chilkat environmental

Box 865 Haines, AK 99827 (907) 766-3897 chilkat@chilkatenvironmental.com

9/28/2010

Bruce Wanstall, Project Manager
State of Alaska, Alaska Department of Environmental Conservation
Division of Spill Prevention and Response, Contaminated Sites Program
410 Willoughby Ave, Suite 303
PO Box 111800
Juneau, AK 99801

Re: ADEC File 1508.38.009: Chilkoot Lumber Company, Haines: Characterization of Soil at the Extent of Excavation for the Former Powerhouse Shop and AST site

Mr. Bruce Wanstall,

Chilkat Environmental authored this memo to present contamination levels of soil at the extent of excavation for the former powerhouse shop and AST site at Chilkoot Lumber Company site in Lutak Inlet near Haines, AK. The sampling plan for this activity is attached to this memo. Excavation was conducted summer of 2009 and has remained open. Customarily characterization would include collection of samples from the floor and walls of the excavation. This sampling event only sampled the wall because the floor featured an intact native clay layer which has been traced from the adjacent generator shop floor excavation and found by laboratory sampling and screening to satisfy clean-up standards. Further, the excavation floor is saturated with water preventing collection of representative samples due to inference in soil testing methods imposed by saturation. The excavation includes an estimated 1500 square foot floor and 230 linear feet of average 7 foot headwalls. Prior to the sampling event an estimated 4 feet of water was pumped out of the excavation into a pond constructed of wood chips where it percolated out to the ocean. No sheening was evident in the undisturbed water. Three general photos are included to better describe the excavation.

Screening samples were collected for heated PID headspace analyses, hot water sheen and odor every 10 feet of headwall with attention to characterization of distinct horizons of the smear zone. Laboratory samples were collected every 20 feet of headwall at the locations that presented the most significant screening results. Soil samples were analyzed at the Laboratory for AK 101 GRO and for AK 102 DRO. Soil samples for AK 101 GRO were collected using methanol preparation and the sample volume was determined using a digital scale in the field

and tare weighted jars with methanol added to jars by Laboratory. The DRO samples were collected in 4 oz. soil jars with no preservative. Fourteen soil samples and one duplicate were collected. Samples were labeled clockwise by their distance in 20 foot increments from the corner of the boiler pad most adjacent the road.

Samples include; 20, 40, 60, 80, 100-2, 100-3, 100-4, 120, 140, 160, 180, 200, 220 and 230 with a duplicate for sample 230. Samples 20 and 230 characterize soil beneath the double concrete pad of the former multistory boiler building. The soil at this location is an estimated 3 feet deep and extends under the pad. All other samples were collected from the spear zone where contamination dispersed at the boundary of the AST source. These samples were collected from varied depths. See Figure 1. Samples 100-2, 100-3, 100-4 were collected to demonstrate the vertical distribution of the contamination present at the extent of excavation. Samples 100-2 and 100-4 were collected above and below the estimated 10 inch horizon of contaminated soil. The sampling plan, laboratory report, and data quality checklist are attached to this memo. Results are presented in Figure 1.

Sample	PID	Depth	GRO	flag	DRO	flag	Notes:
20	667	32”	140		**1800**		4 horizontal ft into wall.
40	182	48”	38		**320**		
60	400	48”	<2		**760**	x	Not Diesel Match. RRO overlap
80	104	32”	13		**990**	x	Not Diesel Match. RRO overlap
100-2	140	24”	<2		<10		
100-3	980	36”	**450**	ip	**1600**	ip	Failed Surr. Rec. Matrix interference
100-4	390	48”	81		130		
120	154	36”	48		**470**		
140	400	36”	31		**500**		
160	22.5	36”	2.4		31		
180	8.2	48”	<2		<10		
200	10.3	36”	3.0		55		
220	6	32”	<2		<10		
230	662	36”	**480**	ip	**1300**		Failed Surr. Rec. Matrix interference
230 dup	633	36”	**390**	ip	**1200**		Failed Surr. Rec. Matrix interference

Figure 1: All results presented in PPM. Exceedences of the Method 2 Migration to Groundwater clean-up level for the over 40 inch rainfall zone are bolded. Samples 20 and 230 represent at least 40 feet by 2 feet of vertical horizon extending for an unknown distance under the concrete pad from the former boiler building. The remaining samples represent the outer smear zone from the AST spill site. The contaminated horizon is approximately 6 inches to a foot thick with three to four feet of exposed headwall above and below that is not contaminated above standards.

Elijah Donat MS PMP
907/303-7899 cell
elijah@chilkatenvironmental.com

Photo 1: Extent of powerhouse shop excavation

Photo 2: Screening samples collected at 10 foot intervals

Photo 3: Twenty foot sampling units begin at boiler pad corner counting clockwise with unit 230 left of the wall.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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TEL: (206) 285-8282
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e-mail: fbi@isomedia.com

September 9, 2010

Elijah Donat, Project Manager
Chilkat Environmental
PO Box 865
Haines, AK 99827

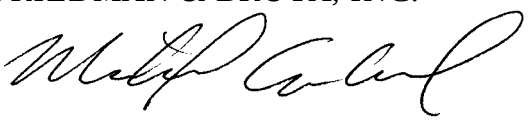
Dear Mr. Donat:

Included are the results from the testing of material submitted on August 25, 2010 from the Chilkoot Lumber Co Powerhouse Shop Excavation, F&BI 008286 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
CHL0909R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 25, 2010 by Friedman & Bruya, Inc. (ADEC laboratory approval number UST-007) from the Chilkat Environmental Chilkoot Lumber Co Powerhouse Shop Excavation, F&BI 008286 project. The samples were received at 4 °C in good condition and were refrigerated upon receipt. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Chilkat Environmental	Date Sampled
008286-01	20	Soil
008286-02	40	Soil
008286-03	60	Soil
008286-04	80	Soil
008286-05	100-2	Soil
008286-06	100-3	Soil
008286-07	100-4	Soil
008286-08	120	Soil
008286-09	140	Soil
008286-10	160	Soil
008286-11	180	Soil
008286-12	200	Soil
008286-13	220	Soil
008286-14	230	Soil
008286-15	230 Dup	Soil
008286-16	Temp Blank	Soil

The sample MeOH blank was not received by the laboratory.

The samples were analyzed as follows:

GRO (soil) - Analysis Method AK 101, Extraction Method 5035

All quality control requirements were acceptable. The results were reported on a dry weight basis

DRO (soil) - Analysis Method AK 102, Extraction Method 3550B

All quality control requirements were acceptable. The results were reported on a dry weight basis

Date of Report: 09/09/10
Date Received: 08/25/10
Project: Chilkoot Lumber Co Powerhouse Shop Excavation, F&BI 008286
Date Extracted: 09/01/10
Date Analyzed: 09/02/10

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
20 008286-01	9
40 008286-02	5
60 008286-03	8
80 008286-04	6
100-2 008286-05	4
100-3 008286-06	8
100-4 008286-07	9
120 008286-08	6
140 008286-09	7
160 008286-10	3
180 008286-11	6
200 008286-12	6

Date of Report: 09/09/10
Date Received: 08/25/10
Project: ProjectID
Date Extracted: 09/01/10
Date Analyzed: 09/02/10

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR PERCENT MOISTURE USING ASTM D2216-98

Sample ID Laboratory ID	% Moisture
220 008286-13	5
230 008286-14	9
230 Dup 008286-15	9

Date of Report: 09/09/10
Date Received: 08/25/10
Project: Chilkoot Lumber Co Powerhouse Shop Excavation, F&BI 008286
Date Extracted: 08/24/10 (field)
Date Analyzed: 09/01/10 and 09/02/10

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD AK 101

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range (C_6-C_{10})	Surrogate (% Recovery) (Limit 50-150)
20 008286-01	140	139
40 008286-02	38	122
60 008286-03	<2	108
80 008286-04	13	119
100-2 008286-05	<2	121
100-3 008286-06 1/10	450	512 ip
100-4 008286-07	81	150
120 008286-08	48	129
140 008286-09	31	126
160 008286-10	2.4	109

Date of Report: 09/09/10
Date Received: 08/25/10
Project: Chilkoot Lumber Co Powerhouse Shop Excavation, F&BI 008286
Date Extracted: 08/24/10 (field)
Date Analyzed: 09/01/10 and 09/02/10

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD AK 101

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range (C_6-C_{10})	Surrogate (% Recovery) (Limit 50-150)
180 008286-11	<2	115
200 008286-12	3.0	117
220 008286-13	<2	120
230 008286-14 1/10	480	234 ip
230 Dup 008286-15	390	203 ip
Method Blank 00-1350 MB	<2	98

Date of Report: 09/09/10
Date Received: 08/25/10
Project: Chilkoot Lumber Co Powerhouse Shop Excavation, F&BI 008286
Date Extracted: 09/01/10
Date Analyzed: 09/03/10 and 09/04/10

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD AK102

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Surrogate (% Recovery) (Limit 50-150)
20 008286-01	1,800	142
40 008286-02	320	126
60 008286-03	760 x	117
80 008286-04	990 x	117
100-2 008286-05	<10	125
100-3 008286-06	1,600	162 ip
100-4 008286-07	130	128
120 008286-08	470	132
140 008286-09	500	140
160 008286-10	31	120
180 008286-11	<10	120

Date of Report: 09/09/10
Date Received: 08/25/10
Project: Chilkoot Lumber Co Powerhouse Shop Excavation, F&BI 008286
Date Extracted: 09/01/10
Date Analyzed: 09/03/10 and 09/04/10

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD AK102

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Surrogate (% Recovery) (Limit 50-150)
200 008286-12	55	123
220 008286-13	<10	120
230 008286-14	1,300	132
230 Dup 008286-15	1,200	144
Method Blank 00-1391 MB	<10	119

Date of Report: 09/09/10
Date Received: 08/25/10
Project: Chilkoot Lumber Co Powerhouse Shop Excavation, F&BI 008286

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD AK 101

Laboratory Code: 008286-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	mg/kg (ppm)	140	130	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	mg/kg (ppm)	20	125	125	71-131	0

Date of Report: 09/09/10
Date Received: 08/25/10
Project: Chilkoot Lumber Co Powerhouse Shop Excavation, F&BI 008286

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD AK 102

Laboratory Code: 008286-03 (Duplicate)

Analyte	Reporting Units	(Wet wt) Sample Result	(Wet wt) Duplicate Result	Relative Percent Difference	Acceptance Criteria
Diesel	mg/kg (ppm)	760	760	0	0-20

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel	mg/kg (ppm)	500	93	89	75-125	4

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

0082286

SAMPLE CHAIN OF CUSTODY ME 8/25/10 D03/CE3

Page # 1 of 2

Send Report To

Company Chilkat Environmental

Address PO Box 865

City, State, ZIP Haines, AK. 99827

Phone # 303-7894 Fax# 907-766-3897

SAMPLERS (signature) Elijah Donat

PROJECT NAME/NO. Chilkoot Lumber Company Powerhouse Shop Excavation

PO #

REMARKS

TURNAROUND TIME
- [x] Standard (2 Weeks)
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	AK 101 GRO	AK 101 DRO					Notes
20	01 AB	8.24.10	1300	Soil	2							X	X					
40	02 AB	8.24.10	1312	Soil	2							X	X					
60	03 AB	8.24.10	1315	Soil	2							X	X					
80	04 AB	8.24.10	1325	Soil	2							X	X					
100-2	05 AB	8.24.10	1326	Soil	2							X	X					
100-3	06 AB	8.24.10	1327	Soil	2							X	X					
100-4	07 AB	8.24.10	1328	Soil	2							X	X					
120	08 AB	8.24.10	1331	Soil	2							X	X					
140	09 AB	8.24.10	1330	Soil	2							X	X					
160	10 AB	8.24.10	1337	Soil	2							X	X					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Donat	Chilkat Env	8/24/10	1826
Received by:	Eric Young	FTB	8/25/10	1350
Relinquished by:				
Received by:		Samples received at 4 °C		

FORMS\COC\COC.DOC

008286

SAMPLE CHAIN OF CUSTODY

ME 8/25/10 D03/C13

Send Report To

Company Chilkat Environmental

Address PO Box 865

City, State, ZIP Haines, AK 99827

Phone # 907 303-7899 ~~Fax#~~ 907-766-3897

SAMPLERS (signature) Elijah Donat

PROJECT NAME/NO. Chilkat Lumber Company Powerhouse Shop Excavation

PO #

REMARKS

Page # _____ of _____

TURNAROUND TIME
- [X] Standard (2 Weeks)
- [ ] RUSH _____

Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	AK101 GRO	AK102 DRO					Notes
ANALYSES REQUESTED																		
180	11 A B	8.24.10	1335	Soil	2							X	X					
200	12 A B	8.24.10	1336	Soil	2							X	X					
220	13 A B	8.24.10	1337	Soil	2							X	X					
230	14 A B	8.24.10	1340	Soil	2							X	X					
230 DUP	15 A B	8.24.10	1342	Soil	2							X	X					
MeOH BLANK		—		BLANK	1													NOT RECEIVED
Temp BLANK	16	—		BLANK	1													

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Donat	Chilkat Env	8/24/10	1826
Received by:	Eric Young	FEB	8/25	800
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

Laboratory Data Review Checklist

Completed by: Elijah Donat

Title: Chilkat Environmental - Manager

Date: 9/24/10

CS Report Name: Chilkoot Lumber Company Powerhouse Shop Exc.

Report Date: 09/09/10

Consultant Firm: Chilkat Environmental

Laboratory Name: Friedman & Bruya, Inc.

Laboratory Report Number: 008286

ADEC File Number:

ADEC RecKey Number:

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
   ☒ Yes ☐ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
   ☐ Yes ☐ No Comments: N/A

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?
   ☒ Yes ☐ No Comments:

   b. Correct analyses requested?
   ☒ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?

☒ Yes ☐ No Comments: 4°C

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

☒ Yes ☐ No Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

☒ Yes ☐ No Comments: No issues

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☒ Yes ☐ No Comments: MeOH blank not received.

e. Data quality or usability affected? Explain.

No Comments:

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☒ Yes ☐ No Comments:

c. Were all corrective actions documented?

☒ Yes ☐ No Comments:

d. What is the effect on data quality/usability according to the case narrative?

No effect Comments:

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒ Yes ☐ No Comments:

b. All applicable holding times met?

☒ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☒ Yes ☐ No Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

☒ Yes ☐ No Comments:

e. Data quality or usability affected?

No Comments:

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☒ Yes ☐ No Comments:

ii. All method blank results less than PQL?

☒ Yes ☐ No Comments:

iii. If above PQL, what samples are affected?

None Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☐ No Comments: N/A

v. Data quality or usability affected? Explain.

No Comments:

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☒ Yes ☐ No Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☐ Yes ☐ No Comments: N/A

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

None Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☐ No Comments: N/A

vii. Data quality or usability affected? (Use comment box to explain)

Comments: No

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☒ Yes ☐ No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐ Yes ☒ No Comments: Compounds in the sample matrix interfered with the quantitation of surrogate compounds for the AK101 and AK102 analyses.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☒ Yes ☐ No Comments: Samples 100-3, 230, and 230Dup for AK101 and 100-3 for AK102 flagged as ip.

iv. Data quality or usability affected? (Use the comment box to explain.)

Comments: No

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

☐ Yes ☒ No Comments: Not received

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐ Yes ☐ No Comments: N/A

iii. All results less than PQL?

☐ Yes ☐ No Comments: N/A

iv. If above PQL, what samples are affected?

Comments: N/A

v. Data quality or usability affected? Explain.

No

Comments:

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☒ Yes ☐ No Comments:

ii. Submitted blind to lab?

☐ Yes ☒ No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

No

Comments:

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☐ Yes ☐ No ☒ Not Applicable

i. All results less than PQL?

☐ Yes ☐ No Comments: N/A

ii. If above PQL, what samples are affected?

Comments: N/A

iii. Data quality or usability affected? Explain.

Comments: N/A

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments: X qualifiers used on AK102 for samples 60 and 80 due to overlap from the RRO.

chilkat environmental

Box 865 Haines, AK 99827 (907) 766-3897 chilkat@chilkatenvironmental.com

8/18/2010

Bruce Wanstall, Project Manager
State of Alaska, Alaska Department of Environmental Conservation
Division of Spill Prevention and Response, Contaminated Sites Program
410 Willoughby Ave, Suite 303
PO Box 111800
Juneau, AK 99801

Re: ADEC File 1508.38.009: Sampling Plan to Characterize Soil at the Extent of Excavation for the Former Powerhouse Shop

Mr. Bruce Wanstall,

Chilkat Environmental authored this sampling plan upon request to determine contamination levels for soil at the extent of excavation for the former powerhouse shop at the Chilkoot Lumber Company site in Lutak Inlet near Haines, AK. This excavation was conducted summer of 2009 and has remained open th. Customarily characterization would include collection of samples from the floor and walls of the excavation. This plan proposes to only sample the wall because the floor features an intact native clay layer which has been followed from the adjacent generator shop floor excavation and found by laboratory sampling and screening to satisfy clean-up standards. Further, the excavation floor is saturated with groundwater preventing collection of representative samples due to inference in soil testing methods imposed by saturation. Discussion with ADEC has confirmed that only wall sampling will be conducted. The excavation includes an estimated 1400 square foot floor and average 6 foot headwalls estimated at 160 linear feet of headwall.

Screening samples will be collected for heated PID headspace analyses, hot water sheen and odor at least every 10 feet of headwall with attention to characterization of the distinct horizons. Laboratory samples will be collected every 20 feet of headwall at the locations that present the most significant screening results.

The remaining boiler pad is adjacent to a sidewall of the powerhouse shop pad excavation and has petroleum soil contamination trapped beneath it. The residual soil contamination under the boiler pad will be defined by the confirmation samples collected from the sidewall along the boiler pad that is shared with the open excavation. Results for this location are not suspected of satisfying clean-up standards. Upon receipt of the laboratory report for this sampling event Chilkat Environmental may request consideration that the excavation could be filled and membrane used to separate the contaminated headwall from the fresh fill until such time that excavation of the remaining contaminated

material is conducted. This phased approach is recommended for consideration to expedite closure of the open excavation which itself may act to accelerate the exposure pathway. We estimate that the remaining portion of the headwall will likely satisfy clean-up requirements.

Soil samples will be analyzed at the Laboratory for AK 101 GRO and for AK 102 DRO. Soil samples for AK 101 GRO will be collected using methanol preparation and the sample volume will be determined by use of a digital scale in the field and tare weighted jars with methanol added to jars by Laboratory. The DRO samples will be collected in 4 oz. soil jars with no preservative.

The laboratory report will be provided to ADEC upon receipt and will include a completed Data Quality Review Checklist and detailed Case Narrative. A report will be prepared by Chilkat Environmental that will compare laboratory results to clean-up standards, provide screening data and provide recommendations.

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