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October 20, 2016
1563-03

Mr. Grant Lidren
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, AK 99501

Attention: **Mr. Grant Lidren**
Environmental Program Specialist IV

Re: Lot 6F, Block 2, Unalaska Airport Stockpile TCLP Lead Sampling Report
ADEC File No. 2542.38.010

Dear Mr. Lidren:

In September, 2016, Travis/Peterson Environmental Consulting, Inc. (TPECI) submitted the *2016 Unalaska Airport Debris Pile Removal Report* describing the removal and characterization of potentially contaminated soils on the property identified as Lot 6F, Block 2, Unalaska Airport in Dutch Harbor, AK (see Figure 1 enclosed). The investigation found elevated Total Lead (Pb) concentrations within six soil stockpiles at the site. However, the concentrations were below Alaska Department of Environmental Conservation (ADEC) Method Two cleanup level of 400 mg/kg. Due to the elevated concentrations, a September 19, 2016 ADEC letter requested that these stockpiles be sampled for Toxicity Characteristic Leaching Procedure (TCLP) for lead to determine if the soils meet the criteria of a Resource Conservation and Recovery Act (RCRA) characteristic hazardous waste for lead.

This letter report describes the collection of samples for laboratory analysis of these stockpiles in accordance with the ADEC request and the ADEC-approved work plan. This letter details the findings of the investigation.

This work was conducted in accordance with the *ADEC 18 AAC 75 Oil and Other Hazardous Substances Pollution Control (revised April 2016)*. Where applicable, the analysis was modeled after procedures described in the *ADEC Site Characterization Work Plan and Reporting*

Guidance for Investigation of Contaminated Sites (September 2009). Sampling efforts were conducted in accordance with the *ADEC Field Sampling Guidance (March 2016)* unless otherwise specified within this document.

No soil screening was conducted as part of the proposed work. Field screening for lead (Pb) using X-ray fluorescence (XRF) correlated with previous laboratory results is applicable for determining Total Lead (Pb) concentrations. However, no field screening methods are available to determine locations of highest TCLP lead concentrations.

Per ADEC recommendation, TPECI collected additional soil samples for laboratory analysis from the six soil stockpiles referenced in the *2016 Unalaska Airport Debris Pile Removal Report* submitted to the ADEC by TPECI. Each of the six onsite stockpiles was sampled to determine if the soils met the criteria of a RCRA characteristic hazardous waste for lead.

TPECI collected a five-point composite sample from each of the six soil stockpiles. Where possible, TPECI utilized the five soil sample locations that were previously sampled within each stockpile (see Figure 4 enclosed). Due to significant vegetation growth on the stockpiles, some sampling locations were adjusted, but remained within one foot (12 inches) of the original sampling point.

A total of 12 soil samples were collected from the six soil stockpiles including two field duplicate samples. While on site, Western Power Engineering requested that TPECI collect samples for Total Lead and PCBs in addition to the proposed TCLP for lead sampling. Soil samples for lead analyses and soil samples for Polychlorinated biphenyl (PCB) analyses were identified as separate samples, though samples were collected from the same locations. Field duplicate samples for lead analyses and PCB analyses were collected from separate stockpiles.

All laboratory soil samples were analyzed for TCLP lead by EPA Method 1311, Total Lead by EPA Method 6020A, and PCBs by EPA Method 8082A. Samples were submitted to SGS Environmental Laboratories, Inc. in Anchorage, Alaska for laboratory analysis.

Table 1: Analytical Methods and Sample Requirements

Method	Matrix	Container (jars)	Preservative	Hold time
SW1311 (TCLP Lead)	Soil	1 4-oz amber wide mouth jar	None	180 days
6020A (Total Lead)	Soil	1 4-oz amber wide mouth jar	None	180 days
8082A (PCBs)	Soil	1 4-oz amber wide mouth jar	0-6°C	40 days

Sampling was performed in accordance with the applicable regulations:

- All samples were collected using disposable or cleaned and decontaminated sampling equipment;
- Field personnel wore disposable gloves, safety goggles, steel toed boots, hard hat, reflective vest, and other appropriate Class D personal protective equipment. Gloves and sampling devices were changed between samples;
- Samples were collected as quickly as possible and placed in laboratory supplied containers;
- All samples were labeled; and
- All samples were preserved in accordance with laboratory specifications and cooled to a temperature of 0 to 6 degrees Celsius (when applicable).

All field sampling methods, QA/QC actions, and data reporting were conducted in accordance with Section 7.1 Standard Operating Procedures of the ADEC-approved *2016 Unalaska Airport Debris Pile Removal Work Plan*.

Results

TPECI collected 12 soils samples for laboratory analysis. One sample was collected from each soil stockpile. Sample IDs ending with a "P" were analyzed for PCBs. Previously, 10% of the soil stockpile samples had been analyzed for Total Lead and PCBs. Analysis for Total Lead in all stockpiles would allow for a direct comparison to TLCP for lead results.

Table 1 shows the laboratory results for samples SP1(P) through SP11. Sample SP10 is a field duplicate of sample SP3. Sample SP11 is a field duplicate of sample SP5P. Complete analytical results are in the SGS Laboratory Report enclosed with this letter. The ADEC Data Review Checklist has also been completed for this report and is enclosed with this letter.

Table 1. Stockpile Sampling Laboratory Results

Sample ID	Depth (ft)	TCLP Lead	Total Lead	PCBs
		5 mg/L	400 mg/Kg	1000 µg/Kg
SP1	2.0	0.195	161	-
SP1P	2.0	-	-	90.7
SP2	2.0	0.308	231	-
SP2P	2.0	-	-	93.9
SP3	2.0	0.304	**462**	-
SP4	2.0	1.11	358	-
SP4P	2.0	-	-	396
SP5	2.0	4.32	332	-
SP5P	2.0	-	-	478
SP6	2.0	0.156	211	-
SP10	2.0	0.694	258	-
SP11	2.0	-	-	494

Notes:
Bold indicates concentration exceed ADEC Method Two Cleanup Level (>40 in zone).
J The quantitation is an estimate.
U Indicates the analyte was analyzed for but not detected.
Sample SP10 is a field duplicate of sample SP3.
Sample SP11 is a field duplicate of sample SP5P.
Aroclor-1260 only Aroclor detected.

In laboratory analysis, detectable PCB concentrations were observed in all soil stockpiles. However, only Aroclor-1260 was observed. Additionally, all observed PCB concentrations were below the ADEC Method Two cleanup levels (greater than 40-inch zone). These findings corresponded with the previous PCB analysis of soil Stockpile #4.

Samples were analyzed for Total Lead to create a direct comparison with TCLP for lead results. Total Lead concentrations in the stockpiles were elevated. This corresponded with the previous Total Lead analysis of soil Stockpile #4. The Total Lead concentration observed in sample SP3 (soil stockpile #3) was 462mg/Kg, above the ADEC Method Two cleanup level (greater than 40-inch zone) of 40 mg/Kg. However, sample SP10 was a field duplicate of SP3. The Total Lead concentration in SP10 was 258 mg/Kg.

Detectable TCLP for lead concentrations were observed in all soil stockpiles and their corresponding samples. These concentrations ranged from 0.156 mg/L to 4.32 mg/L. All soil samples were below the 5.0 mg/L limit criteria to be classified as a RCRA characteristic hazardous waste for lead.

Discussion

Based on this sample and previous sampling of Stockpile #4, PCB contamination does not appear to be an issue in the stockpile soils. Elevated concentrations of Aroclor-1260 are present, but below ADEC Method Two cleanup levels. Aroclor-1260 is the typical PCB congener associated with military operations. Since PCB concentrations are less than 1 mg/Kg, they will not impact the final treatment or disposal of stockpile soils.

The Total Lead concentration observed in soil sample SP3 was above ADEC Method Two cleanup levels. However, the field duplicate sample (SP10) had a Total Lead concentration of 258 mg/Kg. Inconsistencies in metals sampling for soil in field duplicates where soils were split between the two samples could indicate the presence of small metal fragments in one of the samples. Soils were not sifted or screened during the sample collection process, increasing the potential for the presence of metal fragments. TPECI believes that a small metal lead fragment likely was present in soil sample SP3 resulting in difference from the field duplicate result.

While detectable TCLP for lead concentrations were observed in all soil stockpiles, all samples were below the 5.0 mg/L RCRA characteristic hazardous waste limit. Thus, no soils at the site are classified as a RCRA hazardous waste due to lead. Soil sample SP3, while containing Total Lead concentrations above ADEC Method Two cleanup levels, had a TCLP for lead concentration of 0.304 mg/L. This indicates the lead present in the soils is not mobile and does not require RCRA regulated disposal.

Deviation from the Approved Work Plan

The ADEC-approved work plan stated that TPECI would collect samples from the soil stockpiles for TCLP for lead. Based on a request from Western Power Engineering, TPECI also collected samples for Total Lead and PCBs. TPECI had sufficient laboratory-provided sampling jars

available on site to meet the laboratory required volumes for these analyses. The inclusion of these analyses did not alter the approved sampling methodology. No other deviations from the approved work plan occurred.

Conclusions

The findings of this investigation indicated that the stockpiled soils at the site are not RCRA regulated hazardous wastes. No specific disposal action will be necessary for the handling or treatment of these soils.

Based on the findings of this investigation and the sampling during the creation of the stockpiles, soil stockpiles #1, #2, #5, and #6 can be used, transported off site, or otherwise managed at the owner's discretion. Soil stockpile #4 was found to contain Diesel Range Organics (DRO) concentrations above ADEC Method Two cleanup levels (greater than 40-inch zone) in the initial investigation. Remediation or other ADEC-approved disposal of these soils in this stockpile is required.

This investigation determined that soil stockpile #3 contained Total Lead concentrations above ADEC Method Two cleanup levels. As TCLP for lead concentrations found that these soils are not a regulated hazardous waste and the contaminants are not mobile, alternative disposal may be feasible for these soils. Western Power Engineering and TPECI are coordinating with the City of Unalaska landfill to attempt to utilize all stockpiled soils (excluding soil stockpile #4) as cover material for the landfill in accordance with their ADEC Solid Waste permit.

Prior to any transport or disposal of contaminated soils exceeding ADEC cleanup levels, TPECI will coordinate with the ADEC and submit the *ADEC Transport, Treatment, & Disposal Approval Form for Contaminated Media* for approval.

If you have any questions or comments, please contact me a (907) 522-4337 or EMundahl@tpeci.com.

Sincerely,

Erik D. Mundahl, P.E.
Environmental Engineer

Encl.: 1) Figure 1 – Location and Vicinity Map
2) Figure 4 – Stockpile Sampling Site Plan
3) SGS Laboratory Report and ADEC Data Review Checklist
4) Photo Log
5) Field Notes

Travis/Peterson Environmental Consulting, Inc.
3305 Arctic Boulevard, Suite 102
Anchorage, AK 99503
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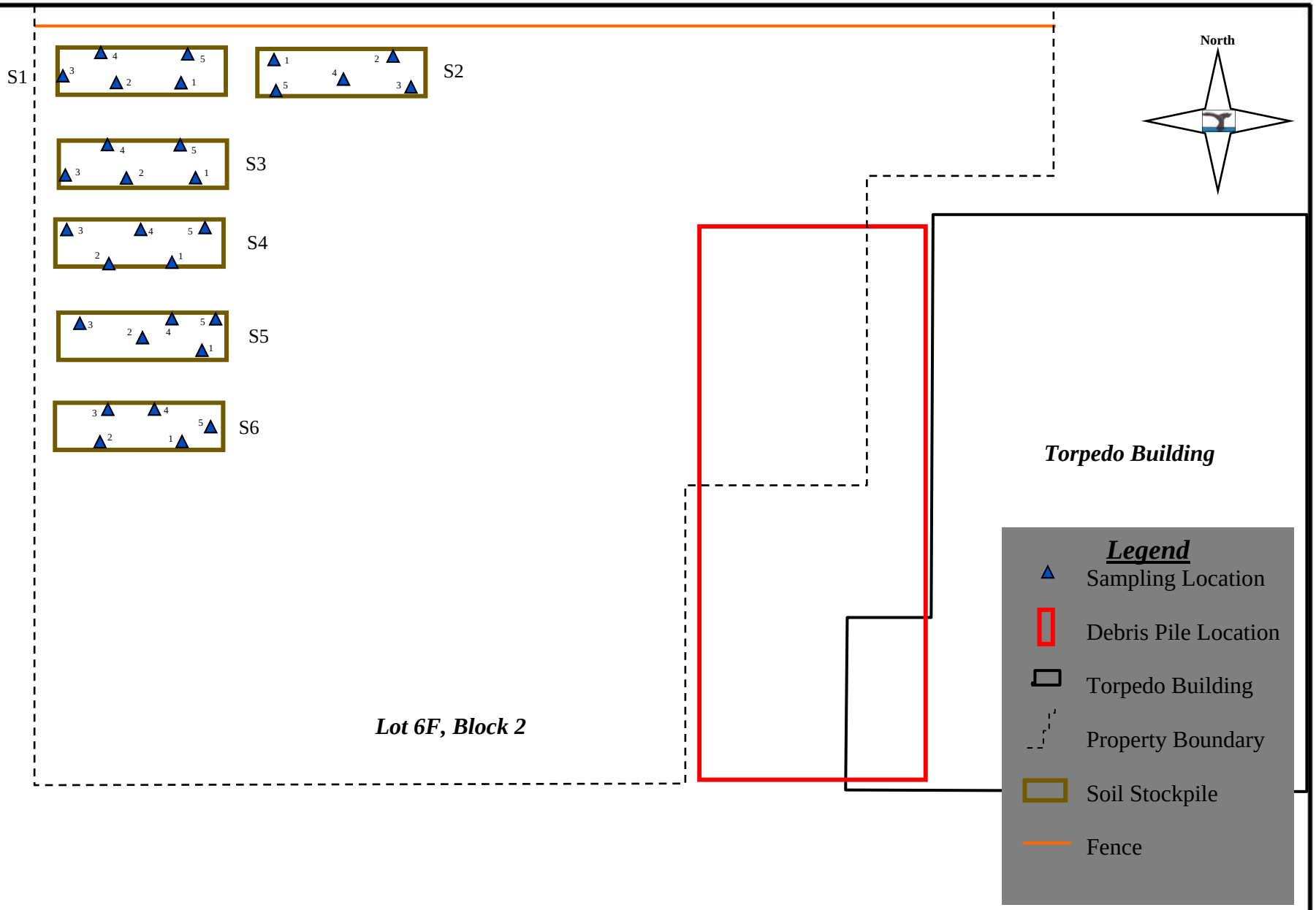
Lot 6F, Block 2, Unalaska Airport Debris Pile Removal Report

Dutch Harbor, Alaska

Figure #1
Location & Vicinity Map

Project No: 1563-03	**File: Jupiter\backup\Erik\1563-01\Figures**	**Date: 9/11/2016**	**Scale: None**



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Lot 6F, Block 2, Unalaska Airport Debris Pile Removal Report

Dutch Harbor, Alaska

Figure #4
Stockpile Sampling Site Plan

Project No: 1563-03	**File: Jupiter\backup\Erik\1563-01\Figures**	**Date: 9/11/2016**	**Scale: None**

Laboratory Report of Analysis

To: Travis/Peterson (TPECI)
3305 Arctic Blvd Suite 102
Anchorage, AK 99503
(907)522-4337

Report Number: **1165773**

Client Project: **Torpedo Bldg Stockpile**

Dear Erik Mundahl,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Victoria at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Victoria Pennick Date
Project Manager
Victoria.Pennick@sgs.com

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Case Narrative

SGS Client: **Travis/Peterson (TPECI)**
SGS Project: **1165773**
Project Name/Site: **Torpedo Bldg Stockpile**
Project Contact: **Erik Mundahl**

Refer to sample receipt form for information on sample condition.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

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Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
SP1	1165773001	09/27/2016	09/28/2016	Soil/Solid (dry weight)
SP2	1165773002	09/27/2016	09/28/2016	Soil/Solid (dry weight)
SP3	1165773003	09/27/2016	09/28/2016	Soil/Solid (dry weight)
SP4	1165773004	09/27/2016	09/28/2016	Soil/Solid (dry weight)
SP5	1165773005	09/27/2016	09/28/2016	Soil/Solid (dry weight)
SP6	1165773006	09/27/2016	09/28/2016	Soil/Solid (dry weight)
SP10	1165773007	09/27/2016	09/28/2016	Soil/Solid (dry weight)
SP1P	1165773008	09/27/2016	09/28/2016	Soil/Solid (dry weight)
SP2P	1165773009	09/27/2016	09/28/2016	Soil/Solid (dry weight)
SP4P	1165773010	09/27/2016	09/28/2016	Soil/Solid (dry weight)
SP5P	1165773011	09/27/2016	09/28/2016	Soil/Solid (dry weight)
SP11	1165773012	09/27/2016	09/28/2016	Soil/Solid (dry weight)
SP1	1165773013	09/27/2016	09/28/2016	Solid/Soil (Wet Weight)
SP2	1165773014	09/27/2016	09/28/2016	Solid/Soil (Wet Weight)
SP3	1165773015	09/27/2016	09/28/2016	Solid/Soil (Wet Weight)
SP4	1165773016	09/27/2016	09/28/2016	Solid/Soil (Wet Weight)
SP5	1165773017	09/27/2016	09/28/2016	Solid/Soil (Wet Weight)
SP6	1165773018	09/27/2016	09/28/2016	Solid/Soil (Wet Weight)
SP10	1165773019	09/27/2016	09/28/2016	Solid/Soil (Wet Weight)

Method	Method Description
SW6020A TCLP	Metals by ICP-MS
SW6020A	Metals by ICP-MS (S)
SM21 2540G	Percent Solids SM2540G
SW8082A	SW8082 PCB's

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Detectable Results Summary

Client Sample ID: **SP1**			
Lab Sample ID: 1165773001	Parameter	Result	Units
Metals by ICP/MS	Lead	161	mg/Kg
Client Sample ID: **SP2**			
Lab Sample ID: 1165773002	Parameter	Result	Units
Metals by ICP/MS	Lead	231	mg/Kg
Client Sample ID: **SP3**			
Lab Sample ID: 1165773003	Parameter	Result	Units
Metals by ICP/MS	Lead	462	mg/Kg
Client Sample ID: **SP4**			
Lab Sample ID: 1165773004	Parameter	Result	Units
Metals by ICP/MS	Lead	358	mg/Kg
Client Sample ID: **SP5**			
Lab Sample ID: 1165773005	Parameter	Result	Units
Metals by ICP/MS	Lead	332	mg/Kg
Client Sample ID: **SP6**			
Lab Sample ID: 1165773006	Parameter	Result	Units
Metals by ICP/MS	Lead	211	mg/Kg
Client Sample ID: **SP10**			
Lab Sample ID: 1165773007	Parameter	Result	Units
Metals by ICP/MS	Lead	258	mg/Kg
Client Sample ID: **SP1P**			
Lab Sample ID: 1165773008	Parameter	Result	Units
Polychlorinated Biphenyls	Aroclor-1260	90.7	ug/Kg
Client Sample ID: **SP2P**			
Lab Sample ID: 1165773009	Parameter	Result	Units
Polychlorinated Biphenyls	Aroclor-1260	93.9	ug/Kg
Client Sample ID: **SP4P**			
Lab Sample ID: 1165773010	Parameter	Result	Units
Polychlorinated Biphenyls	Aroclor-1260	396	ug/Kg
Client Sample ID: **SP5P**			
Lab Sample ID: 1165773011	Parameter	Result	Units
Polychlorinated Biphenyls	Aroclor-1260	478	ug/Kg
Client Sample ID: **SP11**			
Lab Sample ID: 1165773012	Parameter	Result	Units
Polychlorinated Biphenyls	Aroclor-1260	494	ug/Kg
Client Sample ID: **SP1**			
Lab Sample ID: 1165773013	Parameter	Result	Units
TCLP Constituents Metals	Lead	0.195	mg/L

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Detectable Results Summary

Client Sample ID: **SP2**
Lab Sample ID: 1165773014
TCLP Constituents Metals

Parameter	Result	Units
Lead	0.308	mg/L

Client Sample ID: **SP3**
Lab Sample ID: 1165773015
TCLP Constituents Metals

Parameter	Result	Units
Lead	0.304	mg/L

Client Sample ID: **SP4**
Lab Sample ID: 1165773016
TCLP Constituents Metals

Parameter	Result	Units
Lead	1.11	mg/L

Client Sample ID: **SP5**
Lab Sample ID: 1165773017
TCLP Constituents Metals

Parameter	Result	Units
Lead	4.32	mg/L

Client Sample ID: **SP6**
Lab Sample ID: 1165773018
TCLP Constituents Metals

Parameter	Result	Units
Lead	0.156	mg/L

Client Sample ID: **SP10**
Lab Sample ID: 1165773019
TCLP Constituents Metals

Parameter	Result	Units
Lead	0.694	mg/L

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Results of **SP1**

Client Sample ID: **SP1**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773001
Lab Project ID: 1165773

Collection Date: 09/27/16 13:42
Received Date: 09/28/16 11:23
Matrix: Soil/Solid (dry weight)
Solids (%):91.4
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	161		1.07	0.332	mg/Kg	50		10/12/16 14:16

Batch Information

Analytical Batch: MMS9576
Analytical Method: SW6020A
Analyst: VDL
Analytical Date/Time: 10/12/16 14:16
Container ID: 1165773001-A

Prep Batch: MXX30268
Prep Method: SW3050B
Prep Date/Time: 10/07/16 07:52
Prep Initial Wt./Vol.: 1.022 g
Prep Extract Vol: 50 mL

Print Date: 10/18/2016 1:17:53PM

Results of **SP2**

Client Sample ID: **SP2**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773002
Lab Project ID: 1165773

Collection Date: 09/27/16 13:25
Received Date: 09/28/16 11:23
Matrix: Soil/Solid (dry weight)
Solids (%):90.1
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	231		1.06	0.327	mg/Kg	50		10/12/16 14:21

Batch Information

Analytical Batch: MMS9576
Analytical Method: SW6020A
Analyst: VDL
Analytical Date/Time: 10/12/16 14:21
Container ID: 1165773002-A

Prep Batch: MXX30268
Prep Method: SW3050B
Prep Date/Time: 10/07/16 07:52
Prep Initial Wt./Vol.: 1.051 g
Prep Extract Vol: 50 mL

Print Date: 10/18/2016 1:17:53PM

Results of **SP3**

Client Sample ID: **SP3**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773003
Lab Project ID: 1165773

Collection Date: 09/27/16 13:13
Received Date: 09/28/16 11:23
Matrix: Soil/Solid (dry weight)
Solids (%):93.3
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	462		1.05	0.327	mg/Kg	50		10/12/16 14:25

Batch Information

Analytical Batch: MMS9576
Analytical Method: SW6020A
Analyst: VDL
Analytical Date/Time: 10/12/16 14:25
Container ID: 1165773003-A

Prep Batch: MXX30268
Prep Method: SW3050B
Prep Date/Time: 10/07/16 07:52
Prep Initial Wt./Vol.: 1.017 g
Prep Extract Vol: 50 mL

Print Date: 10/18/2016 1:17:53PM

Results of **SP4**

Client Sample ID: **SP4**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773004
Lab Project ID: 1165773

Collection Date: 09/27/16 12:50
Received Date: 09/28/16 11:23
Matrix: Soil/Solid (dry weight)
Solids (%):92.7
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	358		1.02	0.316	mg/Kg	50		10/12/16 14:30

Batch Information

Analytical Batch: MMS9576
Analytical Method: SW6020A
Analyst: VDL
Analytical Date/Time: 10/12/16 14:30
Container ID: 1165773004-A

Prep Batch: MXX30268
Prep Method: SW3050B
Prep Date/Time: 10/07/16 07:52
Prep Initial Wt./Vol.: 1.06 g
Prep Extract Vol: 50 mL

Print Date: 10/18/2016 1:17:53PM

Results of **SP5**

Client Sample ID: **SP5**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773005
Lab Project ID: 1165773

Collection Date: 09/27/16 12:34
Received Date: 09/28/16 11:23
Matrix: Soil/Solid (dry weight)
Solids (%):91.1
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	332		1.01	0.313	mg/Kg	50		10/12/16 14:34

Batch Information

Analytical Batch: MMS9576
Analytical Method: SW6020A
Analyst: VDL
Analytical Date/Time: 10/12/16 14:34
Container ID: 1165773005-A

Prep Batch: MXX30268
Prep Method: SW3050B
Prep Date/Time: 10/07/16 07:52
Prep Initial Wt./Vol.: 1.086 g
Prep Extract Vol: 50 mL

Print Date: 10/18/2016 1:17:53PM

Results of **SP6**

Client Sample ID: **SP6**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773006
Lab Project ID: 1165773

Collection Date: 09/27/16 12:26
Received Date: 09/28/16 11:23
Matrix: Soil/Solid (dry weight)
Solids (%):93.8
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	211		1.04	0.321	mg/Kg	50		10/12/16 14:39

Batch Information

Analytical Batch: MMS9576
Analytical Method: SW6020A
Analyst: VDL
Analytical Date/Time: 10/12/16 14:39
Container ID: 1165773006-A

Prep Batch: MXX30268
Prep Method: SW3050B
Prep Date/Time: 10/07/16 07:52
Prep Initial Wt./Vol.: 1.029 g
Prep Extract Vol: 50 mL

Print Date: 10/18/2016 1:17:53PM

Results of **SP10**

Client Sample ID: **SP10**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773007
Lab Project ID: 1165773

Collection Date: 09/27/16 13:13
Received Date: 09/28/16 11:23
Matrix: Soil/Solid (dry weight)
Solids (%):92.4
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	258		1.07	0.332	mg/Kg	50		10/12/16 14:43

Batch Information

Analytical Batch: MMS9576
Analytical Method: SW6020A
Analyst: VDL
Analytical Date/Time: 10/12/16 14:43
Container ID: 1165773007-A

Prep Batch: MXX30268
Prep Method: SW3050B
Prep Date/Time: 10/07/16 07:52
Prep Initial Wt./Vol.: 1.011 g
Prep Extract Vol: 50 mL

Print Date: 10/18/2016 1:17:53PM

Results of **SP1P**

Client Sample ID: **SP1P**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773008
Lab Project ID: 1165773

Collection Date: 09/27/16 13:42
Received Date: 09/28/16 11:23
Matrix: Soil/Solid (dry weight)
Solids (%):89.4
Location:

Results by **Polychlorinated Biphenyls**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aroclor-1016	55.1	U	55.1	16.5	ug/Kg	1		10/11/16 18:47
Aroclor-1221	221	U	221	68.4	ug/Kg	1		10/11/16 18:47
Aroclor-1232	55.1	U	55.1	16.5	ug/Kg	1		10/11/16 18:47
Aroclor-1242	55.1	U	55.1	16.5	ug/Kg	1		10/11/16 18:47
Aroclor-1248	55.1	U	55.1	16.5	ug/Kg	1		10/11/16 18:47
Aroclor-1254	55.1	U	55.1	16.5	ug/Kg	1		10/11/16 18:47
Aroclor-1260	90.7		55.1	16.5	ug/Kg	1		10/11/16 18:47
Surrogates								
Decachlorobiphenyl (surr)	83		60-125		%	1		10/11/16 18:47

Batch Information

Analytical Batch: XGC9556
Analytical Method: SW8082A
Analyst: S.G
Analytical Date/Time: 10/11/16 18:47
Container ID: 1165773008-A

Prep Batch: XXX36454
Prep Method: SW3550C
Prep Date/Time: 10/04/16 20:40
Prep Initial Wt./Vol.: 22.822 g
Prep Extract Vol: 5 mL

Print Date: 10/18/2016 1:17:53PM

Results of **SP2P**

Client Sample ID: **SP2P**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773009
Lab Project ID: 1165773

Collection Date: 09/27/16 13:25
Received Date: 09/28/16 11:23
Matrix: Soil/Solid (dry weight)
Solids (%):92.1
Location:

Results by **Polychlorinated Biphenyls**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aroclor-1016	54.2	U	54.2	16.2	ug/Kg	1		10/11/16 19:15
Aroclor-1221	217	U	217	67.2	ug/Kg	1		10/11/16 19:15
Aroclor-1232	54.2	U	54.2	16.2	ug/Kg	1		10/11/16 19:15
Aroclor-1242	54.2	U	54.2	16.2	ug/Kg	1		10/11/16 19:15
Aroclor-1248	54.2	U	54.2	16.2	ug/Kg	1		10/11/16 19:15
Aroclor-1254	54.2	U	54.2	16.2	ug/Kg	1		10/11/16 19:15
Aroclor-1260	93.9		54.2	16.2	ug/Kg	1		10/11/16 19:15
Surrogates								
Decachlorobiphenyl (surr)	83		60-125		%	1		10/11/16 19:15

Batch Information

Analytical Batch: XGC9556
Analytical Method: SW8082A
Analyst: S.G
Analytical Date/Time: 10/11/16 19:15
Container ID: 1165773009-A

Prep Batch: XXX36454
Prep Method: SW3550C
Prep Date/Time: 10/04/16 20:40
Prep Initial Wt./Vol.: 22.56 g
Prep Extract Vol: 5 mL

Print Date: 10/18/2016 1:17:53PM

Results of **SP4P**

Client Sample ID: **SP4P**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773010
Lab Project ID: 1165773

Collection Date: 09/27/16 12:50
Received Date: 09/28/16 11:23
Matrix: Soil/Solid (dry weight)
Solids (%):95.0
Location:

Results by **Polychlorinated Biphenyls**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aroclor-1016	52.1	U	52.1	15.6	ug/Kg	1		10/11/16 19:44
Aroclor-1221	209	U	209	64.6	ug/Kg	1		10/11/16 19:44
Aroclor-1232	52.1	U	52.1	15.6	ug/Kg	1		10/11/16 19:44
Aroclor-1242	52.1	U	52.1	15.6	ug/Kg	1		10/11/16 19:44
Aroclor-1248	52.1	U	52.1	15.6	ug/Kg	1		10/11/16 19:44
Aroclor-1254	52.1	U	52.1	15.6	ug/Kg	1		10/11/16 19:44
Aroclor-1260	396		52.1	15.6	ug/Kg	1		10/11/16 19:44
Surrogates								
Decachlorobiphenyl (surr)	78		60-125		%	1		10/11/16 19:44

Batch Information

Analytical Batch: XGC9556
Analytical Method: SW8082A
Analyst: S.G
Analytical Date/Time: 10/11/16 19:44
Container ID: 1165773010-A

Prep Batch: XXX36454
Prep Method: SW3550C
Prep Date/Time: 10/04/16 20:40
Prep Initial Wt./Vol.: 22.72 g
Prep Extract Vol: 5 mL

Print Date: 10/18/2016 1:17:53PM

Results of **SP5P**

Client Sample ID: **SP5P**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773011
Lab Project ID: 1165773

Collection Date: 09/27/16 12:34
Received Date: 09/28/16 11:23
Matrix: Soil/Solid (dry weight)
Solids (%):95.2
Location:

Results by **Polychlorinated Biphenyls**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aroclor-1016	51.7	U	51.7	15.5	ug/Kg	1		10/11/16 20:13
Aroclor-1221	207	U	207	64.1	ug/Kg	1		10/11/16 20:13
Aroclor-1232	51.7	U	51.7	15.5	ug/Kg	1		10/11/16 20:13
Aroclor-1242	51.7	U	51.7	15.5	ug/Kg	1		10/11/16 20:13
Aroclor-1248	51.7	U	51.7	15.5	ug/Kg	1		10/11/16 20:13
Aroclor-1254	51.7	U	51.7	15.5	ug/Kg	1		10/11/16 20:13
Aroclor-1260	478		51.7	15.5	ug/Kg	1		10/11/16 20:13
Surrogates								
Decachlorobiphenyl (surr)	74		60-125		%	1		10/11/16 20:13

Batch Information

Analytical Batch: XGC9556
Analytical Method: SW8082A
Analyst: S.G
Analytical Date/Time: 10/11/16 20:13
Container ID: 1165773011-A

Prep Batch: XXX36454
Prep Method: SW3550C
Prep Date/Time: 10/04/16 20:40
Prep Initial Wt./Vol.: 22.867 g
Prep Extract Vol: 5 mL

Print Date: 10/18/2016 1:17:53PM

Results of **SP11**

Client Sample ID: **SP11**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773012
Lab Project ID: 1165773

Collection Date: 09/27/16 12:34
Received Date: 09/28/16 11:23
Matrix: Soil/Solid (dry weight)
Solids (%):91.9
Location:

Results by **Polychlorinated Biphenyls**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Aroclor-1016	53.7	U	53.7	16.1	ug/Kg	1		10/11/16 20:42
Aroclor-1221	215	U	215	66.6	ug/Kg	1		10/11/16 20:42
Aroclor-1232	53.7	U	53.7	16.1	ug/Kg	1		10/11/16 20:42
Aroclor-1242	53.7	U	53.7	16.1	ug/Kg	1		10/11/16 20:42
Aroclor-1248	53.7	U	53.7	16.1	ug/Kg	1		10/11/16 20:42
Aroclor-1254	53.7	U	53.7	16.1	ug/Kg	1		10/11/16 20:42
Aroclor-1260	494		53.7	16.1	ug/Kg	1		10/11/16 20:42
Surrogates								
Decachlorobiphenyl (surr)	75		60-125		%	1		10/11/16 20:42

Batch Information

Analytical Batch: XGC9556
Analytical Method: SW8082A
Analyst: S.G
Analytical Date/Time: 10/11/16 20:42
Container ID: 1165773012-A

Prep Batch: XXX36454
Prep Method: SW3550C
Prep Date/Time: 10/04/16 20:40
Prep Initial Wt./Vol.: 22.777 g
Prep Extract Vol: 5 mL

Print Date: 10/18/2016 1:17:53PM

Results of **SP1**

Client Sample ID: **SP1**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773013
Lab Project ID: 1165773

Collection Date: 09/27/16 13:42
Received Date: 09/28/16 11:23
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Constituents Metals**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.195		0.0500	0.0155	mg/L	25	(<5)	10/14/16 13:53

Batch Information

Analytical Batch: MMS9580
Analytical Method: SW6020A TCLP
Analyst: VDL
Analytical Date/Time: 10/14/16 13:53
Container ID: 1165773013-A

Prep Batch: MXT5448
Prep Method: SW3010A
Prep Date/Time: 10/14/16 08:20
Prep Initial Wt./Vol.: 2.5 mL
Prep Extract Vol: 25 mL

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Results of **SP2**

Client Sample ID: **SP2**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773014
Lab Project ID: 1165773

Collection Date: 09/27/16 13:25
Received Date: 09/28/16 11:23
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Constituents Metals**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.308		0.0500	0.0155	mg/L	25	(<5)	10/17/16 17:03

Batch Information

Analytical Batch: MMS9583
Analytical Method: SW6020A TCLP
Analyst: VDL
Analytical Date/Time: 10/17/16 17:03
Container ID: 1165773014-A

Prep Batch: MXT5448
Prep Method: SW3010A
Prep Date/Time: 10/14/16 08:20
Prep Initial Wt./Vol.: 2.5 mL
Prep Extract Vol: 25 mL

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Results of **SP3**

Client Sample ID: **SP3**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773015
Lab Project ID: 1165773

Collection Date: 09/27/16 13:13
Received Date: 09/28/16 11:23
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Constituents Metals**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.304		0.0500	0.0155	mg/L	25	(<5)	10/17/16 17:08

Batch Information

Analytical Batch: MMS9583
Analytical Method: SW6020A TCLP
Analyst: VDL
Analytical Date/Time: 10/17/16 17:08
Container ID: 1165773015-A

Prep Batch: MXT5448
Prep Method: SW3010A
Prep Date/Time: 10/14/16 08:20
Prep Initial Wt./Vol.: 2.5 mL
Prep Extract Vol: 25 mL

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Results of **SP4**

Client Sample ID: **SP4**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773016
Lab Project ID: 1165773

Collection Date: 09/27/16 12:50
Received Date: 09/28/16 11:23
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Constituents Metals**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	1.11		0.0500	0.0155	mg/L	25	(<5)	10/17/16 17:12

Batch Information

Analytical Batch: MMS9583
Analytical Method: SW6020A TCLP
Analyst: VDL
Analytical Date/Time: 10/17/16 17:12
Container ID: 1165773016-A

Prep Batch: MXT5448
Prep Method: SW3010A
Prep Date/Time: 10/14/16 08:20
Prep Initial Wt./Vol.: 2.5 mL
Prep Extract Vol: 25 mL

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Results of **SP5**

Client Sample ID: **SP5**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773017
Lab Project ID: 1165773

Collection Date: 09/27/16 12:34
Received Date: 09/28/16 11:23
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Constituents Metals**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	4.32		0.0500	0.0155	mg/L	25	(<5)	10/17/16 17:17

Batch Information

Analytical Batch: MMS9583
Analytical Method: SW6020A TCLP
Analyst: VDL
Analytical Date/Time: 10/17/16 17:17
Container ID: 1165773017-A

Prep Batch: MXT5448
Prep Method: SW3010A
Prep Date/Time: 10/14/16 08:20
Prep Initial Wt./Vol.: 2.5 mL
Prep Extract Vol: 25 mL

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Results of **SP6**

Client Sample ID: **SP6**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773018
Lab Project ID: 1165773

Collection Date: 09/27/16 12:26
Received Date: 09/28/16 11:23
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Constituents Metals**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.156		0.0500	0.0155	mg/L	25	(<5)	10/17/16 17:30

Batch Information

Analytical Batch: MMS9583
Analytical Method: SW6020A TCLP
Analyst: VDL
Analytical Date/Time: 10/17/16 17:30
Container ID: 1165773018-A

Prep Batch: MXT5448
Prep Method: SW3010A
Prep Date/Time: 10/14/16 08:20
Prep Initial Wt./Vol.: 2.5 mL
Prep Extract Vol: 25 mL

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Results of **SP10**

Client Sample ID: **SP10**
Client Project ID: **Torpedo Bldg Stockpile**
Lab Sample ID: 1165773019
Lab Project ID: 1165773

Collection Date: 09/27/16 13:13
Received Date: 09/28/16 11:23
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Constituents Metals**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.694		0.0500	0.0155	mg/L	25	(<5)	10/17/16 17:35

Batch Information

Analytical Batch: MMS9583
Analytical Method: SW6020A TCLP
Analyst: VDL
Analytical Date/Time: 10/17/16 17:35
Container ID: 1165773019-A

Prep Batch: MXT5448
Prep Method: SW3010A
Prep Date/Time: 10/14/16 08:20
Prep Initial Wt./Vol.: 2.5 mL
Prep Extract Vol: 25 mL

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Method Blank

Blank ID: LB1 for HBN 1745626 [TCLP/8570
Blank Lab ID: 1358730

Matrix: Solid/Soil (Wet Weight)

QC for Samples:
1165773013, 1165773014, 1165773015, 1165773016, 1165773017, 1165773018, 1165773019

Results by **SW6020A TCLP**

Parameter	Results	LOQ/CL	DL	Units
Lead	0.0188J	0.0500	0.0155	mg/L

Batch Information

Analytical Batch: MMS9580
Analytical Method: SW6020A TCLP
Instrument: Perkin Elmer Nexlon P5
Analyst: VDL
Analytical Date/Time: 10/14/2016 1:40:14PM

Prep Batch: MXT5448
Prep Method: SW3010A
Prep Date/Time: 10/14/2016 8:20:00AM
Prep Initial Wt./Vol.: 2.5 mL
Prep Extract Vol: 25 mL

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Method Blank

Blank ID: MB for HBN 1745645 [MXT/5448]
Blank Lab ID: 1358822

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1165773013, 1165773014, 1165773015, 1165773016, 1165773017, 1165773018, 1165773019

Results by **SW6020A TCLP**

Parameter	Results	LOQ/CL	DL	Units
Lead	0.00250U	0.00500	0.00155	mg/L

Batch Information

Analytical Batch: MMS9580
Analytical Method: SW6020A TCLP
Instrument: Perkin Elmer Nexlon P5
Analyst: VDL
Analytical Date/Time: 10/14/2016 1:44:43PM

Prep Batch: MXT5448
Prep Method: SW3010A
Prep Date/Time: 10/14/2016 8:20:00AM
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1165773 [MXT5448]
Blank Spike Lab ID: 1358823
Date Analyzed: 10/14/2016 13:49

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165773013, 1165773014, 1165773015, 1165773016, 1165773017, 1165773018, 1165773019

Results by **SW6020A TCLP**

Blank Spike (mg/L)

Parameter	Spike	Result	Rec (%)	CL
Lead	1	0.988	99	(88-115)

Batch Information

Analytical Batch: **MMS9580**
Analytical Method: **SW6020A TCLP**
Instrument: **Perkin Elmer Nexion P5**
Analyst: **VDL**

Prep Batch: **MXT5448**
Prep Method: **SW3010A**
Prep Date/Time: **10/14/2016 08:20**
Spike Init Wt./Vol.: 1 mg/L Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1358824
MS Sample ID: 1358826 MS
MSD Sample ID: 1358827 MSD

Analysis Date: 10/14/2016 13:53
Analysis Date: 10/14/2016 13:58
Analysis Date: 10/14/2016 14:02
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1165773013, 1165773014, 1165773015, 1165773016, 1165773017, 1165773018, 1165773019

Results by **SW6020A TCLP**

		Matrix Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Lead	0.195	10.0	10.3	101	10.0	10.0	98	88-115	2.74	(< 20)

Batch Information

Analytical Batch: MMS9580
Analytical Method: SW6020A TCLP
Instrument: Perkin Elmer Nexlon P5
Analyst: VDL
Analytical Date/Time: 10/14/2016 1:58:12PM

Prep Batch: MXT5448
Prep Method: Waters Digest for Metals by ICP-MS(TCLP)
Prep Date/Time: 10/14/2016 8:20:00AM
Prep Initial Wt./Vol.: 2.50mL
Prep Extract Vol: 25.00mL

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Method Blank

Blank ID: MB for HBN 1744860 [MXX/30268]
Blank Lab ID: 1357178

Matrix: Soil/Solid (dry weight)

QC for Samples:
1165773001, 1165773002, 1165773003, 1165773004, 1165773005, 1165773006, 1165773007

Results by **SW6020A**

Parameter	Results	LOQ/CL	DL	Units
Lead	0.100U	0.200	0.0620	mg/Kg

Batch Information

Analytical Batch: MMS9567
Analytical Method: SW6020A
Instrument: Perkin Elmer Nexlon P5
Analyst: VDL
Analytical Date/Time: 10/7/2016 1:58:44PM

Prep Batch: MXX30268
Prep Method: SW3050B
Prep Date/Time: 10/7/2016 7:52:22AM
Prep Initial Wt./Vol.: 1 g
Prep Extract Vol: 50 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1165773 [MXX30268]
Blank Spike Lab ID: 1357179
Date Analyzed: 10/07/2016 13:04

Matrix: Soil/Solid (dry weight)

QC for Samples: 1165773001, 1165773002, 1165773003, 1165773004, 1165773005, 1165773006, 1165773007

Results by **SW6020A**

Blank Spike (mg/Kg)

Parameter	Spike	Result	Rec (%)	CL
Lead	50	52.4	105	(84-118)

Batch Information

Analytical Batch: **MMS9567**
Analytical Method: **SW6020A**
Instrument: **Perkin Elmer Nexion P5**
Analyst: **EAB**

Prep Batch: **MXX30268**
Prep Method: **SW3050B**
Prep Date/Time: **10/07/2016 07:52**
Spike Init Wt./Vol.: 50 mg/Kg Extract Vol: 50 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1357181
MS Sample ID: 1357182 MS
MSD Sample ID: 1357183 MSD

Analysis Date: 10/07/2016 13:09
Analysis Date: 10/07/2016 13:13
Analysis Date: 10/07/2016 13:18
Matrix: Solid/Soil (Wet Weight)

QC for Samples: 1165773001, 1165773002, 1165773003, 1165773004, 1165773005, 1165773006, 1165773007

Results by **SW6020A**

		Matrix Spike (mg/Kg)			Spike Duplicate (mg/Kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Lead	5.57	49.8	54.2	98	48.7	55.2	102	84-118	1.73	(< 20)

Batch Information

Analytical Batch: MMS9567
Analytical Method: SW6020A
Instrument: Perkin Elmer Nexlon P5
Analyst: VDL
Analytical Date/Time: 10/7/2016 1:13:43PM

Prep Batch: MXX30268
Prep Method: Soils/Solids Digest for Metals by ICP-MS
Prep Date/Time: 10/7/2016 7:52:22AM
Prep Initial Wt./Vol.: 1.00g
Prep Extract Vol: 50.00mL

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Method Blank

Blank ID: MB for HBN 1744699 [SPT/10014]
Blank Lab ID: 1356584

Matrix: Soil/Solid (dry weight)

QC for Samples:
1165773001, 1165773002, 1165773003, 1165773004, 1165773005, 1165773006, 1165773007, 1165773008, 1165773009, 1165773010, 1165773011, 1165773012

Results by **SM21 2540G**

Parameter	Results	LOQ/CL	DL	Units
Total Solids	100			%

Batch Information

Analytical Batch: SPT10014
Analytical Method: SM21 2540G
Instrument:
Analyst: RJA
Analytical Date/Time: 10/4/2016 5:54:00PM

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Duplicate Sample Summary

Original Sample ID: 1165769009
Duplicate Sample ID: 1356586
QC for Samples:

Analysis Date: 10/04/2016 17:54
Matrix: Soil/Solid (dry weight)

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	72.8	73.5	%	0.96	(< 15)

Batch Information

Analytical Batch: SPT10014
Analytical Method: SM21 2540G
Instrument:
Analyst: RJA

Print Date: 10/18/2016 1:18:05PM

Duplicate Sample Summary

Original Sample ID: 1165769018
Duplicate Sample ID: 1356587
QC for Samples:
1165773001

Analysis Date: 10/04/2016 17:54
Matrix: Soil/Solid (dry weight)

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	74.2	76.3	%	2.70	(< 15)

Batch Information

Analytical Batch: SPT10014
Analytical Method: SM21 2540G
Instrument:
Analyst: RJA

Print Date: 10/18/2016 1:18:05PM

Duplicate Sample Summary

Original Sample ID: 1165773001
Duplicate Sample ID: 1356588

Analysis Date: 10/04/2016 17:54
Matrix: Soil/Solid (dry weight)

QC for Samples:

1165773001, 1165773002, 1165773003, 1165773004, 1165773005, 1165773006, 1165773007, 1165773008, 1165773009, 1165773010, 1165773011, 1165773012

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	91.4	91.3	%	0.13	(< 15)

Batch Information

Analytical Batch: SPT10014
Analytical Method: SM21 2540G
Instrument:
Analyst: RJA

Print Date: 10/18/2016 1:18:05PM

Duplicate Sample Summary

Original Sample ID: 1165779015
Duplicate Sample ID: 1356589

Analysis Date: 10/04/2016 17:54
Matrix: Soil/Solid (dry weight)

QC for Samples:

1165773002, 1165773003, 1165773004, 1165773005, 1165773006, 1165773007, 1165773008, 1165773009, 1165773010, 1165773011, 1165773012

Results by **SM21 2540G**

NAME	Original	Duplicate	Units	RPD (%)	RPD CL
Total Solids	86.4	86.5	%	0.14	(< 15)

Batch Information

Analytical Batch: SPT10014
Analytical Method: SM21 2540G
Instrument:
Analyst: RJA

Print Date: 10/18/2016 1:18:05PM

Method Blank

Blank ID: MB for HBN 1744653 [XXX/36454]
Blank Lab ID: 1356505

Matrix: Soil/Solid (dry weight)

QC for Samples:
1165773008, 1165773009, 1165773010, 1165773011, 1165773012

Results by **SW8082A**

Parameter	Results	LOQ/CL	DL	Units
Aroclor-1016	25.0U	50.0	15.0	ug/Kg
Aroclor-1221	100U	200	62.0	ug/Kg
Aroclor-1232	25.0U	50.0	15.0	ug/Kg
Aroclor-1242	25.0U	50.0	15.0	ug/Kg
Aroclor-1248	25.0U	50.0	15.0	ug/Kg
Aroclor-1254	25.0U	50.0	15.0	ug/Kg
Aroclor-1260	25.0U	50.0	15.0	ug/Kg
Surrogates				
Decachlorobiphenyl (surr)	90	60-125		%

Batch Information

Analytical Batch: XGC9556
Analytical Method: SW8082A
Instrument: HP 6890 Series II ECD SV L R
Analyst: S.G
Analytical Date/Time: 10/11/2016 1:58:00PM

Prep Batch: XXX36454
Prep Method: SW3550C
Prep Date/Time: 10/4/2016 8:40:52PM
Prep Initial Wt./Vol.: 22.5 g
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1165773 [XXX36454]
Blank Spike Lab ID: 1356506
Date Analyzed: 10/11/2016 14:13

Matrix: Soil/Solid (dry weight)

QC for Samples: 1165773008, 1165773009, 1165773010, 1165773011, 1165773012

Results by **SW8082A**

Blank Spike (ug/Kg)

Parameter	Spike	Result	Rec (%)	CL
Aroclor-1016	222	167	75	(47-134)
Aroclor-1260	222	222	100	(53-140)
Surrogates				
Decachlorobiphenyl (surr)	222	89	89	(60-125)

Batch Information

Analytical Batch: **XGC9556**
Analytical Method: **SW8082A**
Instrument: **HP 6890 Series II ECD SV L R**
Analyst: **S.G**

Prep Batch: **XXX36454**
Prep Method: **SW3550C**
Prep Date/Time: **10/04/2016 20:40**
Spike Init Wt./Vol.: 222 ug/Kg Extract Vol: 5 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1165710022
MS Sample ID: 1356507 MS
MSD Sample ID: 1356508 MSD

Analysis Date: 10/11/2016 14:27
Analysis Date: 10/11/2016 14:42
Analysis Date: 10/11/2016 14:56
Matrix: Soil/Solid (dry weight)

QC for Samples: 1165773008, 1165773009, 1165773010, 1165773011, 1165773012

Results by **SW8082A**

		Matrix Spike (ug/Kg)			Spike Duplicate (ug/Kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Aroclor-1016	26.4U	231	190	82	234	180	77	47-134	5.12	(< 30)
Aroclor-1260	26.4U	231	222	96	234	215	92	53-140	3.09	(< 30)
Surrogates										
Decachlorobiphenyl (surr)		231	202	87	234	204	87	60-125	1.17	

Batch Information

Analytical Batch: XGC9556
Analytical Method: SW8082A
Instrument: HP 6890 Series II ECD SV L R
Analyst: S.G
Analytical Date/Time: 10/11/2016 2:42:00PM

Prep Batch: XXX36454
Prep Method: Sonication Extraction Soil SW8080 PCB
Prep Date/Time: 10/4/2016 8:40:52PM
Prep Initial Wt./Vol.: 22.95g
Prep Extract Vol: 5.00mL

Print Date: 10/18/2016 1:18:09PM

SGS

SGS North America Inc.
CHAIN OF CUSTODY RECORD

1165773

Locations Nationwide
aska Maryland
ew Jersey New York
orth Carolina Indiana
/est Virgina Kentucky
www.us.sgs.com

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 1

CLIENT: Travis Peterson

CONTACT: Erik Mundahl — PHONE #:

PROJECT NAME: Torpedo Bldg Stockpile — Project/ PWSID/ PERMIT#:

REPORTS TO: Erik Mundahl — E-MAIL:

INVOICE TO: Travis Peterson — QUOTE #: — P.O. #: 1563-03

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Pres: Type: Comp Grab MI (Multi-incremental)	TCLP Lead	Total Pb	PCBs							REMARKS/ LOC ID
						Section 3 Preservative	None	None	None							
1A 13A	SP1	9/27/16	13:42	Soil	1	G	X	X								
2A 8A	SP1P		13:42		1	G			X							
2A 14A	SP2		13:25		1	G	X	X								
9A	SP2P		13:25		1	G			X							
3A 15A	SP3		13:13		1	G	X	X								
4A 16A	SP4		12:50		1	G	X	X								
10A	SP4P		12:50		1	G			X							
5A 17A	SP5		12:34		1	G	X	X								
11A	SP5P		12:34		1	G			X							
6A 18A	SP6		12:26		1	G	X	X								

Section 5

	Date	Time	
Relinquished By: (1)	9/28/16	11:23	Received By:
Relinquished By: (2)			Received By:
Relinquished By: (3)			Received By:
Relinquished By: (4)	9/28/16	11:23	Received For Laboratory By:

Section 4

DOD Project? Yes No

Cooler ID:

Data Deliverable Requirements:

Requested Turnaround Time and/or Special Instructions:

Temp Blank °C: 1:2.4 #D20 2:3.9 #D12 or Ambient [ ]

(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT IF on both

(See attached Sample Receipt Form)

Hand Delivered

[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

SGS North America Inc.
CHAIN OF CUSTODY RECORD

1165773

ride
- Maryland
- New York
- Indiana
- Kentucky

..com

1

CLIENT: Travis Peterson

CONTACT: Erik Mundahl — PHONE NO:

PROJECT NAME: Torpedo Bldg Stockpile — PROJECT/ PWSID/ PERMIT# :

REPORTS TO: Erik Mundahl — EMAIL:

INVOICE TO: Travis/Peterson — QUOTE #:

P.O. #: 1563-03

SGS Reference #:

page 2 of 2

2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	Preservatives Used	Analysis Required ③ TCLP Lead	Total Pb	PCBs	REMARKS/ LOC ID
7A 19A	SP10	9/27/16	13:13	Soil	1	G		X	X		
12A	SP11	1	12:34	1	1	G				X	

5

Collected/Relinquished By:(1)	Date	Time	Received By:
	9/28/16	11:23	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date 9/28/16	Time 11:23	Received For Laboratory By:

4

DOD Project? YES NO

Cooler ID _____

Data Deliverable Requirements:

Requested Turnaround Time and-or Special Instructions:

Temperature Blank °C: _____

or Ambient [ ]

(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

(See attached Sample Receipt Form)

❑ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
❑ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

1165773

SGS

SGS North America Inc.
200 W. Potter Drive, Anchorage, AK 99518
phone (907) 562-2343, fax (907) 561-5301

Characterization of TCLP Samples for LIMS Login

Date Characterized: 9/28/16 **Analyst:** NCW

Sample Container ID:	Matrix	%	Is sufficient volume/mass available?	Notes:
(13)(14)(15)(16) (17)(18)(19)A	Xylene miscible (Top layer * = matrix 3 **)		(Yes) / No	If multiple jars were received, were they consistent? Yes / No / (NA)
	Water miscible (Middle layer = matrix 6)			If biphasic, was there **only** one layer with sufficient sample ***? Yes / No / (NA)
	(Solid) (Bottom layer = matrix 7 or 2 if % solids required)	100%		Sample description/other observations: Soil
	Xylene miscible (Top layer * = matrix 3 **)		Yes / No	If multiple jars were received, were they consistent? Yes / No / NA
	Water miscible (Middle layer = matrix 6)			If biphasic, was there **only** one layer with sufficient sample ***? Yes / No / NA
	Solid (Bottom layer = matrix 7 or 2 if % solids required)			Sample description/other observations:
	Xylene miscible (Top layer * = matrix 3 **)		Yes / No	If multiple jars were received, were they consistent? Yes / No / NA
	Water miscible (Middle layer = matrix 6)			If biphasic, was there **only** one layer with sufficient sample ***? Yes / No / NA
	Solid (Bottom layer = matrix 7 or 2 if % solids required)			Sample description/other observations:
	Xylene miscible (Top layer * = matrix 3 **)		Yes / No	If multiple jars were received, were they consistent? Yes / No / NA
	Water miscible (Middle layer = matrix 6)			If biphasic, was there **only** one layer with sufficient sample ***? Yes / No / NA
	Solid (Bottom layer = matrix 7 or 2 if % solids required)			Sample description/other observations:
	Xylene miscible (Top layer * = matrix 3 **)		Yes / No	If multiple jars were received, were they consistent? Yes / No / NA
	Water miscible (Middle layer = matrix 6)			If biphasic, was there **only** one layer with sufficient sample ***? Yes / No / NA
	Solid (Bottom layer = matrix 7 or 2 if % solids required)			Sample description/other observations:

Remember: **** = Chlorinated oils will be heavier than water and present as the bottom later.***
***** = Oils must be filterable to be logged in as matrix 3. Nonfilterable oils must be logged in as matrix 7.***
****** = Refer to F078 'Characterization of TCLP Samples for LIMS' to determine if there's sufficent volume/mass.***

SGS

e-SAMPLE RECEIPT FORM

1165773

Review Criteria	Y/N (yes/no)	Exceptions Noted below
	Y	exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	Y	1-F on Both
COC accompanied samples?	Y	
		**exemption permitted if chilled & collected <8hrs ago or chlling not required (i.e., waste, oil)
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Y	Cooler ID: 1 @ 2.4 °C Therm ID: D20
	Y	Cooler ID: 2 @ 3.9 °C Therm ID: D12
		Cooler ID: @ °C Therm ID:
		Cooler ID: @ °C Therm ID:
		Cooler ID: @ °C Therm ID:
If >6°C, were samples collected <8 hours ago?		
If <0°C, were sample containers ice free?		
If samples received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
		Note: Refer to form F-083 "Sample Guide" for hold times.
Were samples received within hold time?	Y	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	Y	
**Note: If times differ <1hr, record details & login per COC.		
Were analyses requested unambiguous?	Y	
		***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Y	Samples for Total and TCLP Lead will come out of the same container.
IF APPLICABLE		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?		
Were all VOA vials free of headspace (i.e., bubbles ≤ 6mm)?		
Were all soil VOAs field extracted with MeOH+BFB?		

Note to Client: Any "no" answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1165773001-A	No Preservative Required	OK			
1165773002-A	No Preservative Required	OK			
1165773003-A	No Preservative Required	OK			
1165773004-A	No Preservative Required	OK			
1165773005-A	No Preservative Required	OK			
1165773006-A	No Preservative Required	OK			
1165773007-A	No Preservative Required	OK			
1165773008-A	No Preservative Required	OK			
1165773009-A	No Preservative Required	OK			
1165773010-A	No Preservative Required	OK			
1165773011-A	No Preservative Required	OK			
1165773012-A	No Preservative Required	OK			
1165773013-A	No Preservative Required	OK			
1165773014-A	No Preservative Required	OK			
1165773015-A	No Preservative Required	OK			
1165773016-A	No Preservative Required	OK			
1165773017-A	No Preservative Required	OK			
1165773018-A	No Preservative Required	OK			
1165773019-A	No Preservative Required	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM- The container was received damaged.
FR- The container was received frozen and not usable for Bacteria or BOD analyses.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

Laboratory Data Review Checklist

Completed by:	Erik Mundah, P.E.		
Title:	Environmental Engineer	Date:	10/19/2016
CS Report Name:		Report Date:	10/18/2016
Consultant Firm:	Travis/Peterson Environmental Consulting, Inc.		
Laboratory Name:	SGS North America, Inc.	Laboratory Report Number:	1165773
ADEC File Number:	2542.38.010	ADEC RecKey Number:	

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

(●) Yes ( ) No ( ) NA (Please explain.) 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 (●) NA (Please explain) Comments:

All samples analyzed by SGS.

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

b. Correct analyses requested?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

3. Laboratory Sample Receipt Documentation

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

(●) Yes ( ) No ( ) NA (Please explain) Comments:

All cooler temperature blanks were recorded within range at time of receipt.

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

(•) Yes ( ) No ( ) NA (Please explain) Comments:

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

(•) Yes ( ) No ( ) NA (Please explain) Comments:

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

( ) Yes ( ) No (•) NA (Please explain) Comments:

There were no discrepancies.

e. Data quality or usability affected? (Please explain)

Comments:

Data quality and usability is unaffected.

4. Case Narrative

a. Present and understandable?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

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

(•) Yes ( ) No ( ) NA (Please explain) Comments:

No QC failures. If there had been, would be identified by lab in Case Narrative.

c. Were all corrective actions documented?

( ) Yes ( ) No (•) NA (Please explain) Comments:

No corrective actions necessary.

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

Comments:

5. Samples Results

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

(•) Yes ( ) No ( ) NA (Please explain) Comments:

b. All applicable holding times met?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

c. All soils reported on a dry weight basis?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

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

(•) Yes ( ) No ( ) NA (Please explain) Comments:

See Checklist Supplement.

e. Data quality or usability affected? (Please explain)

Comments:

6. QC Samples

a. Method Blank

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

(•) Yes ( ) No ( ) NA (Please explain) Comments:

ii. All method blank results less than PQL?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iii. If above PQL, what samples are affected? Comments:

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

○ Yes ○ No ◉ NA (Please explain) Comments:

No samples affected.

v. Data quality or usability affected? (Please explain) Comments:

No samples affected.

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 ◉ NA (Please explain) Comments:

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

◉ Yes ○ No ○ NA (Please explain) Comments:

No metals or inorganics sampled.

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 ○ NA (Please explain) 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/DMSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

◉ Yes ○ No ○ NA (Please explain) Comments:

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

Comments:

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

(•) Yes ( ) No (•) NA (Please explain) Comments:

No affected samples.

vii. Data quality or usability affected? (Please explain) Comments:

No affected samples

c. Surrogates - Organics Only

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

(•) Yes ( ) No ( ) NA (Please explain) 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 ( ) NA (Please explain) Comments:

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

( ) Yes ( ) No (•) NA (Please explain) Comments:

No affected samples.

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

No affected samples.

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

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

( ) Yes ( ) No (•) NA (Please explain.) Comments:

No volatile analysis.

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 (•) NA (Please explain.) Comments:

No volatile analysis.

iii. All results less than PQL?

○ Yes ○ No ◉ NA (Please explain.) Comments:

No volatile analysis.

iv. If above PQL, what samples are affected?

Comments:

No volatile analysis.

v. Data quality or usability affected? (Please explain.)

Comments:

No volatile analysis.

e. Field Duplicate

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

◉ Yes ○ No ○ NA (Please explain) Comments:

ii. Submitted blind to lab?

◉ Yes ○ No ○ NA (Please explain.) 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 ○ NA (Please explain) Comments:

See checklist supplement.

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

○ Yes ◉ No ○ NA (Please explain) Comments:

Unlikely. See checklist supplement.

f. Decontamination or Equipment Blank (if applicable)

○ Yes ○ No ◉ NA (Please explain) Comments:

No equipment blank used.

i. All results less than PQL?

○ Yes ○ No ◉ NA (Please explain) Comments:

NA

ii. If above PQL, what samples are affected?

Comments:

NA

iii. Data quality or usability affected? (Please explain.)

Comments:

NA

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

a. Defined and appropriate?

○ Yes ◉ No ○ NA (Please explain) Comments:

No other data flags.

Reset Form

Laboratory Data Review Checklist Supplement Narrative
Unalaska Airport TCLP Lead Sampling

5. d.
SGS laboratory uses the limit of quantitation (LOQ) instead of PQL.

6. e. iii. iv.
The RPD for field duplicate samples were greater than the specified DQO for soil (50%) for soil sample SP3 and field duplicate SP10 for Total Lead analysis. The observed RPD was 56%. This discrepancy is likely due to a non-homogenous duplicate sample. For metals analysis, it is likely that a metal lead fragment was present in the sample SP3. Samples were not sieved during the collection process, increasing the potential for metal fragments to be present in the samples. The observed Total Lead concentrations in SP3 were atypically high compared to the other soils collected in this investigation. The field duplicate sample was more representative of the concentrations typically observed.

With the observed RPD slightly above the specified DQO, it is unlikely that the data usability is affected.

Unalaska Airport TCLP Lead Sampling Site Work: Photo Log – September, 2016

Soil stockpile #6 with vegetation grown visible once uncovered.	Soil stockpile #6 with vegetation grown visible once uncovered.
	

Vegetation growth visible on all soil stockpiles.	Vegetation grown visible on soil stockpile #4 once uncovered.
	

Location _____ Date _____

Project / Client _____

Location Dutch Harbor, AK Date 9/27/16

Project / Client Western Power Engineering

50°F, partly cloudy, light winds

Pete Jeppesen 907-359-2677 cell
907-581-1610 office

Stockpile Sampling

ID	Depth	Time	Lab
SP1	12"/24"	13:42	TCLP Pb Total Pb
SP1P	12"/24"	13:42	PCBs
SP2	12"/24"	13:25	TCLP Pb Total Pb
SP2P	12"/24"	13:25	PCBs
SP3	12"/24"	13:13	TCLP Pb Total Pb
SP4	12"/24"	12:50	TCLP Pb Total Pb
SP4P	12"/24"	12:50	PCBs
SP5	12"/24"	12:34	TCLP Pb Total Pb
SP5P	12"/24"	12:34	PCBs
SP6	12"/24"	12:26	TCLP Pb Total Pb

*SP10 is field duplicate of SP3 @ 13:13

*SP11 is field duplicate of SP5P @ 12:34

Notes:

- Upon arrival all stockpiles securely covered and above ponded water/puddles on property.
- Stockpiles w/ semi-transparent cover were heavily vegetated, particularly on top and leeward side.
- Stockpiles w/ black covers had significant fungal growth due to moisture and darkness.

Location Dutch Harbor, AK Date 9/27/16

Project / Client Western Power Engineering

Notes:

- No stockpiles exhibited any hydrocarbon odors.
- No soil staining of stockpiles was observed.
- When sifting soil for sample collection, no metal, battery components, or paint chips observed that could indicated lead contamination
- Only Stockpiles 3 and 6 previously tested for PCBs, to fully characterize all soils, samples for PCB analysis were collected from stockpiles, 1, 2, 4, 5 at request of WPE
- No indications of PCB contamination were observed that initiated this request. Characterization done to ease possible soil disposal process.
- Samples all collected as 5-point composite samples from locations within each stockpile previously sampled (as near as possible)
- Upon completion of sample collection, Stockpiles all recovered.

Location Date

Project / Client