



22-May-2017

Dan Rusiecki
ERM, Inc
3352 128th Avenue
Holland, MI 49424

Re: **USS (0407800)**

Work Order: **1705848**

Dear Dan,

ALS Environmental received 1 sample on 15-May-2017 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 9.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Beamish".

Electronically approved by: Tom Beamish

Tom Beamish
Senior Project Manager

Certificate No: IN: C-MI-08

Report of Laboratory Analysis

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185

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Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: ERM, Inc
Project: USS (0407800)
Work Order: 1705848

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1705848-01	EL-EW-E6 Composite	Soil		05/05/17 12:00	05/15/17 08:30	<input type="checkbox"/>

Client: ERM, Inc
Project: USS (0407800)
WorkOrder: 1705848

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

Client: ERM, Inc
Project: USS (0407800)
Work Order: 1705848

Case Narrative

Samples for the above noted Work Order were received on 05/15/17. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Extractable Organics:

No deviations or anomalies were noted.

Wet Chemistry:

Batch R211894, Method MOISTURE, Sample 1705848-01A DUP: The RPD is outside of test-defined limits. The reported Moisture result should be considered estimated.

No other deviations or anomalies were noted.

ALS Group, USA**Date:** 22-May-17**Client:** ERM, Inc**Project:** USS (0407800)**Work Order:** 1705848**Sample ID:** EL-EW-E6 Composite**Lab ID:** 1705848-01**Collection Date:** 05/05/17 12:00 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
PCBS			SW8082		Prep: SW3546 5/17/17 14:28	Analyst: EB
Aroclor 1016	ND		0.077	mg/Kg-dry	1	05/18/17 11:41 PM
Aroclor 1221	ND		0.077	mg/Kg-dry	1	05/18/17 11:41 PM
Aroclor 1232	ND		0.077	mg/Kg-dry	1	05/18/17 11:41 PM
Aroclor 1242	ND		0.077	mg/Kg-dry	1	05/18/17 11:41 PM
Aroclor 1248	ND		0.077	mg/Kg-dry	1	05/18/17 11:41 PM
Aroclor 1254	ND		0.077	mg/Kg-dry	1	05/18/17 11:41 PM
Aroclor 1260	ND		0.077	mg/Kg-dry	1	05/18/17 11:41 PM
Surr: Decachlorobiphenyl	89.0		40-140	%REC	1	05/18/17 11:41 PM
Surr: Tetrachloro-m-xylene	81.2		45-124	%REC	1	05/18/17 11:41 PM
MOISTURE			SW3550C			Analyst: RZM
Moisture	15		0.050	% of sample	1	05/15/17 05:09 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ERM, Inc
Work Order: 1705848
Project: USS (0407800)

QC BATCH REPORT

Batch ID: **102045** Instrument ID **GC14** Method: **SW8082**

MBLK				Sample ID: PBLKS1-102045-102045				Units: µg/Kg			Analysis Date: 05/18/17 10:29 PM		
Client ID:			Run ID: GC14_170518B				SeqNo: 4439130		Prep Date: 05/17/17		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Aroclor 1016	ND	67											
Aroclor 1221	ND	67											
Aroclor 1232	ND	67											
Aroclor 1242	ND	67											
Aroclor 1248	ND	67											
Aroclor 1254	ND	67											
Aroclor 1260	ND	67											
Surr: Decachlorobiphenyl	31.29	0	33.3	0	94	40-140		0					
Surr: Tetrachloro-m-xylene	31.35	0	33.3	0	94.1	45-124		0					

LCS				Sample ID: PLCSS1-102045-102045				Units: µg/Kg		Analysis Date: 05/18/17 10:43 PM	
Client ID:			Run ID: GC14_170518B			SeqNo: 4439131		Prep Date: 05/17/17		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Aroclor 1016	770.1	67	833	0	92.4	50-130	0				
Aroclor 1260	735.6	67	833	0	88.3	50-130	0				
<i>Surr: Decachlorobiphenyl</i>	31.88	0	33.3	0	95.7	40-140	0				
<i>Surr: Tetrachloro-m-xylene</i>	28.21	0	33.3	0	84.7	45-124	0				

MS				Sample ID: 1705884-76C MS				Units: µg/Kg		Analysis Date: 05/18/17 11:12 PM	
Client ID:			Run ID: GC14_170518B			SeqNo: 4439133		Prep Date: 05/17/17		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Aroclor 1016	760.7	65	812.6	0	93.6	40-140	0				
Aroclor 1260	788.5	65	812.6	0	97	40-140	0				
Surr: Decachlorobiphenyl	30.93	0	32.48	0	95.2	40-140	0				
Surr: Tetrachloro-m-xylene	27.07	0	32.48	0	83.3	45-124	0				

MSD				Sample ID: 1705884-76C MSD				Units: µg/Kg		Analysis Date: 05/18/17 11:26 PM	
Client ID:			Run ID: GC14_170518B			SeqNo: 4439134		Prep Date: 05/17/17		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Aroclor 1016	757.2	65	813.5	0	93.1	40-140	760.7	0.463	50		
Aroclor 1260	798.2	65	813.5	0	98.1	40-140	788.5	1.22	50		
Surr: Decachlorobiphenyl	32.06	0	32.52	0	98.6	40-140	30.93	3.58	50		
Surr: Tetrachloro-m-xylene	27.91	0	32.52	0	85.8	45-124	27.07	3.04	50		

The following samples were analyzed in this batch: 1705848-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc
Work Order: 1705848
Project: USS (0407800)

QC BATCH REPORT

Batch ID: **R211894** Instrument ID **MOIST** Method: **SW3550C**

MBLK				Sample ID: WBLKS-R211894				Units: % of sample			Analysis Date: 05/15/17 05:09 PM												
Client ID:				Run ID: MOIST_170515A				SeqNo: 4430253			Prep Date:		DF: 1										
Analyte				Result		PQL		SPK Val		SPK Ref Value		%REC		Control Limit		RPD Ref Value		%RPD		RPD Limit		Qual	

Moisture ND 0.050

LCS		Sample ID: LCS-R211894				Units: % of sample		Analysis Date: 05/15/17 05:09 PM		
Client ID:		Run ID: MOIST_170515A		SeqNo: 4430252		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP				Sample ID: 1705848-01A DUP				Units: % of sample			Analysis Date: 05/15/17 05:09 PM												
Client ID: EL-EW-E6 Composite				Run ID: MOIST_170515A				SeqNo: 4430247			Prep Date:		DF: 1										
Analyte				Result		PQL		SPK Val		SPK Ref Value		%REC		Control Limit		RPD Ref Value		%RPD		RPD Limit		Qual	

Moisture 16.27 0.050 0 0 0 15.46 5.11 5 R

The following samples were analyzed in this batch:

1705848-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Cincinnati, OH
+1 513 733 5336

Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511

Holland, MI
+1 616 399 6070

Chain of Custody Form

Page 1 of 1

COC ID: 43938

Houston, TX
+1 281 530 5656

Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903

Salt Lake City, UT
+1 801 266 7700

South Charleston, WV
+1 304 356 3168

York, PA
+1 717 505 5280

Customer Information				Project Information			ALS Project Manager: <u>BB</u> ALS Work Order #: <u>1205848</u>												
Purchase Order		Project Name		Parameter/Method Request for Analysis															
Work Order		Project Number		A															
Company Name		Bill To Company		B															
Send Report To		Invoice Attn		C															
Address		Address		D															
City/State/Zip		City/State/Zip		E															
Phone		Phone		F															
Fax		Fax		G															
e-Mail Address		e-Mail Address		H															
				I															
				J															
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	EL-EW-E6 Composite	5/15/17	12:00pm	S	8	1	X												
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
Sampler(s) Please Print & Sign		Shipment Method		Turnaround Time in Business Days (BD)				Results Due Date:											
<u>Don Rusiecki / Pam Kwiecki</u>		<u>Hand</u>		<input checked="" type="checkbox"/> 10 BD <input type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD															
Relinquished by:		Date:	Time:	Received by:		Notes:													
<u>Don Kwiecki</u>		<u>5/15/17</u>	<u>8:30am</u>	<u>[Signature]</u>															
Relinquished by:		Date:	Time:	Received by (Laboratory):		Cooler ID	Cooler Temp	QC Package: (Check One Box Below)											
<u>[Signature]</u>		<u>5/15/17</u>	<u>0830</u>	<u>[Signature]</u>		<u>SP2</u>	<u>10.0°C</u>	<input type="checkbox"/> Level II Std QC <input type="checkbox"/> TRRP Checklist <input type="checkbox"/> Level III Std QC/Raw Data <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> Level IV SW846/CLP <input type="checkbox"/> Other											
Logged by (Laboratory):		Date:	Time:	Checked by (Laboratory):															
<u>DFS</u>		<u>5/15/17</u>	<u>0915</u>	<u>BB</u>															
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035																			

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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Sample Receipt Checklist

Client Name: ERM-HOLL

Date/Time Received: 15-May-17 08:30

Work Order: 1705848

Received by: DS

Checklist completed by *Diane Shaw* 15-May-17
eSignature Date

Reviewed by: *Tom Bramish* 15-May-17
eSignature Date

Matrices: Soil

Carrier name: Client

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>6.0/6.0 c</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>5/15/2017 9:18:02 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: