. Were VOA/Oil Syringe samples without headspace?
☐ 14. Were VOA vials preserved? ☐HCl ☐Sodium Thiosulfate ☐Ascorbic Acid
15. Did samples require preservation with sodium thiosulfate?
☐ 16. If yes to #15, was the residual chlorine test negative? If no, document on NOD.
☐ ☐ 17. Are dissolved/field filtered metals bottles sediment-free? If no, document on NOD.
18. Is sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM before proceeding. 19. Are analyses with short holding times received in hold?
20. Was Standard Turn Around (TAT) requested?
21. Receipt date(s) < 48 hours past the collection date(s)? If no, notify PM.

TestAmerica Portland Sample Receiving Checklist

Work Order #: FTHO490

•			Oc.
Logi	in Ch	eck	Initials: P3
N/A	Yes	No	
	\square		22. Sufficient volume provided for all analysis? If no, document on NOD & contact PM.
			23. Sufficient volume provided for client requested MS/MSD or matrix duplicates? If
			no, document on NOD and contact PM.
			24. Did the chain of custody include "received by" and "relinquished by" signatures,
			dates and times?
			25. Were special log in instructions read and followed?
			26. Were tests logged checked against the COC?
\Box			27. Were rush notices printed and delivered?
			28. Were short hold notices printed and delivered?
Z			29. Were subcontract COCs printed?
			30. Was HF dilution logged?
Lah	eling	and	Storage Checks: Initials: PS
N/A	Yes	No	initials.
N/A	165	140	31. Were the subcontracted samples/containers put in Sx fridge?
			32. Were sample bottles and COC double checked for dissolved/filtered metals?
ليكل			·
			33. Did the sample ID, Date, and Time from label match what was logged?34. Were Foreign sample stickers affixed to each container and containers stored in
	LJ	L	
	г	r1	foreign fridge?
		/님	35. Were HF stickers affixed to each container, and containers stored in Sx fridge?
<u></u> □		Ш	36. Was an NOD for created for noted discrepancies and placed in folder?
_	ment a NOD)		oblems or discrepancies and the actions taken to resolve them on a Notice of Discrepancy



PORTLAND, OR 9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132

ph: (503) 906.9200 fax: (503) 906.9210

ORELAP#: OR100021

October 04, 2010

Amended Report

Erin Liebrecht Golder Associates - Canada 500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

RE: Stock Pile WP/YR

Enclosed are the results of analyses for samples received by the laboratory on 08/16/10 15:00. The following list is a summary of the Work Orders contained in this report, generated on 10/04/10 15:19.

If you have any questions concerning this report, please feel free to contact me.

Work Order	<u>Project</u>	<u>ProjectNumber</u>
PTH0492	Stock Pile WP/YR	96-1412-853B

TestAmerica Portland

Amended Report

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.



9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek DriveProject Number:96-1412-853BReport Created:Burnaby, BC/CAN V5C6C6Project Manager:Erin Liebrecht10/04/10 15:19

ANALYTICAL REPUBLICURS AND PLEAS	ANALVTICAL.	REPORT FOR SAMPLES
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Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
5151-5	PTH0492-05	Other dry	08/14/10 12:30	08/16/10 15:00
5151-6	PTH0492-06	Other dry	08/14/10 13:30	08/16/10 15:00
5151-7	PTH0492-07	Other dry	08/14/10 14:00	08/16/10 15:00
5151-8	PTH0492-08	Other dry	08/14/10 14:15	08/16/10 15:00

TestAmerica Portland

Estella K Rieben

Amended Report

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Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek DriveProject Number:96-1412-853BReport Created:Burnaby, BC/CAN V5C6C6Project Manager:Erin Liebrecht10/04/10 15:19

Analytical Case Narrative

TestAmerica - Portland, OR

PTH0492

10/4/10: Amended Report

This report includes additional analyses for SPLP 8270 SIM PAH and SPLP AK 102 (for Diesel) as requested by the client.

8/31/10:

The AK101 GRO/BTEX method requires soil/solid samples to be extracted into methanol within 48 hours of sampling. The samples requested for this analysis were not received by the lab as extracts. They were past the 48 hour time frame upon arrival. The samples were extracted by the lab. Due to the absorbant nature of the matrix (wood chips), 10 grams of sample was extracted into 50 mls of methanol with the appropriate surrogate.

TestAmerica Portland

28tlla K Kuben

Amended Report

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9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada Stock Pile WP/YR Project Name:

500-4260 Still Creek Drive Report Created: Project Number: 96-1412-853B Burnaby, BC/CAN V5C6C6 Project Manager: Erin Liebrecht 10/04/10 15:19

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0492-05	(5151-5)			Ot	her dry		Samp	oled: 08/14/	10 12:30		N1
Benzene		AK101/8021B	ND		0.237	mg/kg dry	1x	10H0547	08/17/10 15:00	08/18/10 21:35	
Toluene		"	ND		1.18	"	"	"	"	"	
Ethylbenzene		"	ND		1.18	"	"	"	"	"	
Xylenes (total)		"	ND		1.18	"	"	"	"	"	

Surrogate(s): a,a,a-TFT (PID) 50 - 150 %

PTH0492-06	(5151-6)			Ot	ther dry		Samp	led: 08/14/	10 13:30			N1
Benzene		AK101/8021B	ND		0.266	mg/kg dry	1x	10H0547	08/17/10 15:00	08/18/10 22:03		
Toluene		"	ND		1.33	"	"	"	"	"		
Ethylbenzene		"	ND		1.33	"	"	"	"	"		
Xylenes (total)		"	ND		1.33	"	"	"	"	"		
Surrogate(s):	a.a.a-TFT (PID)				107%		50 - 150 %	"			"	

PTH0492-07RE1 (5151-7) Other dry Sampled: 08/14/10 14:00 N1 08/17/10 15:00 **Gasoline Range Organics** AK101/8021B 131 103 mg/kg dry 2x10H0547 08/19/10 09:50 Q1 Benzene 0.516 RL3 ND RL3 Toluene 2.58 ND Ethylbenzene 2.58 RL3 ND 2.58 RL3 Xylenes (total) ND

a,a,a-TFT (FID) 116% 50 - 150 % Surrogate(s): a,a,a-TFT (PID) 112% 50 - 150 %

PTH0492-08 (5151-8)			O	ther dry		Samp	led: 08/14/	10 14:15			N1
Gasoline Range Organics	AK101/8021B	208		39.7	mg/kg dry	1x	10H0547	08/17/10 15:00	08/18/10 22:32	Q1	
Benzene	"	ND		0.198	"	"	"	"	"		
Toluene	"	ND		0.992	"	"	"	"	"		
Ethylbenzene	"	ND		0.992	"	"	"	"	"		
Xylenes (total)	"	ND		0.992	"	"	"	"	"		
Surrogate(s): a,a,a-TFT (1	FID)			111%		50 - 150 %	"			"	
a.a.a-TFT (PID)			105%		50 - 150 %	"			"	

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Surrogate(s): a,a,a-TFT (PID)

Amended Report

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Amended Report

Golder Associates - Canada

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Name: Stock Pile WP/YR

Project Number: 96-1412-853B
Project Manager: Erin Liebrecht

Report Created: 10/04/10 15:19

Gasoline Range Organics (C6-C10) per AK101

				TestAn	nerica Port	land						
Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed		Notes	
PTH0492-05 (5151-5)			Ot	her dry		Samp	led: 08/14/	10 12:30				N1
Gasoline Range Organics	AK101 GRO	ND		47.4	mg/kg dry	1x	10H0547	08/17/10 15:00	08/18/10 21:35			
Surrogate(s): a,a,a-TFT (FIL	D)			113%		50 - 150 %	"			"		
PTH0492-06 (5151-6)			Ot	her dry		Samp	led: 08/14/	10 13:30				N1
Gasoline Range Organics	AK101 GRO	327		53.2	mg/kg dry	1x	10H0547	08/17/10 15:00	08/18/10 22:03		Q1	
Surrogate(s): a,a,a-TFT (FIL	D)			111%		50 - 150 %	"			"		

TestAmerica Portland

EStella K Rieben

Amended Report

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Amended Report

Golder Associates - Canada

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

Stock Pile WP/YR Project Name:

96-1412-853B Project Number: Project Manager: Erin Liebrecht Report Created: 10/04/10 15:19

Diesel Range Organics (C10-C25) per AK102

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed		Notes
PTH0492-05	(5151-5)			Oth	er dry		Samp	led: 08/14/	10 12:30			
Diesel Range Orga	nics	AK102	4740		267	mg/kg dry	10x	10H0676	08/20/10 09:35	08/23/10 12:52		Q9
Surrogate(s):	1-Chlorooctadecane	?			367%		50 - 150 %	"			"	ZX
PTH0492-06	(5151-6)			Oth	er dry		Samp	led: 08/14/	10 13:30			
Diesel Range Orga	nics	AK102	6440		294	mg/kg dry	10x	10H0676	08/20/10 09:35	08/23/10 13:08		Q9
Surrogate(s):	1-Chlorooctadecane	?			294%		50 - 150 %	"			"	ZX
PTH0492-07	(5151-7)			Oth	er dry		Samp	led: 08/14/	10 14:00			
Diesel Range Orga	nics	AK102	76700		601	mg/kg dry	20x	10H0676	08/20/10 09:35	08/23/10 13:25		Q9
Surrogate(s):	1-Chlorooctadecane	?			NR		50 - 150 %	"			"	Z 3
PTH0492-08	(5151-8)			Oth	er dry		Samp	led: 08/14/	10 14:15			
Diesel Range Orga	nics	AK102	5480		237	mg/kg dry	10x	10H0676	08/20/10 09:35	08/23/10 13:42		Q9
Surrogate(s):	1-Chlorooctadecane	?			424%		50 - 150 %	"			"	ZX

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Amended Report

Golder Associates - Canada 500-4260 Still Creek Drive

Burnaby, BC/CAN V5C6C6

Project Name:

Stock Pile WP/YR

Project Number: 96-1412-853B
Project Manager: Erin Liebrecht

Report Created: 10/04/10 15:19

Diesel Range Organics (C10-C25) per AK102 on SPLP Extracted Sample

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0492-06 (5151-6)			Otl	ier dry		Samp	led: 08/14/	10 13:30		
Diesel Range Organics	1312/AK102	2.59		0.278	mg/l	1x	10I0878	09/29/10 11:00	09/30/10 19:03	RL4
Surrogate(s): 1-Chloroocta	decane			54.4%		50 - 150 %	"			"

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Estella K Rieben

Amended Report

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THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Project Manager: Erin Liebrecht Report Created: 10/04/10 15:19

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed		Notes
PTH0492-05 (5151-5)			Oth	ner dry		Samp	led: 08/14/	10 12:30			
Acenaphthene	EPA 8270m	68600		5370	ug/kg dry	50x	10H0676	08/20/10 09:35	08/24/10 15:48		
Acenaphthylene	"	ND		5370	"	"	"	"	"		
Anthracene	"	59800		5370	"	"	"	"	"		
Benzo (a) anthracene	"	33400		5370	"	"	"	"	"		
Benzo (a) pyrene	"	10300		5370	"	"	"	"	"		
Benzo (b) fluoranthene	"	13500		5370	"	"	"	"	"		
Benzo (ghi) perylene	"	ND		5370	"	"	"	"	"		
Benzo (k) fluoranthene	"	12200		5370	"	"	"	"	"		
Chrysene	"	37300		5370	"	"	"	"	"		
Dibenzo (a,h) anthracene	"	ND		5370	"	"	"	"	"		
Fluoranthene	"	176000		5370	"	"	"	"	"		
Fluorene	"	51300		5370	"	"	"	"	"		
Indeno (1,2,3-cd) pyrene	"	ND		5370	"	"	"	"	"		
Naphthalene	"	ND		5370	"	"	"	"	"		
Phenanthrene	"	168000		5370	"	"	"	"	"		
Pyrene	"	120000		5370	"	"	"	"	"		
Surrogate(s): Fluorene-d10				NR		24 - 125 %	"			"	Z3
Pyrene-d10				NR		41 - 141 %	"			"	Z 3
Benzo (a) pyre	ne-d12			NR		38 - 143 %	"			"	Z 3
PTH0492-06 (5151-6)			Oth	ner dry		Samp	led: 08/14/	10 13:30			

PTH0492-06 (5151-6)			Ot	her dry		Sam	pled: 08/14/	10 13:30	
Acenaphthene	EPA 8270m	54200		5910	ug/kg dry	50x	10H0676	08/20/10 09:35	08/24/10 16:20
Acenaphthylene	"	ND		5910	"	"	"	"	"
Anthracene	"	61100		5910	"	"	"	"	"
Benzo (a) anthracene	"	25300		5910	"	"	"	"	"
Benzo (a) pyrene	"	8190		5910	"	"	"	"	"
Benzo (b) fluoranthene	"	9820		5910	"	"	"	"	"
Benzo (ghi) perylene	"	ND		5910	"	"	"	"	"
Benzo (k) fluoranthene	"	9880		5910	"	"	"	"	"
Chrysene	"	29100		5910	"	"	"	"	"
Dibenzo (a,h) anthracene	"	ND		5910	"	"	"	"	"
Fluoranthene	"	132000		5910	"	"	"	"	"
Fluorene	"	54800		5910	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	"	ND		5910	"	"	"	"	"
Naphthalene	"	ND		5910	"	"	"	"	"
Phenanthrene	"	171000		5910	"	"	"	"	"

TestAmerica Portland

Estella K Rieben

Amended Report

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THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number:96-1412-853BReport Created:Project Manager:Erin Liebrecht10/04/10 15:19

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	1	Notes
PTH0492-06 (5151-6)			Ot	her dry		Samp	led: 08/14/	10 13:30			
Pyrene	EPA 8270m	95600		5910	ug/kg dry	50x	10H0676	08/20/10 09:35	08/24/10 16:20		
Surrogate(s): Fluorene-d10				NR		24 - 125 %	"			"	Z 3
Pyrene-d10				NR		41 - 141 %	"			"	Z 3
Benzo (a) pyreno	e-d12			NR		38 - 143 %	"			"	Z 3
PTH0492-07 (5151-7)			Ot	her dry		Samp	led: 08/14/	10 14:00			
Acenaphthene	EPA 8270m	3270000		242000	ug/kg dry	2000x	10H0676	08/20/10 09:35	08/26/10 20:26		
Acenaphthylene	"	62900		12100	"	100x	"	"	08/23/10 21:29		
Anthracene	"	1440000		242000	"	2000x	"	"	08/26/10 20:26		
Benzo (a) anthracene	"	705000		242000	"	"	"	"	"		
Benzo (a) pyrene	"	171000		12100	"	100x	"	"	08/23/10 21:29		
Benzo (b) fluoranthene	"	242000		12100	"	"	"	"	"		
Benzo (ghi) perylene	"	35500		12100	"	"	"	"	"		
Benzo (k) fluoranthene	"	205000		12100	"	"	"	"	"		
Chrysene	"	670000		242000	"	2000x	"	"	08/26/10 20:26		
Dibenzo (a,h) anthracene	"	17700		12100	"	100x	"	"	08/23/10 21:29		
Fluoranthene	"	4390000		242000	"	2000x	"	"	08/26/10 20:26		
Fluorene	"	3110000		242000	"	"	"	"	"		
Indeno (1,2,3-cd) pyrene	"	43800		12100	"	100x	"	"	08/23/10 21:29		
Naphthalene	"	110000		12100	"	"	"	"	"		
Phenanthrene	"	8810000		242000	"	2000x	"	"	08/26/10 20:26		
Pyrene	"	2650000		242000	"	"	"	"	"		
Surrogate(s): Fluorene-d10				NR		24 - 125 %	100x		08/23	3/10 21:29	Z 3
Pyrene-d10				NR		41 - 141 %	"			"	Z 3
Benzo (a) pyreno	e-d12			NR		38 - 143 %	"			"	Z 3
PTH0492-08 (5151-8)			Ot	her dry		Samp	led: 08/14/	10 14:15			
Acenaphthene	EPA 8270m	86500		9540	ug/kg dry	100x	10H0676	08/20/10 09:35	08/23/10 22:00		
Acenaphthylene	"	ND		9540	"	"	"	"	"		
Anthracene	"	86400		9540	"	"	"	"	"		
Benzo (a) anthracene	"	51200		9540	"	"	"	"	"		
Benzo (a) pyrene	"	15100		9540	"	"	"	"	"		
Benzo (b) fluoranthene	"	21200		9540	"	"	"	"	"		
Benzo (ghi) perylene	"	ND		9540	"	"	"	"	"		
Benzo (k) fluoranthene	"	17200		9540	"	"	"	"	"		
Chrysene	"	56900		9540	"	"	"	"	"		

TestAmerica Portland

Estella K Rieben

Amended Report

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Stock Pile WP/YR

96-1412-853B

Erin Liebrecht

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Project Name:

Golder Associates - Canada

500-4260 Still Creek Drive Project Number: Burnaby, BC/CAN V5C6C6 Project Manager:

Report Created: 10/04/10 15:19

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
PTH0492-08 (5151-8)			Otl	her dry		Samp	oled: 08/14/	10 14:15			
Dibenzo (a,h) anthracene	EPA 8270m	ND		9540	ug/kg dry	100x	10H0676	08/20/10 09:35	08/23/10 22:00		
Fluoranthene	"	284000		9540	"	"	"	"	"		
Fluorene	"	74500		9540	"	"	"	"	"		
Indeno (1,2,3-cd) pyrene	"	ND		9540	"	"	"	"	"		
Naphthalene	"	ND		9540	"	"	"	"	"		
Phenanthrene	"	267000		9540	"	"	"	"	"		
Pyrene	"	183000		9540	"	"	"	"	"		
Surrogate(s): Fluorene-d10				NR		24 - 125 %	"			" Z3	
Pyrene-d10				NR		41 - 141 %	"			" Z3	
Benzo (a) pyrene	:-d12			NR		38 - 143 %	"			" Z3	

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Amended Report

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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:19

Polynuclear Aromatic Compounds per EPA 8270M-SIM. TCLP/SPLP Extracted

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0492-06 (5151-6)			0	ther dry		Samp	oled: 08/14/	10 13:30		F
Acenaphthene	1311-2/8270m	95.1		4.00	ug/l	10x	1010755	09/24/10 12:15	09/27/10 21:43	
Acenaphthylene	"	2.06		0.800	"	2x	"	"	09/28/10 17:07	
Anthracene	"	7.93		0.800	"	"	"	"	"	
Benzo (a) anthracene	"	1.52		0.800	"	"	"	"	"	
Benzo (a) pyrene	"	ND		0.800	"	"	"	"	"	
Benzo (b) fluoranthene	"	ND		0.800	"	"	"	"	"	
Benzo (ghi) perylene	"	ND		0.800	"	"	"	"	"	
Benzo (k) fluoranthene	"	ND		0.800	"	"	"	"	"	
Chrysene	"	1.43		0.800	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	ND		0.800	"	"	"	"	"	
Fluoranthene	"	21.9		0.800	"	"	"	"	"	
Fluorene	"	47.8		0.800	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	ND		0.800	"	"	"	"	"	
Naphthalene	"	ND		0.800	"	"	"	"	"	
Phenanthrene	"	52.6		0.800	"	"	"	"	"	
Pyrene	"	12.3		0.800	"	"	"	"	"	
Surrogate(s): Fluoren	e-d10			82.5%		25 - 125 %	"			"
Pyrene-	d10			84.4%		23 - 150 %	"			"
Benzo (d	a) pyrene-d12			82.6%		10 - 125 %	"			"

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Amended Report

Golder Associates - Canada

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

Stock Pile WP/YR Project Name:

96-1412-853B Project Number: Project Manager: Erin Liebrecht Report Created: 10/04/10 15:19

Percent Dry Weight (Solids) per ASTM D2216-80

TestAmerica Portland

Analyte		Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTH0492-05	(5151-5)			Otl	ier dry		Sam	pled: 08/14/	10 12:30		
% Solids		ASTM D2216-80	46.2		0.0100	% by Weight	1x	10H0556	08/17/10 20:00	08/18/10 10:00	
PTH0492-06	(5151-6)			Otl	ner dry		Samj	pled: 08/14/	10 13:30		
% Solids		ASTM D2216-80	42.0		0.0100	% by Weight	1x	10Н0556	08/17/10 20:00	08/18/10 10:00	
PTH0492-07	(5151-7)			Otl	ier dry		Samj	pled: 08/14/	10 14:00		
% Solids		ASTM D2216-80	40.7		0.0100	% by Weight	1x	10Н0556	08/17/10 20:00	08/18/10 10:00	
PTH0492-08	(5151-8)			Otl	ier dry		Sam	pled: 08/14/	10 14:15		
% Solids		ASTM D2216-80	52.3		0.0100	% by Weight	1x	10H0556	08/17/10 20:00	08/18/10 10:00	

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Amended Report

Golder Associates - Canada 500-4260 Still Creek Drive

Burnaby, BC/CAN V5C6C6

Project Name:

Stock Pile WP/YR

Project Number: Project Manager: 96-1412-853B Erin Liebrecht Report Created: 10/04/10 15:19

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B - Laboratory Quality Control Results

QC Batch: 10H0547	Soil Pre	paration M	lethod: EPA	5035 M	odified									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (10H0547-BLK1)								Extr	acted:	08/17/10 13	:00			
Gasoline Range Organics	AK101/8021	ND		3.98	mg/kg wet	1x							08/18/10 16:58	
Benzene	B "	ND		0.0199	"	"							"	
Toluene	"	ND		0.0996	"	"							"	
Ethylbenzene	"	ND		0.0996	"	"							"	
Xylenes (total)	"	ND		0.0996	"	"							"	
Surrogate(s): a,a,a-TFT (FID) a,a,a-TFT (PID)		Recovery:	112% 108%	L	imits: 50-150% 50-150%	"							08/18/10 16:58	
LCS (10H0547-BS1)								Extr	acted:	08/17/10 13	:00			
Benzene	AK101/8021	1.05		0.0198	mg/kg wet	1x		0.992	106%	(70-130)			08/18/10 15:03	
Toluene	B "	1.02		0.0992	"			"	103%	"			"	
Ethylbenzene	"	1.08		0.0992	"	"		"	109%	"			"	
Xylenes (total)	"	3.16		0.0992	"	"		2.98	106%	"			"	
Surrogate(s): a,a,a-TFT (PID)		Recovery:	114%	L	imits: 50-150%	"							08/18/10 15:03	
LCS (10H0547-BS2)								Extr	acted:	08/17/10 13	:00			
Gasoline Range Organics	AK101/8021 B	25.6		3.98	mg/kg wet	1x		24.9	103%	(60-120)			08/18/10 16:01	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	111%	L	imits: 50-150%	"							08/18/10 16:01	
LCS Dup (10H0547-BSD1)								Extr	acted:	08/17/10 13	:00			
Benzene	AK101/8021 B	1.07		0.0196	mg/kg wet	1x		0.979	109%	(70-130)	1.73%	(20)	08/18/10 15:32	
Toluene	"	1.00		0.0979	"			"	102%	"	1.69%	"	"	
Ethylbenzene	"	1.06		0.0979	"	"		"	109%	"	1.51%	"	"	
Xylenes (total)	"	3.10		0.0979	"	"		2.94	106%	"	1.87%	"	"	
Surrogate(s): a,a,a-TFT (PID)		Recovery:	117%	L	imits: 50-150%	"							08/18/10 15:32	
LCS Dup (10H0547-BSD2)								Extr	acted:	08/17/10 13	:00			
Gasoline Range Organics	AK101/8021 B	26.4		3.97	mg/kg wet	1x		24.8	106%	(60-120)	3.26%	(20)	08/18/10 16:29	
Surrogate(s): a,a,a-TFT (FID)	D	Recovery:	115%	L	imits: 50-150%	"							08/18/10 16:29	
Duplicate (10H0547-DUP1)				QC Source	e: PTH0490-02	:		Extr	acted:	08/17/10 15	:00			N
Gasoline Range Organics	AK101/8021	232			mg/kg dry		235					(50)	08/18/10 19:11	(

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Surrogate(s): a,a,a-TFT (FID)

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Limits: 50-150% "

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Recovery: 114%

08/18/10 19:11



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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

Surrogate(s): a,a,a-TFT (PID)

Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:19

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B - Laboratory Quality Contr	ol Results
TestAmerica Portland	

QC Batch: 10H0547 Soil Preparation Method: EPA 5035 Modified

Recovery: 114%

QC Batch: 10110347	3011 110	paration N	iemou: Er F	1 3033 M	oumeu								
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	e % REC	(Limits)	RPD (Lin	nits) Analyzed	Notes
Duplicate (10H0547-DUP2)				QC Source	e: PTH0490-0)5		Ext	racted:	08/17/10 15	:00		N1
Gasoline Range Organics	AK101/8021 B	ND		32.4	mg/kg dry	1x	ND				3.72% (50)	08/18/10 23:01	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	114%	L	imits: 50-150%	6 "						08/18/10 23:01	
Matrix Spike (10H0547-MS1)				QC Source	e: PTH0490-0	08		Ext	racted:	08/17/10 15	:00		N1
Benzene	AK101/8021 B	8.95		0.188	mg/kg dry	1x	ND	8.65	103%	(50-150)		08/18/10 18:14	
Toluene	"	8.63		0.941	"	"	0.109	"	98.4%	"		"	
Ethylbenzene	"	9.06		0.941	"	"	ND	"	105%	"		"	
Xylenes (total)	"	26.9		0.941	"	"	ND	26.0	104%	"		"	
Surrogate(s): a,a,a-TFT (PID)		Recovery:	118%	L	imits: 50-150%	ó "						08/18/10 18:14	
Matrix Spike Dup (10H0547-M	ISD1)			QC Source	e: PTH0490-0	08		Ext	racted:	08/17/10 15	:00		N1
Benzene	AK101/8021 B	8.98		0.188	mg/kg dry	1x	ND	8.65	104%	(50-150)	0.378% (20)	08/18/10 18:43	
Toluene	"	8.68		0.941	"	"	0.109	"	99.0%	"	0.603% "	"	
Ethylbenzene	"	9.14		0.941	"	"	ND	"	106%	"	0.884% "	"	
Xylenes (total)	"	27.2		0.941	"	"	ND	26.0	105%	"	0.989% "	"	

Limits: 50-150%

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Estella Rieben, Project Manage

08/18/10 18:43



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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:19

	Gasoline R	ange Orga	nics (Co	6-C10) per A TestAmer	K101 - La ica Portland	abora	itory Qua	ality Co	ntrol	Results				
QC Batch: 10H0547	Soil Pre	paration M	ethod:	EPA 5035 M	odified									
Analyte	Method	Result	M	DL* MRI	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits) Analyzed	Notes
Blank (10H0547-BLK1)								Extra	icted:	08/17/10 13	3:00			
Gasoline Range Organics	AK101 GRO	ND		3.98	mg/kg wet	1x							08/18/10 16:58	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	112%	1	Limits: 50-150%	"							08/18/10 16:58	
LCS (10H0547-BS2)								Extra	icted:	08/17/10 13	3:00			
Gasoline Range Organics	AK101 GRO	25.6		3.98	mg/kg wet	1x		24.9	103%	(60-120)			08/18/10 16:01	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	111%	1	Limits: 60-120%	"							08/18/10 16:01	
LCS Dup (10H0547-BSD2)								Extra	icted:	08/17/10 13	3:00			
Gasoline Range Organics	AK101 GRO	26.4		3.97	mg/kg wet	1x		24.8	106%	(60-120)	3.26%	(20)	08/18/10 16:29	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	115%	1	Limits: 60-120%	"							08/18/10 16:29	
Duplicate (10H0547-DUP1)				QC Source	e: PTH0490-02	!		Extra	icted:	08/17/10 15	5:00			N1
Gasoline Range Organics	AK101 GRO	232		49.1	mg/kg dry	1x	235				1.40%	(50)	08/18/10 19:11	QP
Surrogate(s): a,a,a-TFT (FID)		Recovery:	114%	1	Limits: 50-150%	"							08/18/10 19:11	
Duplicate (10H0547-DUP2)				QC Source	e: PTH0490-05	;		Extra	icted:	08/17/10 15	5:00			N1
Gasoline Range Organics	AK101 GRO	ND		32.4	mg/kg dry	1x	ND				3.72%	(50)	08/18/10 23:01	
Surrogate(s): a,a,a-TFT (FID)		Recovery:	114%	1	Limits: 50-150%	"							08/18/10 23:01	

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Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR 96-1412-853B Project Number:

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6

Project Manager: Erin Liebrecht Report Created: 10/04/10 15:19

	Diesel Ra	ange Organ	ics (C10-C2	/ .	K102 - La	borat	ory Qual	lity Co	ntrol	Results				
QC Batch: 10H0676	Soil P	reparation M	Iethod: EPA	A 3550 Fu	els									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits	s) Analyzed	Notes
Blank (10H0676-BLK1)								Extr	acted:	08/20/10 09	:35			
Diesel Range Organics	AK102	ND		12.5	mg/kg wet	1x					-		08/20/10 16:00	
Surrogate(s): 1-Chlorooctadecane		Recovery:	90.1%	Li	mits: 50-150%	"							08/20/10 16:00	
LCS (10H0676-BS1)								Extr	acted:	08/20/10 09	:35			
Diesel Range Organics	AK102	132		12.5	mg/kg wet	1x		125	106%	(75-125)			08/20/10 15:43	
Surrogate(s): 1-Chlorooctadecane		Recovery:	88.7%	Li	mits: 60-120%	"							08/20/10 15:43	
Duplicate (10H0676-DUP1)				QC Source	e: PTH0487-0	1		Extr	acted:	08/20/10 09	:35			
Diesel Range Organics	AK102	14500		334	mg/kg dry	20x	15200				4.81%	(40)	08/20/10 16:14	Q9
Surrogate(s): 1-Chlorooctadecane		Recovery:	12000%	Li	mits: 50-150%	"							08/20/10 16:14	Z.
Duplicate (10H0676-DUP2)				QC Source	e: PTH0489-02	2		Extr	acted:	08/20/10 09	:35			
Diesel Range Organics	AK102	6010		225	mg/kg dry	10x	6090				1.31%	(40)	08/20/10 16:59	Q9
Surrogate(s): 1-Chlorooctadecane		Recovery:	1780%	Li	mits: 50-150%	"							08/20/10 16:59	Z

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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:
Project Manager: Erin Liebrecht 10/04/10 15:19

Diesel Ran	ge Organics (C10-C25)	•		Extracted a Portland	Sam	ple - La	borato	ry Qı	uality Co	ntrol	Result	s	
QC Batch: 10I0878	Other d	ry Prepara	tion Method:	EPA 13	12/3510									
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits) Analyzed	Notes
Blank (10I0878-BLK1)								Extr	acted:	09/29/10 11	:00			
Diesel Range Organics	1312/AK102	ND		0.250	mg/l	1x							09/30/10 16:26	
Surrogate(s): 1-Chlorooctadecane		Recovery:	85.5%	Lin	nits: 50-150%	"							09/30/10 16:26	
Blank (10I0878-BLK2)								Extr	acted:	09/29/10 11	:00			
Diesel Range Organics	1312/AK102	ND		0.240	mg/l	1x				-			09/30/10 16:44	
Surrogate(s): 1-Chlorooctadecane		Recovery:	79.0%	Lin	nits: 50-150%	"							09/30/10 16:44	
LCS (10I0878-BS1)								Extr	acted:	09/29/10 11	:00			
Diesel Range Organics	1312/AK102	2.10		0.250	mg/l	1x		2.50	83.9%	(75-125)			09/30/10 17:01	
Surrogate(s): 1-Chlorooctadecane		Recovery:	81.4%	Lin	nits: 50-150%	"							09/30/10 17:01	
LCS Dup (10I0878-BSD1)								Extr	acted:	09/29/10 11	:00			
Diesel Range Organics	1312/AK102	2.01		0.250	mg/l	1x		2.50	80.6%	(75-125)	4.02%	6 (20)	09/30/10 17:19	
Surrogate(s): 1-Chlorooctadecane		Recovery:	82.8%	Lin	nits: 50-150%	"							09/30/10 17:19	

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Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek DriveProject Number:96-1412-853BReport Created:Burnaby, BC/CAN V5C6C6Project Manager:Erin Liebrecht10/04/10 15:19

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM - Laboratory Quality Control Results TestAmerica Portland

QC Batch: 10H0676 Soil Preparation Method: EPA 3550 Fuels

QC Batch: 10H00/0		paration iv		3330 Ft										
Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (10H0676-BLK1)								Ext	racted:	08/20/10 09	9:35			
Acenaphthene	EPA 8270m	197		50.2	ug/kg wet	1x							08/23/10 15:04	В1
Acenaphthylene	"	ND		50.2	"	"							"	
Anthracene	"	ND		50.2	"	"							"	
Benzo (a) anthracene	"	ND		50.2	"	"							"	
Benzo (a) pyrene	"	ND		50.2	"	"							"	
Benzo (b) fluoranthene	"	ND		50.2	"	"							"	
Benzo (ghi) perylene	"	ND		50.2	"	"							"	
Benzo (k) fluoranthene	"	ND		50.2	"	"							"	
Chrysene	"	ND		50.2	"	"							"	
Dibenzo (a,h) anthracene	"	ND		50.2	"	"							"	
Fluoranthene	"	ND		50.2	"	"							"	
Fluorene	"	83.3		50.2	"	"							"	В1
Indeno (1,2,3-cd) pyrene	"	ND		50.2	"	"							"	
Naphthalene	"	ND		50.2	"	"							"	
Phenanthrene	"	ND		50.2	"	"							•	В1
Pyrene	"	ND		50.2	"	"							"	
Surrogate(s): Fluorene-d10		Recovery:	66.6%	I	imits: 24-125	% "							08/23/10 15:04	
Pyrene-d10			92.0%		41-14	1% "							"	
Benzo (a) pyrene-d12			82.6%		38-14	3% "							"	
LCS (10H0676-BS2)								Ext	racted:	08/20/10 09	9:35			
Acenaphthene	EPA 8270m	269		50.2	ug/kg wet	1x		250	108%	(33-139)			08/23/10 14:33	
Benzo (a) pyrene	"	256		50.2	"	"		"	103%	(45-149)			"	
Pyrene	"	266		50.2	"	"		"	107%	(39-138)			"	
Surrogate(s): Fluorene-d10		Recovery:	91.0%	I	imits: 24-125	% "							08/23/10 14:33	
Pyrene-d10		,	102%		41-14								"	
Benzo (a) pyrene-d12			99.0%		38-14	3% "							"	
Duplicate (10H0676-DUP1)				QC Source	e: PTH0487	-01		Ext	racted:	08/20/10 09	9:35			
Acenaphthene	EPA 8270m	278000		6710	ug/kg dry	100x	274000					6 (40)	08/24/10 16:52	
Acenaphthylene	"	7060		6710	"	"	6780				4.02%		"	
Anthracene	,,	274000		6710	"	"	316000				14.29			
Benzo (a) anthracene	,,	138000		6710	"	"	140000				0.8629			
Benzo (a) pyrene	"	38100		6710	"	,,	41000				7.22%		"	
Benzo (b) fluoranthene	,,	51100		6710	"		55100				7.50%		"	
Benzo (ghi) perylene	"	9720		6710	"	,,	10300				5.50%		"	
Benzo (k) fluoranthene	,,	47300		6710	"	"	48600				2.83%		,,	
Chrysene	,,	147000		6710	"	"	147000				0.5829		,,	
Dibenzo (a,h) anthracene	"	ND		6710	,,		ND				14.3%		,,	
Fluoranthene	"	892000		67100	,,	1000x	871000				2.36%		08/24/10 17:23	
1 Idofaitheile		072000		0/100		10001	0/1000				2.507	U	00/47/10 17.43	

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Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B
Project Manager: Erin Liebrecht

Report Created: 10/04/10 15:19

Polynuclear Aromatic Hydrocarbon Screen (Semi-Quantitative) by EPA 8270SIM - Laboratory Quality Control Results TestAmerica Portland

OC Batch:	10H0676	Soil Preparation Method:	EPA 3550 Fuels
QC Daten.	10110070	Son i reparation Method:	LI II DOOD I WEIS

Analyte		Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits) Analyzed	Notes
Duplicate (10H067	76-DUP1)				QC Source	: PTH0487-01	Į.		Extr	acted:	08/20/10 09	:35			
Fluorene		"	408000		67100	"	"	385000				5.81%	"	"	
Indeno (1,2,3-cd) pyrene		"	10600		6710	"	100x	10700				0.783%	. "	08/24/10 16:52	
Naphthalene		"	11300		6710	"		8800				25.3%	"	"	
Phenanthrene		"	1480000		67100	"	1000x	1190000				21.3%	"	08/24/10 17:23	
Pyrene		"	571000		67100	"	"	549000				4.08%	"	"	
Surrogate(s): Fluo	orene-d10		Recovery:	NR	Li	mits: 24-125%	100x							08/24/10 16:52	Z3
Pyre	ene-d10			NR		41-141%	, "							"	Z3
Ben	zo (a) pyrene-d12			NR		38-143%	, "							"	Z3
Duplicate (10H067	76-DUP2)				QC Source	e: PTH0489-02	2		Extr	acted:	08/20/10 09	:35			
Acenaphthene	•	EPA 8270m	92400		9040	ug/kg dry	100x	120000				25.9%	(40)	08/24/10 17:55	
Acenaphthylene		"	ND		9040	"	"	ND				NR	"	"	
Anthracene		"	58400		9040	"	"	61300				4.77%	"	"	
Benzo (a) anthracene		"	29700		9040	"	"	45200				41.3%	"	"	R2
Benzo (a) pyrene		"	ND		9040	"	"	13000				37.1%	"	"	
Benzo (b) fluoranthene		"	11300		9040	"	"	17700				44.3%	"	"	R2
Benzo (ghi) perylene		"	ND		9040	"		ND				25.2%	"	"	
Benzo (k) fluoranthene		"	10300		9040	"	"	14000				30.8%	"	"	
Chrysene		"	33400		9040	"	"	45500				30.6%	"	"	
Dibenzo (a,h) anthracene		"	ND		9040	"	"	ND				NR	"	"	
Fluoranthene		"	163000		9040	"	"	278000				52.2%	"	"	R2
Fluorene		"	70700		9040	"	"	106000				40.0%	"	"	
Indeno (1,2,3-cd) pyrene		"	ND		9040	"	"	ND				36.1%	"	"	
Naphthalene		"	ND		9040	"	"	ND				NR	"	"	
Phenanthrene		"	209000		9040	"	"	360000				53.1%	"	"	R2
Pyrene		"	110000		9040	"	"	163000				39.0%	"	"	
Surrogate(s): Fluo	orene-d10		Recovery:	NR	Li	mits: 24-125%	"							08/24/10 17:55	Z3
	ene-d10			NR		41-141%								"	Z3
Ben.	zo (a) pyrene-d12			NR		38-143%	"							"	Z3

TestAmerica Portland

Estella K Rieben

Amended Report

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THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR

9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name:

Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Project Manager: Erin Liebrecht Report Created: 10/04/10 15:19

Polynuclear Aromatic Compounds per EPA 8270M-SIM. TCLP/SPLP Extracted - Laboratory Quality Control Results

TestAmerica Portland

QC Batcl	n: 10I0755	Water I	Preparation	Method: 35	520B Liq-	Liq									
Analyte		Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (10I075	5-BLK1)								Extr	acted:	09/24/10 12	:15			
Acenaphthene		1311-2/8270	ND		0.400	ug/l	1x						(09/27/10 17:39	
Acenaphthylene		m "	ND		0.400	,,	"							,	
Anthracene		,,	ND		0.400	"	,,								
Benzo (a) anthracene	:	,,	ND		0.400	"	"								
Benzo (a) pyrene		,,	ND		0.400	"	,,							"	
Benzo (b) fluoranthe	ne	,,	ND		0.400	"	,,								
Benzo (ghi) perylene		,,	ND		0.400	"	,,							"	
Benzo (k) fluoranthe		,,	ND		0.400	"	"								
Chrysene		,,	ND		0.400	"	,,							"	
Dibenzo (a,h) anthra	cene	,,	ND		0.400	"	"								
Fluoranthene		"	ND		0.400	"	"							"	
Fluorene		"	ND		0.400	"	"							"	
Indeno (1,2,3-cd) pyr	ene	"	ND		0.400	"	"							"	
Naphthalene		"	ND		0.400	"	"							"	
Phenanthrene		"	ND		0.400	"	"							"	
Pyrene		"	ND		0.400	"	"							"	
Surrogate(s):	Fluorene-d10		Recovery:	81.3%	Lii	nits: 25-1259	6 "							09/27/10 17:39	
3(.)	Pyrene-d10			85.3%		23-150								"	
	Benzo (a) pyrene-d12			83.0%		10-125	% "							"	
LCS (1010755	-R\$1)								Extr	acted:	09/24/10 12	:15			
Acenaphthene	-051)	1311-2/8270	8.33		0.400	ug/l	1x		10.0	83.3%			(09/27/10 18:10	
-		m													
Benzo (a) pyrene		"	8.16		0.400	"	"		"	81.6%	,			"	
Pyrene		"	8.11		0.400	"	"		"	81.1%	(33-133)			"	
Surrogate(s):	Fluorene-d10		Recovery:	79.8%	Lin	nits: 25-125%								09/27/10 18:10	
	Pyrene-d10			80.5%		23-150								"	
	Benzo (a) pyrene-d12			81.7%		10-125	% "							"	
Matrix Spike	(10I0755-MS1)				QC Source:	PTH0487-	01		Extr	acted:	09/24/10 12	:15			
Acenaphthene		1311-2/8270	210		8.00	ug/l	20x	181	10.0	285%	(26-135)		(09/27/10 18:40	МН
Benzo (a) pyrene		m "	ND		8.00	"	,,	ND	,,	NR	(38-137)			"	N
Pyrene		"	56.2		8.00	"	,,	47.8	"	83.3%				"	14
Surrogate(s):	Fluorene-d10		Recovery:	87.2%		nits: 25-125%	6 "				(== ===)			09/27/10 18:40	
surroguie(s):	Pyrene-d10		necovery:	80.7%	Lii	nus: 23-1257 23-150	0							09/2//10 18:40 "	
	Benzo (a) pyrene-d12			72.9%		10-125								"	

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Estella K. Rieben

Amended Report

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9405 S.W. NIMBUS AVENUE BEAVERTON, OR 97008-7132 ph: (503) 906.9200 fax: (503) 906.9210

Amended Report

Golder Associates - Canada

Project Name: Stock Pile WP/YR

500-4260 Still Creek Drive Burnaby, BC/CAN V5C6C6 Project Number: 96-1412-853B Report Created:

Project Manager: Erin Liebrecht 10/04/10 15:19

	Percent Dry	Weight (Soli		STM D2216-80 - TestAmerica Portland	Labor	atory Qu	uality Control F	Results		
QC Batch: 10H0556	Soil Prep	oaration Meth	od: Dry	Weight						
Analyte	Method	Result	MDL*	MRL Units	Dil	Source Result	Spike % (Li Amt REC	mits) % (Limi	ts) Analyzed	Notes
Duplicate (10H0556-DUP1)				QC Source: PTH0432-0	1		Extracted: 08/1	7/10 20:00		
% Solids	ASTM D2216-80	78.4		0.0100 % by Weight	1x	79.2		0.954% (20)	08/18/10 10:00	
Duplicate (10H0556-DUP2)				QC Source: PTH0432-0	2		Extracted: 08/1	7/10 20:00		
% Solids	ASTM D2216-80	79.3		0.0100 % by Weight	1x	79.3		0.0535% (20)	08/18/10 10:00	

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Amended Report

Golder Associates - Canada Project Name: Stock Pile WP/YR

500-4260 Still Creek DriveProject Number:96-1412-853BReport Created:Burnaby, BC/CAN V5C6C6Project Manager:Erin Liebrecht10/04/10 15:19

Notes and Definitions

Report Specific Notes:

B1 - Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.

H4 - Sample was extracted past holding time, but analyzed within analysis holding time.

M4 - The sample required a dilution due to matrix interference. Because of this dilution, the matrix spike concentrations in the sample were reduced to a level where the recovery calculation does not provide useful information. See Blank Spike (LCS).

MHA - Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).

N1 - See case narrative.

Q1 - Does not match typical pattern

Q9 - Hydrocarbon pattern most closely resembles creosote or similar product.

QP - Hydrocarbon result partly due to individual peak(s) in quantitation range.

R2 - The RPD exceeded the acceptance limit.

RL3 - Reporting limit raised due to high concentrations of non-target analytes.

RL4 - Reporting limit raised due to insufficient sample volume.

The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

ZX - Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.

Laboratory Reporting Conventions:

DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.

ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR/NA _ Not Reported / Not Available

dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.

wet Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.

RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).

MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.

MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.

 Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.

Reporting - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

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Amended Report

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Burnaby, BC/CAN V5C6C6 Project Manager: Erin Liebrecht 10/04/10 15:19

Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*.

Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Portland

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CERTIFICATION SUMMARY

TestAmerica Portland

Method	Matrix	Alaska	
1311-2/8270m	Other dry		
1312/AK102	Other dry		
AK101 GRO	Other dry	X	
AK101/8021B	Other dry	X	
AK102	Other dry	X	
ASTM D2216-80	Other dry		
EPA 1312	Other dry		
EPA 8270m	Other dry		

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Amended Report

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Phone 807 - 4334 - 7673 Client Contact Frin Lebreck+ Fax 867 - 633 - 6077 Sampled by Eliebrecht Address 2018 (To Titanium Way Whitehorse, YT YIA OG! Client Name Golder Associates Canada

Ship to TEST AMERICA INC. 940 5 Nimbus Ave. Baverton

Tel: 604-296-4200 Fax: 604-298-5253 www.golder.com

500 - 4260 Still Creek Drive NL 5151 Canada V5C 6C6 Burnaby, B.C. Golder Associates

15,2010	,	
Shipping Date 120	â ::	

1221

Attn. Davvell

4	Sample Notes (preserved, saltwater, freshwater, may contain sewage)	0-0.25m									*				ed by: Date:	лу: Пте:	Courier Name:	ed by: Date:	ny: Time:
	Chot	×	×	×	\times										3) Released by:	Company:	Courie	3) Received by:	Company:
Test(s) Requested	DRO						7	>	7			ON ICC							
	SIEX			-		7	7	>	7						Date:	Time:		Date:	Time:
ო მმ	Sample Container Typ	97							>			struction							
ło	Number of Sample Containers × Volume Sample Containers (1 × 20L)	2×90z							~			Comments/Instructions						-	
pou	Sample Collection Metl G=grab C=composit	Z							\rightarrow								ne:		
jeet	Asterial Safety Data SI (♥)														sased by:	Company:	Courier Name:	eived by:	Company:
7	Type of Each Sample	CHILD					*1		\				-		2) Released	Co	Cor	2) Received	
•	Sample Identification	1-1515	5151-2	5151-3	5151-4	5/21-5	9-1515	£-1519	8-1515	6-1515	2121-10	14/2-8533	Pile MP/YR		Fish Dayof Aug 15,200	icia tes, Time: 11:11am	Goldstreak	12 10 10 10 g	1 ed Time: 1500
-	Time (24-h clock)	12:30	_			>	1:30	2:00	21:20EC			- 96	Stock	-_\	Liebrech+	Ider Asso	, WINGS	Mary	Pagy Silver
Collection Date (DD/MMM/YYYY)		14/06/2010			·		>	14/08/2010 2:00	OK () 80/41			PO/Reference No.	Project Title	Results Needed By	1) Released by: E-Liebreck+	Company: Golder Associa tes	Courier Name: , MINGS	1) Received by:	Company:

1 For composite effluent or water samples, the sample collection date/time is the end of the compositing period.

2 Receiving Water (RW): Effluent (E); Elutriate (ELU); Sediment (SED); Chemical (CHEM); Stormwater (SW); Other (Please Specify)

3 Collapsible Carboy (CC); glass jar (GJ); Jerry Can (JC); Plastic HDPE (P); Other (Please Specify) 4 Please note any conditions the lab should be aware of for safety and storage concerns

Distribution of copies:

Yellow—kept by consignee (e.g. receiver) White—returned to consignor by consignee White, Yellow—accompany the shipment Pink—kept by consignor (e.g. shipper)

TestAmerica Portland

Sample Receiving Checklist

Work Order #: PTHO492, Date/Time Received: 8/14/0/SCC Client Name and Project: Colder white Pass
Time Zone: CDT/CST
Unpacking Checks: Cooler #(s):
N/A Yes No Initials:
1. If ESI client, were temp blanks received? If no, document on NOD.
2. Cooler Seals intact? (N/A if hand delivered) if no, document on NOD.
☐ ☐ 3. Chain of Custody present? If no, document on NOD.
4. Bottles received intact? If no, document on NOD.
5. Sample is not multiphasic? If no, document on NOD.
☐ 6. Proper Container and preservatives used? If no, document on NOD.
7. pH of all samples checked and meet requirements? If no, document on NOD.
8. Cyanide samples checked for sulfides and meet requirements? If no, notify PM.
9. HF Dilution required?
10. Sufficient volume provided for all analysis? If no, document on NOD and consult PM before proceeding. 11. Did chain of custody agree with samples received? If no, document on NOD.
☐ 12. Is the "Sampled by" section of the COC completed?
☐ ☐ 13. Were VOA/Oil Syringe samples without headspace?
☐ 14. Were VOA vials preserved? ☐HCl ☐Sodium Thiosulfate ☐Ascorbic Acid
15. Did samples require preservation with sodium thiosulfate?
☐ ☐ 16. If yes to #15, was the residual chlorine test negative? If no, document on NOD.
17. Are dissolved/field filtered metals bottles sediment-free? If no, document on NOD.
18. Is sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM before proceeding. 19. Are analyses with short holding times received in hold?
20. Was Standard Turn Around (TAT) requested?
21. Receipt date(s) < 48 hours past the collection date(s)? If no, notify PM.

TestAmerica Portland Sample Receiving Checklist

Work Order #: <u>PTH0492</u>

Logi	in Che	ecks	: Initials: P5
N/A	Yes	No	
			22. Sufficient volume provided for all analysis? If no, document on NOD & contact PM
			23. Sufficient volume provided for client requested MS/MSD or matrix duplicates? If
			no, document on NOD and contact PM.
			24. Did the chain of custody include "received by" and "relinquished by" signatures,
			dates and times?
			25. Were special log in instructions read and followed?
			26. Were tests logged checked against the COC?
			27. Were rush notices printed and delivered?
			28. Were short hold notices printed and delivered?
			29. Were subcontract COCs printed?
			30. Was HF dilution logged?
Lab	eling :	 and	Storage Checks: Initials: 15
N/A	Yes	No	
			31. Were the subcontracted samples/containers put in Sx fridge?
			32. Were sample bottles and COC double checked for dissolved/filtered metals?
	Z		33. Did the sample ID, Date, and Time from label match what was logged?
			34. Were Foreign sample stickers affixed to each container and containers stored in
			foreign fridge?
4			35. Were HF stickers affixed to each container, and containers stored in Sx fridge?
			36. Was an NOD for created for noted discrepancies and placed in folder?
	ment a		roblems or discrepancies and the actions taken to resolve them on a Notice of Discrepancy