APPENDIX A

Source Material Sampling Analytical Laboratory Report and Data Validation

ANALYTICAL REPORT

September 01, 2023

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group:	L1643943
Samples Received:	08/09/2023
Project Number:	2060.005
Description:	OREGONDEQ-JH Baxter Offsite Investigation

Report To:

Don Hanson
165 E. 7th Avenue
Suite 100
Eugene, OR 97401

Entire Report Reviewed By:

Haley Torrence
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

LFP_SM-01 L1643943-01 Solid

Collected by: Genevieve S.
Collected date/time: 08/01/23 11:10
Received date/time: 08/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG2111560	1	09/01/23 00:00	09/01/23 00:00	-	Minneapolis, MN 55414

LFP_SM-02 L1643943-02 Solid

Collected by: Genevieve S.
Collected date/time: 08/01/23 11:15
Received date/time: 08/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG2111560	1	09/01/23 00:00	09/01/23 00:00	-	Minneapolis, MN 55414

REX_SM-01 L1643943-03 Solid

Collected by: Genevieve S.
Collected date/time: 08/01/23 12:00
Received date/time: 08/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG2111560	1	09/01/23 00:00	09/01/23 00:00	-	Minneapolis, MN 55414

REX_SM-02 L1643943-04 Solid

Collected by: Genevieve S.
Collected date/time: 08/01/23 12:05
Received date/time: 08/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG2111560	1	09/01/23 00:00	09/01/23 00:00	-	Minneapolis, MN 55414

DSG_SM-02 L1643943-05 Solid

Collected by: Genevieve S.
Collected date/time: 08/01/23 13:05
Received date/time: 08/09/23 09:00

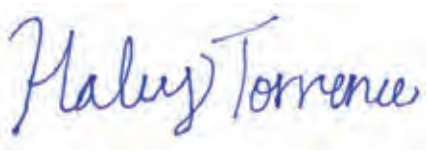
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG2111560	1	09/01/23 00:00	09/01/23 00:00	-	Minneapolis, MN 55414

DSG_SM-03 L1643943-06 Solid

Collected by: Genevieve S.
Collected date/time: 08/01/23 13:10
Received date/time: 08/09/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG2111560	1	09/01/23 00:00	09/01/23 00:00	-	Minneapolis, MN 55414

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Haley Torrence
Project Manager

Project Narrative

L1643943 -01, -02, -03, -04, -05, -06 contains subout data that is included after the chain of custody.

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

SDG	Sample Delivery Group.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

State of Oregon Chain of Custody

Agency, Authorized Purchaser or Agent: GSI Water Solutions for ODEQ	**Contract Laboratory Name:** Pace Analytical National
Send Lab Report To: Don Hanson, RG Address: 165 E. 7th Avenue, Suite 100, Eugene, OR 97401 Tel #: 541-687-7349 Email: don.hanson@deq.state.or.us, jbale@gsiws.com, cmartin@gsiws.com, mfargher@gsiws.com, GIS@gsiws.com	**Lab Batch #:** **Invoice:** ODEQ/Business Office, 700 NE Multnomah Street, Suite 600, Portland, OR 97232 Email: DEQEXP@deq.state.or.us

Lab Selection Criteria: Proximity (if TAT < 48 hrs); Prior work on same project; Cost (for anticipated analyses) [boxed]; Other labs disqualified or unable to perform requested services; Emergency work

Turn Around Time: 10 days (std.) [boxed]; 5 days; 72 hours; 48 hours; 24 hours; Other ______

Project Name: OREGON DEQ-JH BAXTER OFFSITE INVESTIGATION (TO #2060.005)

Project #: JH Baxter Offsite Investigation

Sampler Name: Genevieve Schutzius

J055

Sample Preservative: Solids: NA

Requested Analyses: Dioxin/Furans by 1613B

Sample ID#	Collection Date	Collection Time	Matrix	Number of Containers	Dioxin/Furans by 1613B	Comments
						46B943
LFP_SM-01	8/1/23	1110	SO	1	✓	-01
LFP_SM-02	↓	1115	↓	↓	✓	-02
REX_SM-01	↓	1200	↓	↓	✓	-03
REX_SM-02	↓	1205	↓	↓	✓	-04
DSG_SM-02	↓	1305	↓	↓	✓	-05
DSG_SM-03	↓	1310	↓	↓	✓	-06

NOTES: **Conduct Incremental Sampling Methodology processing prior to analysis.**
Contact Chris Martin (503-432-5979, cmartin@gsiws.com) or Josh Bale (530-276-4188, jbale@gsiws.com) with questions. Include DEQ EDD with final lab report.

Relinquished By: Genevieve Schutzius	Agency/Agent: GSI	Received By:	Agency/Agent:
Signature: [signature]	Time & Date: 8/8/23 930	Signature:	Time & Date:
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature: [signature] 8/9/23 0900	Time & Date:

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1998-07 AND PRICE AGREEMENT # 5903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE ... 'S ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

Sample Receipt Checklist

COC Seal Present/Intact: Y ✓N
COC Signed/Accurate: ✓Y N
Bottles arrive intact: ✓Y N
Correct bottles used: ✓Y N
Sufficient volume sent: ✓Y N

If Applicable
VOA Zero Headspace: Y N
Pres.Correct/Check: Y N

GBAB 3.1+0=3.1
7022 1770 5969

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Client Services
Pace Analytical National
12065 Lebanon Rd
Mt. Juliet TN 37122

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Prepared Date:
September 1, 2023

Report Information:

Pace Project #: 10665016
Sample Receipt Date: 08/11/2023
Client Project #: L1643943 WG2111560
Client Sub PO #: L1643943
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Kongmeng Vang, your Pace Project Manager.

This report has been reviewed by:

September 01, 2023
Kongmeng Vang, Project Manager
(612) 607-6382
(612) 607-6444 (fax)
kongmeng.vang@pacelabs.com

Report of Laboratory Analysis

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on six samples submitted by a representative of Pace Analytical National. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using USEPA Method 1613B. The estimated detection limits (EDLs) were based on signal-to-noise measurements. Estimated maximum possible concentration (EMPC) values were treated as positives in the toxic equivalence calculations.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 42-97%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1613B. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for recovery and accurate values were obtained.

Values were flagged "I" where incorrect isotope ratios were obtained. Concentrations below the calibration range were flagged "J" and should be regarded as estimates.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain trace levels of selected congeners. These levels were below the calibration range of the method. Sample levels similar to the corresponding blank levels were flagged "B" on the results tables and may be, at least partially, attributed to the background.

Laboratory and matrix spike samples were also prepared using clean reference matrix or sample matrix that had been fortified with native standard materials. The recoveries of the spiked native compounds ranged from 94-127% with relative percent differences ranging from 0.0-7.9%. These results were within the target ranges for the method.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
		Missouri	10100
A2LA	2926.01	Montana	CERT0092
Alabama	40770	Nebraska	NE-OS-18-06
Alaska-DW	MN00064	Nevada	MN00064
Alaska-UST	17-009	New Hampshire	2081
Arizona	AZ0014	New Jersey	MN002
Arkansas - WW	88-0680	New York	11647
Arkansas-DW	MN00064	North Carolina-	27700
California	2929	North Carolina-	530
Colorado	MN00064	North Dakota	R-036
Connecticut	PH-0256	Ohio-DW	41244
Florida	E87605	Ohio-VAP (170	CL101
Georgia	959	Ohio-VAP (180	CL110
Hawaii	MN00064	Oklahoma	9507
Idaho	MN00064	Oregon-Primary	MN300001
Illinois	200011	Oregon-Second	MN200001
Indiana	C-MN-01	Pennsylvania	68-00563
Iowa	368	Puerto Rico	MN00064
Kansas	E-10167	South Carolina	74003
Kentucky-DW	90062	Tennessee	TN02818
Kentucky-WW	90062	Texas	T104704192
Louisiana-DEQ	AI-84596	Utah	MN00064
Louisiana-DW	MN00064	Vermont	VT-027053137
Maine	MN00064	Virginia	460163
Maryland	322	Washington	C486
Michigan	9909	West Virginia-D	382
Minnesota	027-053-137	West Virginia-D	9952C
Minnesota-Ag	via MN 027-053	Wisconsin	999407970
Minnesota-Petr	1240	Wyoming-UST	via A2LA 2926.
Mississippi	MN00064		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
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Appendix A

Sample Management

REPORT OF LABORATORY ANALYSIS

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A — Required Client Information:

Company:	Pace Analytical
Address:	12065 Lebanon Rd
	Mt Juliet, TN 37122
Email:	MTJLSubcoTeam@pacelabs.com
Phone:	(615) 773-9736 Fax: (615) 758-5859
Requested Due Date:	25-Aug

Section B — Required Project Information:

Report To:	Pace Analytical Subcontract Team
Copy To:	
Purchase Order #:	L1643943
Project Name:	DRSGONDEQ-JH Baxter Offsite Investigatio
Project #:	2060.005

Section C — Invoice Information:

Attention:	Don Hanson
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	Kongmeng Wang
Pace Profile #:	38078

Regulatory Agency: —

State / Location: Lane County, Oregon

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N): Analysis Test (Dioxins and Furans 1613)	Residual Chlorine (Y/N)	
1	LFP_SM-01	SL				01-Aug	11:10		1	1								X		premium EDD 001
2	LFP_SM-02	SL				01-Aug	11:15		1	1								X		premium EDD 002
3	REX_SM-01	SL				01-Aug	12:00		1	1								X		premium EDD 003
4	REX_SM-02	SL				01-Aug	12:05		1	1								X		premium EDD 004
5	DSG_SM-02	SL				01-Aug	13:05		1	1								X		premium EDD 005
6	DSG_SM-03	SL				01-Aug	13:10		1	1								X		premium EDD 006
7																				
8																				
9																				
10																				
11																				
12																				

WO# : 10665016

10665016

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	James C Huckaba	10-Aug	12:44	[illegible]	[illegible]	940	2.7 Y Y Y

Pace Analytical Batch: WG2111560

Pace Analytical SDGs: L1643943

Location: Minneapolis, MN 55414

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed:

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Sample Condition Upon Receipt

Client Name: Pace Analytical

Project #: WO#: 10665016
PM: KV Due Date: 08/31/23
CLIENT: ESC_TN

Courier: ☒ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: 6643 4297 9721 ☐ See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other **Temp Blank?** ☒ Yes ☐ No

Thermometer: ☐ T1 (0461) ☐ T2 (0436) ☒ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☐ T9(0727) ☐ 01339252/1710 **Type of Ice:** ☐ Wet ☐ Blue ☐ Dry ☐ None ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6 °C **Cooler temp Read w/Temp Blank:** 2.3 °C

Correction Factor: -0.1 **Cooler Temp Corrected w/temp blank:** 2.2 °C

Average Corrected Temp (no temp blank only): ____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☐ N/A, water sample/other: ____) **Date/Initials of Person Examining Contents:** AS 8/11/23

Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? ☒ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): ☐ Duluth ☒ Minneapolis ☐ Virginia

				COMMENTS
Chain of Custody Present and Filled Out?	☒ Yes	☐ No		1.
Chain of Custody Relinquished?	☒ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☐ Yes	☒ No	☐ N/A	3.
Samples Arrived within Hold Time?	☒ Yes	☐ No		4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☒ No		6.
Sufficient Sample Volume?	☒ Yes	☐ No		7.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	8.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC?	☒ Yes	☐ No		11. If no, write ID/Date/Time of container below: ☐ See Exceptions ENV-FRM-MIN4-0142
Matrix: ☐ Water ☒ Soil ☐ Oil ☐ Other				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☒ N/A	☐ NaOH ☐ HNO3 ☐ H2SO4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	☐ Yes	☐ No	☒ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ See Exceptions ENV-FRM-MIN4-0142
				pH Paper Lot # — Residual Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☒ N/A	13.
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☒ N/A	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☒ N/A	
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	Pace Trip Blank Lot # (if purchased): ____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: ____ Date/Time: ____

Comments/Resolution: ____

Project Manager Review: [signature] **Date:** 8/11/23

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled By: AS **Line:** 4

Pace	**DC#_Title: ENV-FRM-MIN4-0154 v02_USDA Regulated Soil Checklist**
	Effective Date: 08/19/2022

USDA Regulated Soil Checklist

To be Completed by Sample Receiving:

WO: 10665016 **Date:** 8/11/23 **Initials:** AS

Sample Origin (check one): ☑ DOMESTIC ☐ QUARANTINED ☐ FOREIGN

NOTE: Soil samples from Hawaii, Guam, Puerto Rico, and the US Virgin Islands are Foreign originated.

If **DOMESTIC**, circle state of origin: AL AR AZ CA FL GA LA MS NC NM NY OK (OR) SC TN TX VA

Includes: IFA, SOD, Golden Nematode, Karnal Bunt, and Witchweed List County: Lane County

(USDA Permit/Compliance Agreement authorizes movement of samples from these domestic regulated zones)

If **QUARANTINED**, circle state of origin: CA ID NY TX

Includes: Fruit Fly and Pale Cyst Nematode List County: _____

(Movement is not authorized for Pale Cyst Nematode (ID)—remaining quarantines require additional paperwork)

If **FOREIGN**, list country of origin: _____

(Movement from some Canadian Provinces is not allowed. Refer to ENV-FRM-MIN4-0137 *Regulated Soil Flow Chart*)

REQUIREMENT	ACTION	COMPLETED		
PPQ-530 Paperwork must be included for any samples from counties with a Fruit Fly Quarantine in CA, NY, and TX. Reference ENV-SOP-MIN4-0095.	Scan PPQ-530 to the corresponding Project folder on the X:drive. If PPQ-530 is not present, contact the laboratory's designated USDA permit holder. **Do NOT continue processing samples.**	YES	NO	(N/A)
Samples from ID may not be moved from the quarantined region. Reference ENV-SOP-MIN4-0095.	If samples originated in a quarantined zone, contact the laboratory's designated USDA permit holder. **Do NOT continue processing samples.**	YES	NO	(N/A)

REQUIREMENT	ACTION	COMPLETED		
"Special Handling" stickers are to be placed on all samples.	Did "special handling" stickers get placed on all sample containers?	YES	NO	(N/A)
Samples must be segregated and stored in designated bins, shelves, and coolers.	Were samples placed in a designated cooler, containers, and shelves?	YES	NO	(N/A)
	Were there any signs of breakage or leakage (check for broken glass and/or loose soil in the cooler)? *NOTE: If NO, ice and melt water can be disposed of by normal process (ex: down the drain).*	YES	NO	(N/A)
Samples must be double contained to prevent accidental release.	If **YES**, were ice and melt water separated from the cooler and disposed of properly?	YES	NO	(N/A)
	Any broken glass and/or loose soil are to be bagged and placed in a USDA Regulated satellite container or active drum (see Waste Coordinator). **Ice and melt water should be baked at a temperature range of 121-154°F for 2 hours and then cooled before going down the drain.**			
Equipment and supplies that have come into contact samples must be decontaminated.	Was the cooler(s) and/or countertop(s) decontaminated using either a fresh 10% bleach solution or 70% ethanol? (Gloves and other lab supplies will be bagged and placed in the USDA Regulated satellite container or active drum).	YES	NO	

COMMENTS:

Pace ANALYTICAL SERVICES	**DC#_Title: ENV-FRM-MIN4-0154 v02_USDA Regulated Soil Checklist**
	Effective Date: 08/19/2022

To be Completed by Project Management (PM and/or PC):

Sample analysis will be conducted (circle all that apply): MN Subcontract Lab

If **subcontract**, list lab(s): _____

REQUIREMENT	ACTION	COMPLETED		
Permission to ship untreated soil must be on file prior to shipping to any subcontract lab, including IR Pace Labs.	Go to: *S:\CLIENTSVR\10_Client Services Department Documents\Regulated Soils Permits\Permission to Ship* If permission to ship letter is not there, contact the laboratory's designated USDA permit holder.	YES	NO	N/A
Shipment must include a valid copy of the receiving lab's permit as well as permission to ship letter.	Is a copy of all needed paperwork included with the COC? **Do NOT ship samples until all necessary paperwork is compiled.**	YES	NO	N/A

COMMENTS:

_____

_____

_____

_____

_____

PM Signature: _____ **Date:** 8/11/23

Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
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www.pacelabs.com

Reporting Flags

A = Reporting Limit based on signal to noise (EDL)

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

H2 = Extracted outside of holding time

I = Isotope ratio out of specification

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Appendix B

Sample Analysis Summary

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Pace Analytical National

Client's Sample ID	LFP_SM-01		
Lab Sample ID	10665016001		
Filename	L230828A_12		
Injected By	SMT		
Total Amount Extracted	10.6 g	Matrix	SOLID
% Moisture	9.0	Dilution	NA
Dry Weight Extracted	9.69 g	Collected	08/01/2023 11:10
ICAL ID	L230816	Received	08/11/2023 09:40
CCal Filename(s)	L230828A_07	Extracted	08/18/2023 15:05
Method Blank ID	BLANK-107917	Analyzed	08/28/2023 13:24

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.13		2,3,7,8-TCDF-13C	2.00	59
Total TCDF	ND	-----	0.13		2,3,7,8-TCDD-13C	2.00	52
					1,2,3,7,8-PeCDF-13C	2.00	66
2,3,7,8-TCDD	ND	-----	0.091		2,3,4,7,8-PeCDF-13C	2.00	68
Total TCDD	0.18	-----	0.091	J	1,2,3,7,8-PeCDD-13C	2.00	72
					1,2,3,4,7,8-HxCDF-13C	2.00	56
1,2,3,7,8-PeCDF	ND	-----	0.082		1,2,3,6,7,8-HxCDF-13C	2.00	58
2,3,4,7,8-PeCDF	ND	-----	0.055		2,3,4,6,7,8-HxCDF-13C	2.00	61
Total PeCDF	0.53	-----	0.055	J	1,2,3,7,8,9-HxCDF-13C	2.00	55
					1,2,3,4,7,8-HxCDD-13C	2.00	61
1,2,3,7,8-PeCDD	ND	-----	0.072		1,2,3,6,7,8-HxCDD-13C	2.00	62
Total PeCDD	ND	-----	0.072		1,2,3,4,6,7,8-HpCDF-13C	2.00	51
					1,2,3,4,7,8,9-HpCDF-13C	2.00	49
1,2,3,4,7,8-HxCDF	ND	-----	0.30		1,2,3,4,6,7,8-HpCDD-13C	2.00	58
1,2,3,6,7,8-HxCDF	ND	-----	0.29		OCDD-13C	4.00	42
2,3,4,6,7,8-HxCDF	ND	-----	0.25				
1,2,3,7,8,9-HxCDF	ND	-----	0.35		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	0.25		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	-----	0.31	0.28	IJ	2,3,7,8-TCDD-37Cl4	0.20	49
1,2,3,6,7,8-HxCDD	ND	-----	0.25				
1,2,3,7,8,9-HxCDD	ND	-----	0.26				
Total HxCDD	0.47	-----	0.25	BJ			
1,2,3,4,6,7,8-HpCDF	-----	1.0	0.19	IJ	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.30		Equivalence: 0.080 ng/Kg		
Total HpCDF	ND	-----	0.19		(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	-----	2.8	0.33	IJ			
Total HpCDD	2.8	-----	0.33	J			
OCDF	-----	2.9	0.64	IJ			
OCDD	31	-----	1.0				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
B = Less than 10x higher than method blank level
I = Isotope ratio out of specification

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Pace Analytical National

Client's Sample ID	LFP_SM-02		
Lab Sample ID	10665016002		
Filename	L230828A_13		
Injected By	SMT		
Total Amount Extracted	10.5 g	Matrix	SOLID
% Moisture	19.0	Dilution	NA
Dry Weight Extracted	8.48 g	Collected	08/01/2023 11:15
ICAL ID	L230816	Received	08/11/2023 09:40
CCal Filename(s)	L230828A_07	Extracted	08/18/2023 15:05
Method Blank ID	BLANK-107917	Analyzed	08/28/2023 14:08

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	-----	0.22	0.11	IJ	2,3,7,8-TCDF-13C	2.00	63
Total TCDF	1.8	-----	0.11		2,3,7,8-TCDD-13C	2.00	55
					1,2,3,7,8-PeCDF-13C	2.00	72
2,3,7,8-TCDD	-----	0.14	0.13	IJ	2,3,4,7,8-PeCDF-13C	2.00	71
Total TCDD	1.4	-----	0.13		1,2,3,7,8-PeCDD-13C	2.00	77
					1,2,3,4,7,8-HxCDF-13C	2.00	67
1,2,3,7,8-PeCDF	-----	0.34	0.090	IJ	1,2,3,6,7,8-HxCDF-13C	2.00	62
2,3,4,7,8-PeCDF	1.0	-----	0.063	J	2,3,4,6,7,8-HxCDF-13C	2.00	64
Total PeCDF	8.6	-----	0.063		1,2,3,7,8,9-HxCDF-13C	2.00	60
					1,2,3,4,7,8-HxCDD-13C	2.00	60
1,2,3,7,8-PeCDD	0.71	-----	0.095	J	1,2,3,6,7,8-HxCDD-13C	2.00	65
Total PeCDD	2.9	-----	0.095	J	1,2,3,4,6,7,8-HpCDF-13C	2.00	56
					1,2,3,4,7,8,9-HpCDF-13C	2.00	55
1,2,3,4,7,8-HxCDF	2.5	-----	0.34	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	63
1,2,3,6,7,8-HxCDF	2.1	-----	0.35	J	OCDD-13C	4.00	52
2,3,4,6,7,8-HxCDF	3.0	-----	0.31	J			
1,2,3,7,8,9-HxCDF	0.97	-----	0.41	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	37	-----	0.31		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.9	-----	0.20	J	2,3,7,8-TCDD-37Cl4	0.20	49
1,2,3,6,7,8-HxCDD	7.0	-----	0.17				
1,2,3,7,8,9-HxCDD	3.5	-----	0.18	J			
Total HxCDD	47	-----	0.17				
1,2,3,4,6,7,8-HpCDF	63	-----	0.41		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	3.8	-----	0.66	J	Equivalence: 7.0 ng/Kg		
Total HpCDF	67	-----	0.41		(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	220	-----	0.56				
Total HpCDD	450	-----	0.56				
OCDF	220	-----	1.1				
OCDD	2600	-----	1.1				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

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NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
I = Isotope ratio out of specification

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Pace Analytical National

Client's Sample ID	REX_SM-01		
Lab Sample ID	10665016003		
Filename	L230828A_14		
Injected By	SMT		
Total Amount Extracted	10.9 g	Matrix	SOLID
% Moisture	13.8	Dilution	NA
Dry Weight Extracted	9.40 g	Collected	08/01/2023 12:00
ICAL ID	L230816	Received	08/11/2023 09:40
CCal Filename(s)	L230828A_07	Extracted	08/18/2023 15:05
Method Blank ID	BLANK-107917	Analyzed	08/28/2023 14:51

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.10		2,3,7,8-TCDF-13C	2.00	64
Total TCDF	ND	-----	0.10		2,3,7,8-TCDD-13C	2.00	57
					1,2,3,7,8-PeCDF-13C	2.00	75
2,3,7,8-TCDD	ND	-----	0.100		2,3,4,7,8-PeCDF-13C	2.00	76
Total TCDD	ND	-----	0.100		1,2,3,7,8-PeCDD-13C	2.00	83
					1,2,3,4,7,8-HxCDF-13C	2.00	71
1,2,3,7,8-PeCDF	ND	-----	0.11		1,2,3,6,7,8-HxCDF-13C	2.00	63
2,3,4,7,8-PeCDF	ND	-----	0.077		2,3,4,6,7,8-HxCDF-13C	2.00	67
Total PeCDF	ND	-----	0.077		1,2,3,7,8,9-HxCDF-13C	2.00	66
					1,2,3,4,7,8-HxCDD-13C	2.00	65
1,2,3,7,8-PeCDD	ND	-----	0.100		1,2,3,6,7,8-HxCDD-13C	2.00	66
Total PeCDD	ND	-----	0.100		1,2,3,4,6,7,8-HpCDF-13C	2.00	63
					1,2,3,4,7,8,9-HpCDF-13C	2.00	61
1,2,3,4,7,8-HxCDF	ND	-----	0.094		1,2,3,4,6,7,8-HpCDD-13C	2.00	66
1,2,3,6,7,8-HxCDF	ND	-----	0.098		OCDD-13C	4.00	55
2,3,4,6,7,8-HxCDF	ND	-----	0.099				
1,2,3,7,8,9-HxCDF	ND	-----	0.14		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	0.094		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	-----	0.18	0.16	IJ	2,3,7,8-TCDD-37Cl4	0.20	53
1,2,3,6,7,8-HxCDD	ND	-----	0.13				
1,2,3,7,8,9-HxCDD	ND	-----	0.14				
Total HxCDD	ND	-----	0.13				
1,2,3,4,6,7,8-HpCDF	ND	-----	0.17		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.24		Equivalence: 0.024 ng/Kg		
Total HpCDF	ND	-----	0.17		(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	-----	0.44	0.27	IJ			
Total HpCDD	0.51	-----	0.27	J			
OCDF	ND	-----	0.43				
OCDD	2.5	-----	0.44	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
I = Isotope ratio out of specification

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Pace Analytical National

Client's Sample ID	REX_SM-02		
Lab Sample ID	10665016004		
Filename	L230828A_15		
Injected By	SMT		
Total Amount Extracted	10.5 g	Matrix	SOLID
% Moisture	7.0	Dilution	NA
Dry Weight Extracted	9.75 g	Collected	08/01/2023 12:05
ICAL ID	L230816	Received	08/11/2023 09:40
CCal Filename(s)	L230828A_07	Extracted	08/18/2023 15:05
Method Blank ID	BLANK-107917	Analyzed	08/28/2023 15:35

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.079		2,3,7,8-TCDF-13C	2.00	70
Total TCDF	0.16	-----	0.079	J	2,3,7,8-TCDD-13C	2.00	62
					1,2,3,7,8-PeCDF-13C	2.00	82
2,3,7,8-TCDD	ND	-----	0.11		2,3,4,7,8-PeCDF-13C	2.00	80
Total TCDD	ND	-----	0.11		1,2,3,7,8-PeCDD-13C	2.00	89
					1,2,3,4,7,8-HxCDF-13C	2.00	75
1,2,3,7,8-PeCDF	ND	-----	0.065		1,2,3,6,7,8-HxCDF-13C	2.00	73
2,3,4,7,8-PeCDF	ND	-----	0.046		2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF	ND	-----	0.046		1,2,3,7,8,9-HxCDF-13C	2.00	70
					1,2,3,4,7,8-HxCDD-13C	2.00	71
1,2,3,7,8-PeCDD	ND	-----	0.063		1,2,3,6,7,8-HxCDD-13C	2.00	73
Total PeCDD	ND	-----	0.063		1,2,3,4,6,7,8-HpCDF-13C	2.00	70
					1,2,3,4,7,8,9-HpCDF-13C	2.00	67
1,2,3,4,7,8-HxCDF	ND	-----	0.090		1,2,3,4,6,7,8-HpCDD-13C	2.00	74
1,2,3,6,7,8-HxCDF	ND	-----	0.088		OCDD-13C	4.00	60
2,3,4,6,7,8-HxCDF	ND	-----	0.086				
1,2,3,7,8,9-HxCDF	0.17	-----	0.11	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.17	-----	0.086	BJ	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	-----	0.16	0.13	IJ	2,3,7,8-TCDD-37Cl4	0.20	59
1,2,3,6,7,8-HxCDD	ND	-----	0.12				
1,2,3,7,8,9-HxCDD	ND	-----	0.12				
Total HxCDD	ND	-----	0.12				
1,2,3,4,6,7,8-HpCDF	-----	0.35	0.24	IJ	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.37		Equivalence: 0.078 ng/Kg		
Total HpCDF	1.3	-----	0.24	J	(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	3.2	-----	0.21	J			
Total HpCDD	12	-----	0.21				
OCDF	2.2	-----	0.43	J			
OCDD	30	-----	0.48				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
B = Less than 10x higher than method blank level
I = Isotope ratio out of specification

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
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Method 1613B Sample Analysis Results

Client - Pace Analytical National

Client's Sample ID	DSG_SM-02		
Lab Sample ID	10665016005		
Filename	L230828A_16		
Injected By	SMT		
Total Amount Extracted	10.2 g	Matrix	SOLID
% Moisture	24.6	Dilution	NA
Dry Weight Extracted	7.71 g	Collected	08/01/2023 13:05
ICAL ID	L230816	Received	08/11/2023 09:40
CCal Filename(s)	L230828A_07	Extracted	08/18/2023 15:05
Method Blank ID	BLANK-107917	Analyzed	08/28/2023 16:18

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.17		2,3,7,8-TCDF-13C	2.00	82
Total TCDF	1.0	-----	0.17	J	2,3,7,8-TCDD-13C	2.00	75
					1,2,3,7,8-PeCDF-13C	2.00	93
2,3,7,8-TCDD	-----	0.24	0.12	IJ	2,3,4,7,8-PeCDF-13C	2.00	91
Total TCDD	2.0	-----	0.12		1,2,3,7,8-PeCDD-13C	2.00	97
					1,2,3,4,7,8-HxCDF-13C	2.00	79
1,2,3,7,8-PeCDF	0.37	-----	0.075	J	1,2,3,6,7,8-HxCDF-13C	2.00	74
2,3,4,7,8-PeCDF	1.0	-----	0.055	J	2,3,4,6,7,8-HxCDF-13C	2.00	73
Total PeCDF	8.4	-----	0.055		1,2,3,7,8,9-HxCDF-13C	2.00	71
					1,2,3,4,7,8-HxCDD-13C	2.00	72
1,2,3,7,8-PeCDD	0.44	-----	0.079	J	1,2,3,6,7,8-HxCDD-13C	2.00	75
Total PeCDD	4.8	-----	0.079	J	1,2,3,4,6,7,8-HpCDF-13C	2.00	67
					1,2,3,4,7,8,9-HpCDF-13C	2.00	66
1,2,3,4,7,8-HxCDF	1.1	-----	0.14	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	72
1,2,3,6,7,8-HxCDF	1.2	-----	0.15	J	OCDD-13C	4.00	63
2,3,4,6,7,8-HxCDF	2.4	-----	0.14	J			
1,2,3,7,8,9-HxCDF	0.89	-----	0.18	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	21	-----	0.14		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.2	-----	0.099	J	2,3,7,8-TCDD-37Cl4	0.20	69
1,2,3,6,7,8-HxCDD	7.4	-----	0.087				
1,2,3,7,8,9-HxCDD	2.6	-----	0.090	J			
Total HxCDD	58	-----	0.087				
1,2,3,4,6,7,8-HpCDF	21	-----	0.28		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	1.7	-----	0.41	J	Equivalence: 6.4 ng/Kg		
Total HpCDF	22	-----	0.28		(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	260	-----	0.26				
Total HpCDD	600	-----	0.26				
OCDF	52	-----	0.56				
OCDD	2900	-----	0.66				

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J = Estimated value
I = Isotope ratio out of specification

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Pace Analytical National

Client's Sample ID	DSG_SM-03		
Lab Sample ID	10665016006		
Filename	L230828A_17		
Injected By	SMT		
Total Amount Extracted	10.8 g	Matrix	SOLID
% Moisture	13.6	Dilution	NA
Dry Weight Extracted	9.30 g	Collected	08/01/2023 13:10
ICAL ID	L230816	Received	08/11/2023 09:40
CCal Filename(s)	L230828A_07	Extracted	08/18/2023 15:05
Method Blank ID	BLANK-107917	Analyzed	08/28/2023 17:02

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.11		2,3,7,8-TCDF-13C	2.00	62
Total TCDF	ND	-----	0.11		2,3,7,8-TCDD-13C	2.00	56
					1,2,3,7,8-PeCDF-13C	2.00	72
2,3,7,8-TCDD	ND	-----	0.14		2,3,4,7,8-PeCDF-13C	2.00	71
Total TCDD	ND	-----	0.14		1,2,3,7,8-PeCDD-13C	2.00	81
					1,2,3,4,7,8-HxCDF-13C	2.00	68
1,2,3,7,8-PeCDF	ND	-----	0.091		1,2,3,6,7,8-HxCDF-13C	2.00	62
2,3,4,7,8-PeCDF	ND	-----	0.068		2,3,4,6,7,8-HxCDF-13C	2.00	63
Total PeCDF	0.55	-----	0.068	J	1,2,3,7,8,9-HxCDF-13C	2.00	62
					1,2,3,4,7,8-HxCDD-13C	2.00	63
1,2,3,7,8-PeCDD	ND	-----	0.080		1,2,3,6,7,8-HxCDD-13C	2.00	62
Total PeCDD	ND	-----	0.080		1,2,3,4,6,7,8-HpCDF-13C	2.00	59
					1,2,3,4,7,8,9-HpCDF-13C	2.00	57
1,2,3,4,7,8-HxCDF	ND	-----	0.29		1,2,3,4,6,7,8-HpCDD-13C	2.00	64
1,2,3,6,7,8-HxCDF	ND	-----	0.28		OCDD-13C	4.00	48
2,3,4,6,7,8-HxCDF	ND	-----	0.26				
1,2,3,7,8,9-HxCDF	ND	-----	0.38		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.96	-----	0.26	BJ	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.39		2,3,7,8-TCDD-37Cl4	0.20	53
1,2,3,6,7,8-HxCDD	0.34	-----	0.34	J			
1,2,3,7,8,9-HxCDD	ND	-----	0.36				
Total HxCDD	2.2	-----	0.34	J			
1,2,3,4,6,7,8-HpCDF	1.7	-----	0.36	J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.50		Equivalence: 0.12 ng/Kg		
Total HpCDF	6.2	-----	0.36		(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	5.4	-----	0.43				
Total HpCDD	10	-----	0.43				
OCDF	5.1	-----	0.68	J			
OCDD	57	-----	0.88				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
B = Less than 10x higher than method blank level

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Blank Analysis Results

Lab Sample Name	DFBLKIV		
Lab Sample ID	BLANK-107917	Matrix	Solid
Filename	L230828A_10	Dilution	NA
Total Amount Extracted	10.6 g	Extracted	08/18/2023 15:05
ICAL ID	L230816	Analyzed	08/28/2023 11:57
CCal Filename(s)	L230828A_07	Injected By	SMT

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.089		2,3,7,8-TCDF-13C	2.00	73
Total TCDF	ND	-----	0.089		2,3,7,8-TCDD-13C	2.00	64
					1,2,3,7,8-PeCDF-13C	2.00	84
2,3,7,8-TCDD	ND	-----	0.14		2,3,4,7,8-PeCDF-13C	2.00	80
Total TCDD	ND	-----	0.14		1,2,3,7,8-PeCDD-13C	2.00	86
					1,2,3,4,7,8-HxCDF-13C	2.00	83
1,2,3,7,8-PeCDF	ND	-----	0.094		1,2,3,6,7,8-HxCDF-13C	2.00	78
2,3,4,7,8-PeCDF	ND	-----	0.072		2,3,4,6,7,8-HxCDF-13C	2.00	79
Total PeCDF	ND	-----	0.072		1,2,3,7,8,9-HxCDF-13C	2.00	74
					1,2,3,4,7,8-HxCDD-13C	2.00	76
1,2,3,7,8-PeCDD	ND	-----	0.11		1,2,3,6,7,8-HxCDD-13C	2.00	77
Total PeCDD	ND	-----	0.11		1,2,3,4,6,7,8-HpCDF-13C	2.00	80
					1,2,3,4,7,8,9-HpCDF-13C	2.00	71
1,2,3,4,7,8-HxCDF	ND	-----	0.063		1,2,3,4,6,7,8-HpCDD-13C	2.00	78
1,2,3,6,7,8-HxCDF	ND	-----	0.068		OCDD-13C	4.00	63
2,3,4,6,7,8-HxCDF	ND	-----	0.073				
1,2,3,7,8,9-HxCDF	-----	0.100	0.095	IJ	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.10	-----	0.063	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	-----	0.15	0.11	IJ	2,3,7,8-TCDD-37Cl4	0.20	61
1,2,3,6,7,8-HxCDD	ND	-----	0.098				
1,2,3,7,8,9-HxCDD	ND	-----	0.11				
Total HxCDD	0.15	-----	0.098	J			
1,2,3,4,6,7,8-HpCDF	ND	-----	0.14		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.14		Equivalence: 0.026 ng/Kg		
Total HpCDF	ND	-----	0.14		(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	0.23				
Total HpCDD	ND	-----	0.23				
OCDF	ND	-----	0.43				
OCDD	-----	1.1	0.39	IJ			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.
J = Estimated value
I = Isotope ratio out of specification

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCS-107918		
Filename	L230828A_20	Matrix	Solid
Total Amount Extracted	10.2 g	Dilution	NA
ICAL ID	L230816	Extracted	08/18/2023 15:05
CCal Filename	L230828A_07	Analyzed	08/28/2023 19:12
Method Blank ID	BLANK-107917	Injected By	SMT

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDF	10	9.8	7.5	15.8	98
2,3,7,8-TCDD	10	11	6.7	15.8	106
1,2,3,7,8-PeCDF	50	47	40.0	67.0	94
2,3,4,7,8-PeCDF	50	48	34.0	80.0	97
1,2,3,7,8-PeCDD	50	47	35.0	71.0	95
1,2,3,4,7,8-HxCDF	50	48	36.0	67.0	96
1,2,3,6,7,8-HxCDF	50	50	42.0	65.0	100
2,3,4,6,7,8-HxCDF	50	51	35.0	78.0	102
1,2,3,7,8,9-HxCDF	50	50	39.0	65.0	100
1,2,3,4,7,8-HxCDD	50	53	35.0	82.0	106
1,2,3,6,7,8-HxCDD	50	48	38.0	67.0	96
1,2,3,7,8,9-HxCDD	50	51	32.0	81.0	103
1,2,3,4,6,7,8-HpCDF	50	50	41.0	61.0	100
1,2,3,4,7,8,9-HpCDF	50	50	39.0	69.0	101
1,2,3,4,6,7,8-HpCDD	50	47	35.0	70.0	95
OCDF	100	110	63.0	170.0	107
OCDD	100	110	78.0	144.0	112
2,3,7,8-TCDD-37Cl4	10	5.0	3.1	19.1	50
2,3,7,8-TCDF-13C	100	61	22.0	152.0	61
2,3,7,8-TCDD-13C	100	56	20.0	175.0	56
1,2,3,7,8-PeCDF-13C	100	75	21.0	192.0	75
2,3,4,7,8-PeCDF-13C	100	72	13.0	328.0	72
1,2,3,7,8-PeCDD-13C	100	82	21.0	227.0	82
1,2,3,4,7,8-HxCDF-13C	100	67	19.0	202.0	67
1,2,3,6,7,8-HxCDF-13C	100	61	21.0	159.0	61
2,3,4,6,7,8-HxCDF-13C	100	62	22.0	176.0	62
1,2,3,7,8,9-HxCDF-13C	100	59	17.0	205.0	59
1,2,3,4,7,8-HxCDD-13C	100	60	21.0	193.0	60
1,2,3,6,7,8-HxCDD-13C	100	67	25.0	163.0	67
1,2,3,4,6,7,8-HpCDF-13C	100	62	21.0	158.0	62
1,2,3,4,7,8,9-HpCDF-13C	100	57	20.0	186.0	57
1,2,3,4,6,7,8-HpCDD-13C	100	65	26.0	166.0	65
OCDD-13C	200	100	26.0	397.0	50

Cs = Concentration Spiked (ng/mL)
Cr = Concentration Recovered (ng/mL)
Rec. = Recovery (Expressed as Percent)
Control Limit Reference: Method 1613, Table 6, 10/94 Revision
R = Recovery outside of control limits
Nn = Value obtained from additional analysis
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Spiked Sample Report

Client - Pace Analytical National

Client's Sample ID	LFP_SM-01-MS		
Lab Sample ID	10665016001-MS		
Filename	L230828A_18	Matrix	SOLID
Total Amount Extracted	10.2 g	Dilution	NA
ICAL ID	L230816	Extracted	08/18/2023 15:05
CCal Filename(s)	L230828A_07	Analyzed	08/28/2023 17:45
Method Blank ID	BLANK-107917	Injected By	SMT

Native Isomers	**Qs** (ng)	**Qm** (ng)	% Rec.	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	0.20	0.21	103	2,3,7,8-TCDF-13C	2.00	60
Total TCDF				2,3,7,8-TCDD-13C	2.00	53
				1,2,3,7,8-PeCDF-13C	2.00	71
2,3,7,8-TCDD	0.20	0.23	114	2,3,4,7,8-PeCDF-13C	2.00	70
Total TCDD				1,2,3,7,8-PeCDD-13C	2.00	76
				1,2,3,4,7,8-HxCDF-13C	2.00	68
1,2,3,7,8-PeCDF	1.00	1.00	100	1,2,3,6,7,8-HxCDF-13C	2.00	61
2,3,4,7,8-PeCDF	1.00	1.01	101	2,3,4,6,7,8-HxCDF-13C	2.00	63
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.00	61
				1,2,3,4,7,8-HxCDD-13C	2.00	62
1,2,3,7,8-PeCDD	1.00	0.98	98	1,2,3,6,7,8-HxCDD-13C	2.00	64
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.00	61
				1,2,3,4,7,8,9-HpCDF-13C	2.00	58
1,2,3,4,7,8-HxCDF	1.00	1.01	101	1,2,3,4,6,7,8-HpCDD-13C	2.00	65
1,2,3,6,7,8-HxCDF	1.00	1.07	107	OCDD-13C	4.00	53
2,3,4,6,7,8-HxCDF	1.00	1.07	107			
1,2,3,7,8,9-HxCDF	1.00	1.03	103	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.16	116	2,3,7,8-TCDD-37Cl4	0.20	50
1,2,3,6,7,8-HxCDD	1.00	1.06	106			
1,2,3,7,8,9-HxCDD	1.00	1.10	110			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.00	1.09	109			
1,2,3,4,7,8,9-HpCDF	1.00	1.05	105			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.00	1.04	104			
Total HpCDD						
OCDF	2.00	2.36	118			
OCDD	2.00	2.62	116			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a total weight basis and are valid to no more than 2 significant figures.
J = Estimated value
I = Isotope ratio out of specification

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Spiked Sample Report

Client - Pace Analytical National

Client's Sample ID	LFP_SM-01-MSD		
Lab Sample ID	10665016001-MSD		
Filename	L230828A_19	Matrix	SOLID
Total Amount Extracted	10.5 g	Dilution	NA
ICAL ID	L230816	Extracted	08/18/2023 15:05
CCal Filename(s)	L230828A_07	Analyzed	08/28/2023 18:29
Method Blank ID	BLANK-107917	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.21	104	2,3,7,8-TCDF-13C	2.00	55
Total TCDF				2,3,7,8-TCDD-13C	2.00	50
				1,2,3,7,8-PeCDF-13C	2.00	65
2,3,7,8-TCDD	0.20	0.24	118	2,3,4,7,8-PeCDF-13C	2.00	65
Total TCDD				1,2,3,7,8-PeCDD-13C	2.00	70
				1,2,3,4,7,8-HxCDF-13C	2.00	64
1,2,3,7,8-PeCDF	1.00	1.01	101	1,2,3,6,7,8-HxCDF-13C	2.00	56
2,3,4,7,8-PeCDF	1.00	1.00	100	2,3,4,6,7,8-HxCDF-13C	2.00	59
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.00	56
				1,2,3,4,7,8-HxCDD-13C	2.00	54
1,2,3,7,8-PeCDD	1.00	0.98	98	1,2,3,6,7,8-HxCDD-13C	2.00	59
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.00	55
				1,2,3,4,7,8,9-HpCDF-13C	2.00	50
1,2,3,4,7,8-HxCDF	1.00	1.01	101	1,2,3,4,6,7,8-HpCDD-13C	2.00	58
1,2,3,6,7,8-HxCDF	1.00	1.07	107	OCDD-13C	4.00	45
2,3,4,6,7,8-HxCDF	1.00	1.05	105			
1,2,3,7,8,9-HxCDF	1.00	1.03	103	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.14	114	2,3,7,8-TCDD-37Cl4	0.20	48
1,2,3,6,7,8-HxCDD	1.00	1.06	106			
1,2,3,7,8,9-HxCDD	1.00	1.09	109			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.00	1.08	108			
1,2,3,4,7,8,9-HpCDF	1.00	1.10	110			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.00	1.03	103			
Total HpCDD						
OCDF	2.00	2.43	121			
OCDD	2.00	2.84	127			

Qs = Quantity Spiked Qm = Quantity Measured Rec. = Recovery (Expressed as Percent)

Results reported on a total weight basis and are valid to no more than 2 significant figures.
J = Estimated value
I = Isotope ratio out of specification

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Method 1613 Spike Sample Results

Client - Pace Analytical National

Client Sample ID	LFP_SM-01		
Lab Sample ID	10665016001	Sample Filename	L230828A_12
MS ID	10665016001-MS	MS Filename	L230828A_18
MSD ID	10665016001-MSD	MSD Filename	L230828A_19

	Quantity	Unspiked Sample Contribution		Quantity Measured			Subtracted Recovery	
	Spiked	to MS	to MSD	MS	MSD		MS	MSD
Analyte	(ng)	(ng)	(ng)	(ng)	(ng)	RPD	(%)	(%)
2,3,7,8-TCDF	0.20	ND	ND	0.21	0.21	1.0	103	104
2,3,7,8-TCDD	0.20	ND	ND	0.23	0.24	3.5	114	118
1,2,3,7,8-PeCDF	1.00	ND	ND	1.00	1.01	0.2	100	101
2,3,4,7,8-PeCDF	1.00	ND	ND	1.01	1.00	0.7	101	100
1,2,3,7,8-PeCDD	1.00	ND	ND	0.98	0.98	0.1	98	98
1,2,3,4,7,8-HxCDF	1.00	ND	ND	1.01	1.01	0.2	101	101
1,2,3,6,7,8-HxCDF	1.00	ND	ND	1.07	1.07	0.7	107	107
2,3,4,6,7,8-HxCDF	1.00	ND	ND	1.07	1.05	2.2	107	105
1,2,3,7,8,9-HxCDF	1.00	ND	ND	1.03	1.03	0.0	103	103
1,2,3,4,7,8-HxCDD	1.00	0.00327	0.00336	1.16	1.14	2.0	116	114
1,2,3,6,7,8-HxCDD	1.00	ND	ND	1.06	1.06	0.1	106	106
1,2,3,7,8,9-HxCDD	1.00	ND	ND	1.10	1.09	0.3	110	109
1,2,3,4,6,7,8-HpCDF	1.00	0.0101	0.0104	1.09	1.08	0.6	109	108
1,2,3,4,7,8,9-HpCDF	1.00	ND	ND	1.05	1.10	4.3	105	110
1,2,3,4,6,7,8-HpCDD	1.00	0.0284	0.0291	1.04	1.03	1.1	104	103
OCDF	2.00	0.0308	0.0317	2.36	2.43	2.6	118	121
OCDD	2.00	0.293	0.300	2.62	2.84	7.9	116	127

Quantity Spiked - the amount of analyte spiked into the spiked samples
Unspiked Sample Contribution - calculated based on the amount found in the sample and the extracted amounts of the spiked and unspiked samples
Quantity Measured - the total amount of analyte measured in the spiked samples
RPD - the Relative Percent Difference of the spiked sample Quantity Measured values
Subtracted Recovery - calculated after subtracting the unspiked sample contribution

ANALYTICAL REPORT

July 20, 2022

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group:	L1511257
Samples Received:	07/02/2022
Project Number:	72-18-32
Description:	JH Baxter Removal Investigation

Report To:

Don Hanson
165 E. 7th Avenue
Suite 100
Eugene, OR 97401

Entire Report Reviewed By:

Brian Ford
Project Manager

TABLE OF CONTENTS

SAMPLE SUMMARY

TS-001-0622 L1511257-01 Solid

Collected by: GS/CM
Collected date/time: 06/30/22 16:15
Received date/time: 07/02/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1891765	1	07/08/22 09:45	07/08/22 10:14	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG1892628	1	07/17/22 11:57	07/18/22 11:34	MRW	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1892754	200	07/19/22 16:06	07/19/22 22:59	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG1892754	5	07/19/22 16:06	07/19/22 22:48	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1891733	25	07/07/22 13:17	07/09/22 19:26	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1893660	1	07/12/22 18:29	07/13/22 03:06	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG1894221	1	07/13/22 10:13	07/14/22 21:34	HMH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG1893664	1	07/12/22 16:40	07/13/22 00:52	HMH	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1893664	1	07/12/22 16:40	07/13/22 00:52	HMH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E	WG1893676	1	07/13/22 06:28	07/13/22 17:39	DSH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1893667	1	07/13/22 09:42	07/13/22 22:36	AMG	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Project Narrative

GX: air drying step of ISM preparation procedure could cause low bias in the results.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.3		1	07/08/2022 10:14	WG1891765

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0577		0.0199	0.0443	1	07/18/2022 11:34	WG1892628

Metals (ICPMS) by Method 6020B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Aluminum	17800		306	2220	200	07/19/2022 22:59	WG1892754
Antimony	0.373	J	0.184	3.32	5	07/19/2022 22:48	WG1892754
Arsenic	11.3		0.111	1.11	5	07/19/2022 22:48	WG1892754
Barium	227		6.74	111	200	07/19/2022 22:59	WG1892754
Beryllium	0.820	J	0.153	2.77	5	07/19/2022 22:48	WG1892754
Cadmium	0.142	J	0.0947	1.11	5	07/19/2022 22:48	WG1892754
Calcium	3420		83.7	554	5	07/19/2022 22:48	WG1892754
Chromium	17.7		0.328	5.54	5	07/19/2022 22:48	WG1892754
Cobalt	18.2		0.0512	1.11	5	07/19/2022 22:48	WG1892754
Copper	36.6		0.146	5.54	5	07/19/2022 22:48	WG1892754
Iron	41900		397	2220	200	07/19/2022 22:59	WG1892754
Lead	8.08		0.110	2.22	5	07/19/2022 22:48	WG1892754
Magnesium	3990		50.9	554	5	07/19/2022 22:48	WG1892754
Manganese	1170		11.9	111	200	07/19/2022 22:59	WG1892754
Nickel	8.86		0.218	2.77	5	07/19/2022 22:48	WG1892754
Potassium	1200		75.3	554	5	07/19/2022 22:48	WG1892754
Selenium	0.530	J	0.199	2.77	5	07/19/2022 22:48	WG1892754
Silver	U		0.0958	0.554	5	07/19/2022 22:48	WG1892754
Sodium	138	J	84.8	554	5	07/19/2022 22:48	WG1892754
Thallium	0.144	J	0.0720	2.22	5	07/19/2022 22:48	WG1892754
Vanadium	89.4		0.207	2.77	5	07/19/2022 22:48	WG1892754
Zinc	65.4		0.820	27.7	5	07/19/2022 22:48	WG1892754

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1.29	J	1.03	3.04	25	07/09/2022 19:26	WG1891733
(S) a,a,a-Trifluorotoluene(FID)	*98.8*			*77.0-120*		*07/09/2022 19:26*	WG1891733

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	3.58	J	1.47	4.43	1	07/13/2022 03:06	WG1893660
Residual Range Organics (RRO)	5.07	J	3.69	11.1	1	07/13/2022 03:06	WG1893660
(S) o-Terphenyl	*37.7*			*18.0-148*		*07/13/2022 03:06*	WG1893660

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00778	0.0776	1	07/14/2022 21:34	WG1894221
Dalapon	U		0.0125	0.0776	1	07/14/2022 21:34	WG1894221
2,4-DB	U		0.0329	0.0776	1	07/14/2022 21:34	WG1894221
Dicamba	U		0.0174	0.0776	1	07/14/2022 21:34	WG1894221

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Dichloroprop	U		0.0271	0.0776	1	07/14/2022 21:34	WG1894221
Dinoseb	U		0.00772	0.0776	1	07/14/2022 21:34	WG1894221
MCPA	U		0.491	7.20	1	07/14/2022 21:34	WG1894221
MCPP	U		0.407	7.20	1	07/14/2022 21:34	WG1894221
2,4,5-T	U		0.00944	0.0776	1	07/14/2022 21:34	WG1894221
2,4,5-TP (Silvex)	U		0.0119	0.0776	1	07/14/2022 21:34	WG1894221
(S) 2,4-Dichlorophenyl Acetic Acid	*61.7*			*22.0-132*		*07/14/2022 21:34*	WG1894221

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00417	0.0222	1	07/13/2022 00:52	WG1893664
Alpha BHC	U		0.00408	0.0222	1	07/13/2022 00:52	WG1893664
Beta BHC	U		0.00420	0.0222	1	07/13/2022 00:52	WG1893664
Delta BHC	U		0.00383	0.0222	1	07/13/2022 00:52	WG1893664
Gamma BHC	U		0.00381	0.0222	1	07/13/2022 00:52	WG1893664
Chlordane	U		0.114	0.332	1	07/13/2022 00:52	WG1893664
4,4-DDD	U		0.00410	0.0222	1	07/13/2022 00:52	WG1893664
4,4-DDE	U		0.00406	0.0222	1	07/13/2022 00:52	WG1893664
4,4-DDT	U		0.00695	0.0222	1	07/13/2022 00:52	WG1893664
Dieldrin	U		0.00381	0.0222	1	07/13/2022 00:52	WG1893664
Endosulfan I	U		0.00402	0.0222	1	07/13/2022 00:52	WG1893664
Endosulfan II	U		0.00371	0.0222	1	07/13/2022 00:52	WG1893664
Endosulfan sulfate	U		0.00403	0.0222	1	07/13/2022 00:52	WG1893664
Endrin	U	J4	0.00388	0.0222	1	07/13/2022 00:52	WG1893664
Endrin aldehyde	U		0.00376	0.0222	1	07/13/2022 00:52	WG1893664
Endrin ketone	U		0.00788	0.0222	1	07/13/2022 00:52	WG1893664
Heptachlor	U		0.00474	0.0222	1	07/13/2022 00:52	WG1893664
Heptachlor epoxide	U		0.00376	0.0222	1	07/13/2022 00:52	WG1893664
Hexachlorobenzene	U		0.00383	0.0222	1	07/13/2022 00:52	WG1893664
Methoxychlor	U		0.00536	0.0222	1	07/13/2022 00:52	WG1893664
Toxaphene	U		0.137	0.443	1	07/13/2022 00:52	WG1893664
(S) Decachlorobiphenyl	*29.4*			*10.0-135*		*07/13/2022 00:52*	WG1893664
(S) Tetrachloro-m-xylene	*27.0*			*10.0-139*		*07/13/2022 00:52*	WG1893664

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1268	U		0.00818	0.0188	1	07/13/2022 00:52	WG1893664
PCB 1016	U		0.0131	0.0377	1	07/13/2022 00:52	WG1893664
PCB 1221	U		0.0131	0.0377	1	07/13/2022 00:52	WG1893664
PCB 1232	U		0.0131	0.0377	1	07/13/2022 00:52	WG1893664
PCB 1242	U		0.0131	0.0377	1	07/13/2022 00:52	WG1893664
PCB 1248	U		0.00818	0.0188	1	07/13/2022 00:52	WG1893664
PCB 1254	U		0.00818	0.0188	1	07/13/2022 00:52	WG1893664
PCB 1260	U		0.00818	0.0188	1	07/13/2022 00:52	WG1893664
PCB 1262	U		0.00818	0.0188	1	07/13/2022 00:52	WG1893664
(S) Decachlorobiphenyl	*25.4*			*10.0-135*		*07/13/2022 00:52*	WG1893664
(S) Tetrachloro-m-xylene	*24.4*			*10.0-139*		*07/13/2022 00:52*	WG1893664

Semi Volatile Organic Compounds (GC/MS) by Method 8270E

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00597	0.0369	1	07/13/2022 17:39	WG1893676
Acenaphthylene	U		0.00520	0.0369	1	07/13/2022 17:39	WG1893676
Anthracene	U		0.00657	0.0369	1	07/13/2022 17:39	WG1893676
Benzo(a)anthracene	U		0.00650	0.0369	1	07/13/2022 17:39	WG1893676
Benzo(b)fluoranthene	U		0.00688	0.0369	1	07/13/2022 17:39	WG1893676
Benzo(k)fluoranthene	U		0.00656	0.0369	1	07/13/2022 17:39	WG1893676
Benzo(g,h,i)perylene	U		0.00675	0.0369	1	07/13/2022 17:39	WG1893676
Benzo(a)pyrene	U		0.00686	0.0369	1	07/13/2022 17:39	WG1893676
Bis(2-chlorethoxy)methane	U		0.0111	0.369	1	07/13/2022 17:39	WG1893676
Bis(2-chloroethyl)ether	U		0.0122	0.369	1	07/13/2022 17:39	WG1893676
2,2-Oxybis(1-Chloropropane)	U		0.0160	0.369	1	07/13/2022 17:39	WG1893676
4-Bromophenyl-phenylether	U		0.0130	0.369	1	07/13/2022 17:39	WG1893676
2-Chloronaphthalene	U		0.00648	0.0369	1	07/13/2022 17:39	WG1893676
4-Chlorophenyl-phenylether	U		0.0129	0.369	1	07/13/2022 17:39	WG1893676
Chrysene	U		0.00734	0.0369	1	07/13/2022 17:39	WG1893676
Dibenz(a,h)anthracene	U		0.0102	0.0369	1	07/13/2022 17:39	WG1893676
3,3-Dichlorobenzidine	U		0.0136	0.369	1	07/13/2022 17:39	WG1893676
2,4-Dinitrotoluene	U		0.0106	0.369	1	07/13/2022 17:39	WG1893676
2,6-Dinitrotoluene	U		0.0121	0.369	1	07/13/2022 17:39	WG1893676
Fluoranthene	U		0.00666	0.0369	1	07/13/2022 17:39	WG1893676
Fluorene	U		0.00601	0.0369	1	07/13/2022 17:39	WG1893676
Hexachlorobenzene	U		0.0131	0.369	1	07/13/2022 17:39	WG1893676
Hexachloro-1,3-butadiene	U		0.0124	0.369	1	07/13/2022 17:39	WG1893676
Hexachlorocyclopentadiene	U		0.0194	0.369	1	07/13/2022 17:39	WG1893676
Hexachloroethane	U		0.0145	0.369	1	07/13/2022 17:39	WG1893676
Indeno(1,2,3-cd)pyrene	U		0.0104	0.0369	1	07/13/2022 17:39	WG1893676
Isophorone	U		0.0113	0.369	1	07/13/2022 17:39	WG1893676
Naphthalene	U		0.00926	0.0369	1	07/13/2022 17:39	WG1893676
Nitrobenzene	U		0.0129	0.369	1	07/13/2022 17:39	WG1893676
n-Nitrosodimethylamine	U		0.0547	0.369	1	07/13/2022 17:39	WG1893676
n-Nitrosodiphenylamine	U		0.0279	0.369	1	07/13/2022 17:39	WG1893676
n-Nitrosodi-n-propylamine	U		0.0123	0.369	1	07/13/2022 17:39	WG1893676
Phenanthrene	U		0.00732	0.0369	1	07/13/2022 17:39	WG1893676
Pyridine	U		0.0244	0.369	1	07/13/2022 17:39	WG1893676
Benzylbutyl phthalate	U		0.0115	0.369	1	07/13/2022 17:39	WG1893676
Bis(2-ethylhexyl)phthalate	U		0.0468	0.369	1	07/13/2022 17:39	WG1893676
Di-n-butyl phthalate	U		0.0126	0.369	1	07/13/2022 17:39	WG1893676
Diethyl phthalate	U		0.0122	0.369	1	07/13/2022 17:39	WG1893676
Dimethyl phthalate	U		0.0782	0.369	1	07/13/2022 17:39	WG1893676
Di-n-octyl phthalate	U		0.0249	0.369	1	07/13/2022 17:39	WG1893676
Pyrene	U		0.00718	0.0369	1	07/13/2022 17:39	WG1893676
1,2,4-Trichlorobenzene	U		0.0115	0.369	1	07/13/2022 17:39	WG1893676
4-Chloro-3-methylphenol	U		0.0120	0.369	1	07/13/2022 17:39	WG1893676
2-Chlorophenol	U		0.0122	0.369	1	07/13/2022 17:39	WG1893676
2,4-Dichlorophenol	U		0.0107	0.369	1	07/13/2022 17:39	WG1893676
2,4-Dimethylphenol	U		0.00964	0.369	1	07/13/2022 17:39	WG1893676
4,6-Dinitro-2-methylphenol	U		0.0837	0.369	1	07/13/2022 17:39	WG1893676
2,4-Dinitrophenol	U		0.0863	0.369	1	07/13/2022 17:39	WG1893676
2-Methylphenol	U		0.0111	0.369	1	07/13/2022 17:39	WG1893676
3&4-Methyl Phenol	U		0.0115	0.369	1	07/13/2022 17:39	WG1893676
2-Nitrophenol	U		0.0132	0.369	1	07/13/2022 17:39	WG1893676
4-Nitrophenol	U		0.0115	0.369	1	07/13/2022 17:39	WG1893676
Pentachlorophenol	U		0.00993	0.369	1	07/13/2022 17:39	WG1893676
Phenol	U		0.0148	0.369	1	07/13/2022 17:39	WG1893676
2,4,6-Trichlorophenol	U		0.0119	0.369	1	07/13/2022 17:39	WG1893676
2,4,5-Trichlorophenol	U		0.0125	0.369	1	07/13/2022 17:39	WG1893676

Semi Volatile Organic Compounds (GC/MS) by Method 8270E

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) 2-Fluorophenol	*43.5*			*12.0-120*		*07/13/2022 17:39*	WG1893676
(S) Phenol-d5	*41.5*			*10.0-120*		*07/13/2022 17:39*	WG1893676
(S) Nitrobenzene-d5	*48.2*			*10.0-122*		*07/13/2022 17:39*	WG1893676
(S) 2-Fluorobiphenyl	*49.7*			*15.0-120*		*07/13/2022 17:39*	WG1893676
(S) 2,4,6-Tribromophenol	*63.0*			*10.0-127*		*07/13/2022 17:39*	WG1893676
(S) p-Terphenyl-d14	*58.2*			*10.0-120*		*07/13/2022 17:39*	WG1893676

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00255	0.00665	1	07/13/2022 22:36	WG1893667
Acenaphthene	U		0.00232	0.00665	1	07/13/2022 22:36	WG1893667
Acenaphthylene	U		0.00239	0.00665	1	07/13/2022 22:36	WG1893667
Benzo(a)anthracene	U		0.00192	0.00665	1	07/13/2022 22:36	WG1893667
Benzo(a)pyrene	U		0.00198	0.00665	1	07/13/2022 22:36	WG1893667
Benzo(b)fluoranthene	U		0.00170	0.00665	1	07/13/2022 22:36	WG1893667
Benzo(g,h,i)perylene	U		0.00196	0.00665	1	07/13/2022 22:36	WG1893667
Benzo(k)fluoranthene	U		0.00238	0.00665	1	07/13/2022 22:36	WG1893667
Chrysene	U		0.00257	0.00665	1	07/13/2022 22:36	WG1893667
Dibenz(a,h)anthracene	U		0.00191	0.00665	1	07/13/2022 22:36	WG1893667
Fluoranthene	U		0.00252	0.00665	1	07/13/2022 22:36	WG1893667
Fluorene	U		0.00227	0.00665	1	07/13/2022 22:36	WG1893667
Indeno(1,2,3-cd)pyrene	U		0.00201	0.00665	1	07/13/2022 22:36	WG1893667
Naphthalene	U		0.00452	0.0222	1	07/13/2022 22:36	WG1893667
Phenanthrene	U		0.00256	0.00665	1	07/13/2022 22:36	WG1893667
Pyrene	U		0.00222	0.00665	1	07/13/2022 22:36	WG1893667
1-Methylnaphthalene	U		0.00497	0.0222	1	07/13/2022 22:36	WG1893667
2-Methylnaphthalene	U		0.00473	0.0222	1	07/13/2022 22:36	WG1893667
2-Chloronaphthalene	U		0.00516	0.0222	1	07/13/2022 22:36	WG1893667
(S) Nitrobenzene-d5	*64.5*			*14.0-149*		*07/13/2022 22:36*	WG1893667
(S) 2-Fluorobiphenyl	*72.4*			*34.0-125*		*07/13/2022 22:36*	WG1893667
(S) p-Terphenyl-d14	*86.5*			*23.0-120*		*07/13/2022 22:36*	WG1893667

Method Blank (MB)

(MB) R3812745-1 07/08/22 10:14

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1511247-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1511247-15 07/08/22 10:14 • (DUP) R3812745-3 07/08/22 10:14

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	82.1	81.6	1	0.511		10

Laboratory Control Sample (LCS)

(LCS) R3812745-2 07/08/22 10:14

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	49.9	99.8	85.0-115	

Method Blank (MB)

(MB) R3816092-1 07/18/22 11:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3816092-2 07/18/22 11:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.541	108	80.0-120	

L1511304-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511304-01 07/18/22 11:15 • (MS) R3816092-3 07/18/22 11:17 • (MSD) R3816092-4 07/18/22 11:20

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.500	U	0.524	0.476	105	95.2	1	75.0-125			9.59	20

Method Blank (MB)

(MB) R3816905-1 07/19/22 21:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Aluminum	U		6.90	50.0
Antimony	U		0.166	3.00
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Beryllium	U		0.138	2.50
Cadmium	U		0.0855	1.00
Calcium	U		75.5	500
Chromium	U		0.297	5.00
Cobalt	U		0.0463	1.00
Copper	U		0.133	5.00
Iron	U		8.95	50.0
Lead	U		0.0990	2.00
Magnesium	U		45.9	500
Manganese	U		0.269	2.50
Nickel	0.366	J	0.197	2.50
Potassium	U		68.0	500
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Sodium	U		76.5	500
Thallium	U		0.0650	2.00
Vanadium	U		0.187	2.50
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R3816905-2 07/19/22 21:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	1000	931	93.1	80.0-120	
Antimony	100	101	101	80.0-120	
Arsenic	100	88.2	88.2	80.0-120	
Barium	100	92.8	92.8	80.0-120	
Beryllium	100	88.5	88.5	80.0-120	
Cadmium	100	93.1	93.1	80.0-120	
Calcium	1000	894	89.4	80.0-120	
Chromium	100	88.8	88.8	80.0-120	
Cobalt	100	91.7	91.7	80.0-120	
Copper	100	83.5	83.5	80.0-120	
Iron	1000	919	91.9	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3816905-2 07/19/22 21:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lead	100	92.0	92.0	80.0-120	
Magnesium	1000	918	91.8	80.0-120	
Manganese	100	86.0	86.0	80.0-120	
Nickel	100	91.8	91.8	80.0-120	
Potassium	1000	939	93.9	80.0-120	
Selenium	100	96.8	96.8	80.0-120	
Silver	20.0	18.7	93.7	80.0-120	
Sodium	1000	1020	102	80.0-120	
Thallium	100	86.0	86.0	80.0-120	
Vanadium	100	89.6	89.6	80.0-120	
Zinc	100	89.3	89.3	80.0-120	

L1512809-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1512809-01 07/19/22 21:51 • (MS) R3816905-5 07/19/22 22:01 • (MSD) R3816905-6 07/19/22 22:04

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum	1030	3950	5410	5720	142	172	5	75.0-125	J5	J5	5.60	20
Antimony	103	0.555	93.9	101	90.6	97.7	5	75.0-125			7.42	20
Arsenic	103	1.38	93.0	97.4	89.0	93.3	5	75.0-125			4.63	20
Barium	103	113	250	222	133	105	5	75.0-125	J5		12.0	20
Beryllium	103	0.292	98.1	99.2	95.0	96.1	5	75.0-125			1.19	20
Cadmium	103	0.207	101	104	97.6	101	5	75.0-125			3.59	20
Calcium	1030	6380	7570	7730	115	131	5	75.0-125		V	2.07	20
Chromium	103	9.32	105	107	93.2	95.2	5	75.0-125			1.94	20
Cobalt	103	11.2	107	112	93.0	97.5	5	75.0-125			4.31	20
Copper	103	21.6	118	121	93.6	96.3	5	75.0-125			2.34	20
Iron	1030	24500	27500	28400	283	373	5	75.0-125	V	V	3.34	20
Lead	103	38.3	156	140	115	98.3	5	75.0-125			11.4	20
Magnesium	1030	4400	5800	5750	136	131	5	75.0-125	V	V	0.931	20
Manganese	103	435	569	562	131	123	5	75.0-125	V		1.37	20
Nickel	103	10.2	106	110	92.8	97.3	5	75.0-125			4.23	20
Potassium	1030	389	1400	1450	98.3	103	5	75.0-125			3.56	20
Selenium	103	0.326	101	111	98.1	107	5	75.0-125			8.95	20
Silver	20.6	U	20.5	21.5	99.6	104	5	75.0-125			4.76	20
Sodium	1030	796	1920	1980	109	115	5	75.0-125			3.13	20
Thallium	103	0.0835	99.1	99.9	96.2	97.0	5	75.0-125			0.784	20
Vanadium	103	25.7	119	134	90.8	105	5	75.0-125			11.6	20
Zinc	103	83.3	187	187	101	100	5	75.0-125			0.263	20

Method Blank (MB)

(MB) R3814470-2 07/09/22 18:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPHG C6 - C12	U		0.848	2.50
(S) a,a,a-Trifluorotoluene(FID)	*98.3*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3814470-1 07/09/22 16:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHG C6 - C12	5.50	5.78	105	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*113*	*77.0-120*	

Method Blank (MB)

(MB) R3814053-1 07/13/22 02:40

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	*64.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3814053-2 07/13/22 02:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	41.2	82.4	50.0-150	
(S) o-Terphenyl			*55.1*	*18.0-148*	

L1511276-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511276-02 07/13/22 04:12 • (MS) R3814053-3 07/13/22 04:25 • (MSD) R3814053-4 07/13/22 04:38

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	49.4	2.27	41.4	34.9	79.2	66.3	1	50.0-150			17.0	20
(S) o-Terphenyl					*45.9*	*43.1*		*18.0-148*				

Method Blank (MB)

(MB) R3815521-1 07/14/22 19:36

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
2,4-D	U		0.00702	0.0700
Dalapon	U		0.0113	0.0700
2,4-DB	U		0.0297	0.0700
Dicamba	U		0.0157	0.0700
Dichloroprop	U		0.0245	0.0700
Dinoseb	U		0.00697	0.0700
MCPA	U		0.443	6.50
MCPP	U		0.367	6.50
2,4,5-T	U		0.00852	0.0700
2,4,5-TP (Silvex)	U		0.0107	0.0700
(S) 2,4-Dichlorophenyl Acetic Acid	*61.7*			*22.0-132*

Laboratory Control Sample (LCS)

(LCS) R3815521-2 07/14/22 19:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4-D	0.167	0.136	81.4	40.0-120	
Dalapon	0.167	0.117	70.1	15.0-120	
2,4-DB	0.167	0.119	71.3	25.0-143	
Dicamba	0.167	0.133	79.6	43.0-120	
Dichloroprop	0.167	0.144	86.2	32.0-129	
Dinoseb	0.167	0.124	74.3	10.0-120	
MCPA	16.7	12.9	77.2	31.0-121	
MCPP	16.7	10.2	61.1	28.0-133	
2,4,5-T	0.167	0.114	68.3	41.0-120	
2,4,5-TP (Silvex)	0.167	0.120	71.9	42.0-120	
(S) 2,4-Dichlorophenyl Acetic Acid			*65.3*	*22.0-132*	

L1511677-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511677-01 07/14/22 22:19 • (MS) R3815521-3 07/14/22 22:34 • (MSD) R3815521-4 07/14/22 22:48

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-D	0.189	U	0.0838	0.0574	44.4	30.7	1	10.0-160		J3	37.5	24
Dalapon	0.189	U	0.0207	0.0139	11.0	7.42	1	10.0-121		J3 J6	39.7	27
2,4-DB	0.189	U	0.112	0.106	59.2	57.0	1	10.0-160			5.04	22

L1511677-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511677-01 07/14/22 22:19 • (MS) R3815521-3 07/14/22 22:34 • (MSD) R3815521-4 07/14/22 22:48

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Dicamba	0.189	U	0.0665	0.0460	35.2	24.7	1	10.0-154		J3	36.4	21
Dichloroprop	0.189	U	0.119	0.0946	63.0	50.7	1	10.0-158		J3	22.9	20
Dinoseb	0.189	U	0.129	0.126	68.5	67.5	1	10.0-120			2.69	40
MCPA	18.9	U	10.4	8.53	55.2	45.7	1	10.0-160			19.9	40
MCPP	18.9	U	9.40	7.88	49.8	42.2	1	10.0-160			17.6	40
2,4,5-T	0.189	U	0.0913	0.0666	48.3	35.7	1	10.0-157		J3	31.2	20
2,4,5-TP (Silvex)	0.189	U	0.0914	0.0851	48.4	45.6	1	10.0-156			7.14	20
(S) 2,4-Dichlorophenyl Acetic Acid					*53.2*	*47.9*		*22.0-132*				

Method Blank (MB)

(MB) R3814071-1 07/12/22 22:48

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Aldrin	U		0.00376	0.0200
Alpha BHC	U		0.00368	0.0200
Beta BHC	U		0.00379	0.0200
Delta BHC	U		0.00346	0.0200
Gamma BHC	U		0.00344	0.0200
Chlordane	U		0.103	0.300
4,4-DDD	U		0.00370	0.0200
4,4-DDE	U		0.00366	0.0200
4,4-DDT	U		0.00627	0.0200
Dieldrin	U		0.00344	0.0200
Endosulfan I	U		0.00363	0.0200
Endosulfan II	U		0.00335	0.0200
Endosulfan sulfate	U		0.00364	0.0200
Endrin	U		0.00350	0.0200
Endrin aldehyde	U		0.00339	0.0200
Endrin ketone	U		0.00711	0.0200
Heptachlor	U		0.00428	0.0200
Heptachlor epoxide	U		0.00339	0.0200
Hexachlorobenzene	U		0.00346	0.0200
Methoxychlor	U		0.00484	0.0200
Toxaphene	U		0.124	0.400
(S) Decachlorobiphenyl	*69.8*			*10.0-135*
(S) Tetrachloro-m-xylene	*64.7*			*10.0-139*

Laboratory Control Sample (LCS)

(LCS) R3814071-2 07/12/22 22:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aldrin	0.0666	0.0449	67.4	34.0-136	
Alpha BHC	0.0666	0.0425	63.8	34.0-139	
Beta BHC	0.0666	0.0475	71.3	34.0-133	
Delta BHC	0.0666	0.0441	66.2	34.0-135	
Gamma BHC	0.0666	0.0473	71.0	34.0-136	
4,4-DDD	0.0666	0.0478	71.8	33.0-141	P
4,4-DDE	0.0666	0.0443	66.5	34.0-134	
4,4-DDT	0.0666	0.0479	71.9	30.0-143	P
Dieldrin	0.0666	0.0419	62.9	35.0-137	
Endosulfan I	0.0666	0.0451	67.7	34.0-134	

Laboratory Control Sample (LCS)

(LCS) R3814071-2 07/12/22 22:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Endosulfan II	0.0666	0.0420	63.1	35.0-132	P
Endosulfan sulfate	0.0666	0.0437	65.6	35.0-132	P
Endrin	0.0666	0.0155	23.3	34.0-137	J4
Endrin aldehyde	0.0666	0.0327	49.1	23.0-121	P
Endrin ketone	0.0666	0.0693	104	35.0-144	P
Heptachlor	0.0666	0.0500	75.1	36.0-141	P
Heptachlor epoxide	0.0666	0.0480	72.1	36.0-134	
Hexachlorobenzene	0.0666	0.0443	66.5	33.0-129	
Methoxychlor	0.0666	0.0486	73.0	28.0-150	P
(S) Decachlorobiphenyl			*81.5*	*10.0-135*	
(S) Tetrachloro-m-xylene			*74.3*	*10.0-139*	

L1511124-16 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511124-16 07/12/22 23:55 • (MS) R3814071-3 07/13/22 00:04 • (MSD) R3814071-4 07/13/22 00:14

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aldrin	0.0666	U	0.0327	0.00892	49.1	13.4	1	20.0-135		J3 J6	114	37
Alpha BHC	0.0666	U	0.0319	0.00882	47.9	13.2	1	27.0-140		J3 J6	113	35
Beta BHC	0.0666	U	0.0345	0.0104	51.8	15.6	1	23.0-141		J3 J6	107	37
Delta BHC	0.0666	U	0.0316	0.00906	47.4	13.6	1	21.0-138		J3 J6	111	35
Gamma BHC	0.0666	U	0.0343	0.00969	51.5	14.5	1	27.0-137		J3 J6	112	36
4,4-DDD	0.0666	U	0.0361	0.0111	54.2	16.7	1	15.0-152		J3	106	39
4,4-DDE	0.0666	U	0.0353	0.00982	53.0	14.7	1	10.0-152		J3	113	40
4,4-DDT	0.0666	U	0.0407	0.0125	61.1	18.8	1	10.0-151	P	J3	106	40
Dieldrin	0.0666	U	0.0350	0.00997	52.6	15.0	1	17.0-145		J3 J6	111	37
Endosulfan I	0.0666	U	0.0328	0.00941	49.2	14.1	1	20.0-137		J3 J6	111	36
Endosulfan II	0.0666	U	0.0325	0.00999	48.8	15.0	1	15.0-141	P	J3	106	37
Endosulfan sulfate	0.0666	U	0.0289	0.00891	43.4	13.4	1	15.0-143	P	J3 J6	106	38
Endrin	0.0666	U	0.0349	0.0117	52.4	17.6	1	19.0-143		J3 J6	99.6	37
Endrin aldehyde	0.0666	U	0.0312	0.00906	46.8	13.6	1	10.0-139	P	J3	110	40
Endrin ketone	0.0666	U	0.0343	0.0114	51.5	17.1	1	17.0-149		J3	100	38
Heptachlor	0.0666	U	0.0376	0.0108	56.5	16.2	1	22.0-138		J3 J6	111	37
Heptachlor epoxide	0.0666	U	0.0342	0.00946	51.4	14.2	1	22.0-138		J3 J6	113	36
Hexachlorobenzene	0.0666	U	0.0352	0.0106	52.9	15.9	1	25.0-126		J3 J6	107	35
Methoxychlor	0.0666	U	0.0386	0.0132	58.0	19.8	1	10.0-159	P	J3	98.1	40
(S) Decachlorobiphenyl					*53.6*	*31.2*		*10.0-135*				
(S) Tetrachloro-m-xylene					*49.4*	*22.1*		*10.0-139*				

Method Blank (MB)

(MB) R3814071-1 07/12/22 22:48

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.0118	0.0340
PCB 1221	U		0.0118	0.0340
PCB 1232	U		0.0118	0.0340
PCB 1242	U		0.0118	0.0340
PCB 1248	U		0.00738	0.0170
PCB 1254	U		0.00738	0.0170
PCB 1260	U		0.00738	0.0170
PCB 1262	U		0.00738	0.0170
PCB 1268	U		0.00738	0.0170
(S) Decachlorobiphenyl	*64.0*			*10.0-135*
(S) Tetrachloro-m-xylene	*59.8*			*10.0-139*

Laboratory Control Sample (LCS)

(LCS) R3814071-5 07/12/22 23:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
PCB 1016	0.167	0.0708	42.4	36.0-141	
PCB 1260	0.167	0.0621	37.2	37.0-145	
(S) Decachlorobiphenyl			*35.3*	*10.0-135*	
(S) Tetrachloro-m-xylene			*33.2*	*10.0-139*	

L1511124-16 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511124-16 07/12/22 23:55 • (MS) R3814071-6 07/13/22 00:24 • (MSD) R3814071-7 07/13/22 00:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1016	0.167	U	0.0409	0.0547	24.5	32.8	1	10.0-160			28.9	37
PCB 1260	0.167	U	0.0343	0.0460	20.5	27.5	1	10.0-160			29.1	38
(S) Decachlorobiphenyl					*24.5*	*29.0*		*10.0-135*				
(S) Tetrachloro-m-xylene					*24.8*	*27.9*		*10.0-139*				

Method Blank (MB)

(MB) R3814728-2 07/13/22 16:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00539	0.0333
Acenaphthylene	U		0.00469	0.0333
Anthracene	U		0.00593	0.0333
Benzo(a)anthracene	U		0.00587	0.0333
Benzo(b)fluoranthene	U		0.00621	0.0333
Benzo(k)fluoranthene	U		0.00592	0.0333
Benzo(g,h,i)perylene	U		0.00609	0.0333
Benzo(a)pyrene	U		0.00619	0.0333
Bis(2-chlorethoxy)methane	U		0.0100	0.333
Bis(2-chloroethyl)ether	U		0.0110	0.333
2,2-oxybis(1-chloropropane)	U		0.0144	0.333
4-Bromophenyl-phenylether	U		0.0117	0.333
2-Chloronaphthalene	U		0.00585	0.0333
4-Chlorophenyl-phenylether	U		0.0116	0.333
Chrysene	U		0.00662	0.0333
Dibenz(a,h)anthracene	U		0.00923	0.0333
3,3-Dichlorobenzidine	U		0.0123	0.333
2,4-Dinitrotoluene	U		0.00955	0.333
2,6-Dinitrotoluene	U		0.0109	0.333
Fluoranthene	U		0.00601	0.0333
Fluorene	U		0.00542	0.0333
Hexachlorobenzene	U		0.0118	0.333
Hexachloro-1,3-butadiene	U		0.0112	0.333
Hexachlorocyclopentadiene	U		0.0175	0.333
Hexachloroethane	U		0.0131	0.333
Indeno(1,2,3-cd)pyrene	U		0.00941	0.0333
Isophorone	U		0.0102	0.333
Naphthalene	U		0.00836	0.0333
Nitrobenzene	U		0.0116	0.333
n-Nitrosodimethylamine	U		0.0494	0.333
n-Nitrosodiphenylamine	U		0.0252	0.333
n-Nitrosodi-n-propylamine	U		0.0111	0.333
Phenanthrene	U		0.00661	0.0333
Pyridine	U		0.0220	0.333
Benzylbutyl phthalate	U		0.0104	0.333
Bis(2-ethylhexyl)phthalate	U		0.0422	0.333
Di-n-butyl phthalate	U		0.0114	0.333
Diethyl phthalate	U		0.0110	0.333
Dimethyl phthalate	U		0.0706	0.333
Di-n-octyl phthalate	U		0.0225	0.333

Method Blank (MB)

(MB) R3814728-2 07/13/22 16:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Pyrene	U		0.00648	0.0333
1,2,4-Trichlorobenzene	U		0.0104	0.333
4-Chloro-3-methylphenol	U		0.0108	0.333
2-Chlorophenol	U		0.0110	0.333
2,4-Dichlorophenol	U		0.00970	0.333
2,4-Dimethylphenol	U		0.00870	0.333
4,6-Dinitro-2-methylphenol	U		0.0755	0.333
2,4-Dinitrophenol	U		0.0779	0.333
2-Methylphenol	U		0.0100	0.333
3&4-Methyl Phenol	U		0.0104	0.333
2-Nitrophenol	U		0.0119	0.333
4-Nitrophenol	U		0.0104	0.333
Pentachlorophenol	U		0.00896	0.333
Phenol	U		0.0134	0.333
2,4,6-Trichlorophenol	U		0.0107	0.333
2,4,5-Trichlorophenol	U		0.0113	0.333
(S) 2-Fluorophenol	*59.5*			*12.0-120*
(S) Phenol-d5	*57.4*			*10.0-120*
(S) Nitrobenzene-d5	*61.0*			*10.0-122*
(S) 2-Fluorobiphenyl	*64.6*			*15.0-120*
(S) 2,4,6-Tribromophenol	*75.5*			*10.0-127*
(S) p-Terphenyl-d14	*73.0*			*10.0-120*

Laboratory Control Sample (LCS)

(LCS) R3814728-1 07/13/22 15:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.666	0.414	62.2	38.0-120	
Acenaphthylene	0.666	0.444	66.7	40.0-120	
Anthracene	0.666	0.422	63.4	42.0-120	
Benzo(a)anthracene	0.666	0.483	72.5	44.0-120	
Benzo(b)fluoranthene	0.666	0.468	70.3	43.0-120	
Benzo(k)fluoranthene	0.666	0.456	68.5	44.0-120	
Benzo(g,h,i)perylene	0.666	0.472	70.9	43.0-120	
Benzo(a)pyrene	0.666	0.526	79.0	45.0-120	
Bis(2-chlorethoxy)methane	0.666	0.405	60.8	20.0-120	
Bis(2-chloroethyl)ether	0.666	0.363	54.5	16.0-120	
2,2-Oxybis(1-Chloropropane)	0.666	0.316	47.4	23.0-120	

Laboratory Control Sample (LCS)

(LCS) R3814728-1 07/13/22 15:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
4-Bromophenyl-phenylether	0.666	0.477	71.6	40.0-120	
2-Chloronaphthalene	0.666	0.394	59.2	35.0-120	
4-Chlorophenyl-phenylether	0.666	0.494	74.2	40.0-120	
Chrysene	0.666	0.468	70.3	43.0-120	
Dibenz(a,h)anthracene	0.666	0.456	68.5	44.0-120	
3,3-Dichlorobenzidine	1.33	0.921	69.2	28.0-120	
2,4-Dinitrotoluene	0.666	0.533	80.0	45.0-120	
2,6-Dinitrotoluene	0.666	0.481	72.2	42.0-120	
Fluoranthene	0.666	0.473	71.0	44.0-120	
Fluorene	0.666	0.460	69.1	41.0-120	
Hexachlorobenzene	0.666	0.463	69.5	39.0-120	
Hexachloro-1,3-butadiene	0.666	0.500	75.1	15.0-120	
Hexachlorocyclopentadiene	0.666	0.258	38.7	15.0-120	
Hexachloroethane	0.666	0.363	54.5	17.0-120	
Indeno(1,2,3-cd)pyrene	0.666	0.512	76.9	45.0-120	
Isophorone	0.666	0.414	62.2	23.0-120	
Naphthalene	0.666	0.388	58.3	18.0-120	
Nitrobenzene	0.666	0.426	64.0	17.0-120	
n-Nitrosodimethylamine	0.666	0.329	49.4	10.0-125	
n-Nitrosodiphenylamine	0.666	0.418	62.8	40.0-120	
n-Nitrosodi-n-propylamine	0.666	0.373	56.0	26.0-120	
Phenanthrene	0.666	0.414	62.2	42.0-120	
Pyridine	0.666	0.150	22.5	10.0-120	
Benzylbutyl phthalate	0.666	0.477	71.6	40.0-120	
Bis(2-ethylhexyl)phthalate	0.666	0.466	70.0	41.0-120	
Di-n-butyl phthalate	0.666	0.452	67.9	43.0-120	
Diethyl phthalate	0.666	0.506	76.0	43.0-120	
Dimethyl phthalate	0.666	0.461	69.2	43.0-120	
Di-n-octyl phthalate	0.666	0.501	75.2	40.0-120	
Pyrene	0.666	0.462	69.4	41.0-120	
1,2,4-Trichlorobenzene	0.666	0.442	66.4	17.0-120	
4-Chloro-3-methylphenol	0.666	0.480	72.1	28.0-120	
2-Chlorophenol	0.666	0.375	56.3	28.0-120	
2,4-Dichlorophenol	0.666	0.464	69.7	25.0-120	
2,4-Dimethylphenol	0.666	0.465	69.8	15.0-120	
4,6-Dinitro-2-methylphenol	0.666	0.405	60.8	16.0-120	
2,4-Dinitrophenol	0.666	0.295	44.3	10.0-120	
2-Methylphenol	0.666	0.392	58.9	35.0-120	
3&4-Methyl Phenol	0.666	0.450	67.6	42.0-120	
2-Nitrophenol	0.666	0.436	65.5	20.0-120	

Laboratory Control Sample (LCS)

(LCS) R3814728-1 07/13/22 15:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
4-Nitrophenol	0.666	0.402	60.4	27.0-120	
Pentachlorophenol	0.666	0.434	65.2	29.0-120	
Phenol	0.666	0.378	56.8	28.0-120	
2,4,6-Trichlorophenol	0.666	0.484	72.7	37.0-120	
2,4,5-Trichlorophenol	0.666	0.475	71.3	38.0-120	
(S) 2-Fluorophenol			*58.1*	*12.0-120*	
(S) Phenol-d5			*58.6*	*10.0-120*	
(S) Nitrobenzene-d5			*62.8*	*10.0-122*	
(S) 2-Fluorobiphenyl			*64.6*	*15.0-120*	
(S) 2,4,6-Tribromophenol			*75.5*	*10.0-127*	
(S) p-Terphenyl-d14			*71.5*	*10.0-120*	

L1510763-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1510763-01 07/13/22 16:36 • (MS) R3814728-3 07/13/22 16:57 • (MSD) R3814728-4 07/13/22 17:18

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.735	U	0.404	0.406	55.0	54.0	1	18.0-120			0.283	32
Acenaphthylene	0.735	U	0.446	0.440	60.6	58.5	1	25.0-120			1.29	32
Anthracene	0.735	U	0.416	0.436	56.5	58.1	1	22.0-120			4.84	29
Benzo(a)anthracene	0.735	U	0.522	0.516	71.0	68.6	1	25.0-120			1.32	29
Benzo(b)fluoranthene	0.735	U	0.518	0.505	70.4	67.2	1	19.0-122			2.46	31
Benzo(k)fluoranthene	0.735	U	0.498	0.482	67.8	64.2	1	23.0-120			3.27	30
Benzo(g,h,i)perylene	0.735	U	0.518	0.504	70.4	67.1	1	10.0-120			2.69	33
Benzo(a)pyrene	0.735	U	0.568	0.554	77.3	73.8	1	24.0-120			2.45	30
Bis(2-chlorethoxy)methane	0.735	U	0.406	0.379	55.1	50.5	1	10.0-120			6.72	34
Bis(2-chloroethyl)ether	0.735	U	0.361	0.314	49.1	41.8	1	10.0-120			13.9	40
2,2-Oxybis(1-Chloropropane)	0.735	U	0.314	0.290	42.7	38.6	1	10.0-120			7.97	40
4-Bromophenyl-phenylether	0.735	U	0.487	0.496	66.2	66.0	1	27.0-120			1.86	30
2-Chloronaphthalene	0.735	U	0.387	0.383	52.6	50.9	1	20.0-120			1.19	32
4-Chlorophenyl-phenylether	0.735	U	0.501	0.506	68.1	67.4	1	24.0-120			1.14	29
Chrysene	0.735	U	0.497	0.493	67.6	65.5	1	21.0-120			0.926	29
Dibenz(a,h)anthracene	0.735	U	0.496	0.494	67.4	65.7	1	10.0-120			0.463	32
3,3-Dichlorobenzidine	1.47	U	1.04	1.04	70.9	69.1	1	10.0-120			0.221	34
2,4-Dinitrotoluene	0.735	U	0.533	0.537	72.4	71.5	1	30.0-120			0.857	31
2,6-Dinitrotoluene	0.735	U	0.467	0.485	63.6	64.5	1	25.0-120			3.61	31
Fluoranthene	0.735	U	0.482	0.485	65.6	64.5	1	18.0-126			0.474	32
Fluorene	0.735	U	0.466	0.463	63.4	61.6	1	25.0-120			0.740	30
Hexachlorobenzene	0.735	U	0.491	0.486	66.8	64.6	1	27.0-120			1.17	28

L1510763-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1510763-01 07/13/22 16:36 • (MS) R3814728-3 07/13/22 16:57 • (MSD) R3814728-4 07/13/22 17:18

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexachloro-1,3-butadiene	0.735	U	0.522	0.475	71.0	63.3	1	10.0-120			9.41	38
Hexachlorocyclopentadiene	0.735	U	0.246	0.226	33.5	30.0	1	10.0-120			8.74	40
Hexachloroethane	0.735	U	0.356	0.320	48.4	42.5	1	10.0-120			10.8	40
Indeno(1,2,3-cd)pyrene	0.735	U	0.562	0.543	76.5	72.3	1	10.0-120			3.52	32
Isophorone	0.735	U	0.404	0.388	55.0	51.7	1	13.0-120			4.05	34
Naphthalene	0.735	U	0.395	0.361	53.7	48.0	1	10.0-120			9.09	35
Nitrobenzene	0.735	U	0.422	0.378	57.3	50.3	1	10.0-120			10.9	36
n-Nitrosodimethylamine	0.735	U	0.329	0.315	44.7	41.9	1	10.0-127			4.27	40
n-Nitrosodiphenylamine	0.735	U	0.423	0.442	57.5	58.8	1	17.0-120			4.50	29
n-Nitrosodi-n-propylamine	0.735	U	0.356	0.341	48.4	45.4	1	10.0-120			4.27	37
Phenanthrene	0.735	U	0.422	0.428	57.3	57.0	1	17.0-120			1.62	31
Pyridine	0.735	U	0.174	0.181	23.7	24.1	1	10.0-120			3.87	40
Benzylbutyl phthalate	0.735	U	0.498	0.501	67.8	66.6	1	23.0-120			0.459	30
Bis(2-ethylhexyl)phthalate	0.735	U	0.504	0.491	68.5	65.4	1	17.0-126			2.53	30
Di-n-butyl phthalate	0.735	U	0.461	0.469	62.6	62.3	1	30.0-120			1.73	29
Diethyl phthalate	0.735	U	0.489	0.507	66.5	67.5	1	26.0-120			3.68	28
Dimethyl phthalate	0.735	U	0.461	0.474	62.6	63.1	1	25.0-120			2.94	29
Di-n-octyl phthalate	0.735	U	0.551	0.536	74.9	71.3	1	21.0-123			2.74	29
Pyrene	0.735	U	0.477	0.481	64.8	64.0	1	16.0-121			0.957	32
1,2,4-Trichlorobenzene	0.735	U	0.455	0.412	61.8	54.9	1	12.0-120			9.78	37
4-Chloro-3-methylphenol	0.735	U	0.483	0.483	65.7	64.3	1	15.0-120			0.000	30
2-Chlorophenol	0.735	U	0.369	0.346	50.2	46.0	1	15.0-120			6.41	37
2,4-Dichlorophenol	0.735	U	0.475	0.467	64.6	62.2	1	20.0-120			1.70	31
2,4-Dimethylphenol	0.735	U	0.475	0.466	64.6	62.0	1	10.0-120			1.95	33
4,6-Dinitro-2-methylphenol	0.735	U	0.565	0.581	76.8	77.3	1	10.0-120			2.80	39
2,4-Dinitrophenol	0.735	U	0.601	0.632	81.8	84.1	1	10.0-121			5.01	40
2-Methylphenol	0.735	U	0.369	0.364	50.2	48.5	1	11.0-120			1.25	40
3&4-Methyl Phenol	0.735	U	0.433	0.432	58.9	57.5	1	12.0-123			0.265	38
2-Nitrophenol	0.735	U	0.451	0.423	61.4	56.2	1	12.0-120			6.55	39
4-Nitrophenol	0.735	U	0.404	0.434	55.0	57.8	1	10.0-137			7.10	32
Pentachlorophenol	0.735	U	0.487	0.499	66.2	66.5	1	10.0-160			2.56	31
Phenol	0.735	U	0.398	0.372	54.0	49.5	1	12.0-120			6.55	38
2,4,6-Trichlorophenol	0.735	U	0.480	0.495	65.3	65.9	1	19.0-120			3.06	32
2,4,5-Trichlorophenol	0.735	U	0.482	0.509	65.6	67.7	1	20.0-120			5.32	30
(S) 2-Fluorophenol					*56.4*	*50.9*		*12.0-120*				
(S) Phenol-d5					*54.8*	*49.4*		*10.0-120*				
(S) Nitrobenzene-d5					*62.3*	*52.7*		*10.0-122*				
(S) 2-Fluorobiphenyl					*61.7*	*60.1*		*15.0-120*				
(S) 2,4,6-Tribromophenol					*76.8*	*78.7*		*10.0-127*				

L1510763-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1510763-01 07/13/22 16:36 • (MS) R3814728-3 07/13/22 16:57 • (MSD) R3814728-4 07/13/22 17:18

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
(S) p-Terphenyl-d14					*70.4*	*69.8*		*10.0-120*				

Method Blank (MB)

(MB) R3814694-2 07/13/22 18:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	*63.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*74.8*			*34.0-125*
(S) p-Terphenyl-d14	*96.6*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3814694-1 07/13/22 18:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0625	78.1	50.0-126	
Acenaphthene	0.0800	0.0660	82.5	50.0-120	
Acenaphthylene	0.0800	0.0675	84.4	50.0-120	
Benzo(a)anthracene	0.0800	0.0610	76.3	45.0-120	
Benzo(a)pyrene	0.0800	0.0576	72.0	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0639	79.9	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0631	78.9	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0652	81.5	49.0-125	
Chrysene	0.0800	0.0643	80.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0649	81.1	47.0-125	
Fluoranthene	0.0800	0.0656	82.0	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3814694-1 07/13/22 18:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0673	84.1	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0617	77.1	46.0-125	
Naphthalene	0.0800	0.0622	77.8	50.0-120	
Phenanthrene	0.0800	0.0622	77.8	47.0-120	
Pyrene	0.0800	0.0648	81.0	43.0-123	
1-Methylnaphthalene	0.0800	0.0657	82.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0645	80.6	50.0-120	
2-Chloronaphthalene	0.0800	0.0649	81.1	50.0-120	
(S) Nitrobenzene-d5			*86.1*	*14.0-149*	
(S) 2-Fluorobiphenyl			*91.2*	*34.0-125*	
(S) p-Terphenyl-d14			*113*	*23.0-120*	

L1511218-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511218-04 07/13/22 21:16 • (MS) R3814694-3 07/13/22 21:36 • (MSD) R3814694-4 07/13/22 21:56

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0866	U	0.0529	0.0570	61.1	64.2	1	10.0-145			7.42	30
Acenaphthene	0.0866	U	0.0549	0.0646	63.5	72.7	1	14.0-127			16.1	27
Acenaphthylene	0.0866	U	0.0530	0.0615	61.3	69.3	1	21.0-124			14.8	25
Benzo(a)anthracene	0.0866	U	0.0488	0.0503	56.4	56.6	1	10.0-139			2.97	30
Benzo(a)pyrene	0.0866	U	0.0485	0.0502	56.0	56.5	1	10.0-141			3.44	31
Benzo(b)fluoranthene	0.0866	U	0.0466	0.0469	53.8	52.8	1	10.0-140			0.727	36
Benzo(g,h,i)perylene	0.0866	U	0.0527	0.0543	60.9	61.1	1	10.0-140			2.97	33
Benzo(k)fluoranthene	0.0866	U	0.0515	0.0548	59.6	61.7	1	10.0-137			6.18	31
Chrysene	0.0866	U	0.0578	0.0630	66.8	70.9	1	10.0-145			8.63	30
Dibenz(a,h)anthracene	0.0866	U	0.0515	0.0559	59.6	62.9	1	10.0-132			8.02	31
Fluoranthene	0.0866	U	0.0503	0.0540	58.1	60.8	1	10.0-153			7.17	33
Fluorene	0.0866	U	0.0543	0.0616	62.7	69.4	1	11.0-130			12.7	29
Indeno(1,2,3-cd)pyrene	0.0866	U	0.0441	0.0444	50.9	50.0	1	10.0-137			0.768	32
Naphthalene	0.0866	U	0.0543	0.0705	62.7	79.3	1	10.0-135			26.0	27
Phenanthrene	0.0866	U	0.0510	0.0578	58.9	65.1	1	10.0-144			12.5	31
Pyrene	0.0866	U	0.0526	0.0571	60.7	64.3	1	10.0-148			8.26	35
1-Methylnaphthalene	0.0866	U	0.0571	0.0687	66.0	77.3	1	10.0-142			18.4	28
2-Methylnaphthalene	0.0866	U	0.0554	0.0705	64.0	79.3	1	10.0-137			23.9	28
2-Chloronaphthalene	0.0866	U	0.0571	0.0648	66.0	73.0	1	29.0-120			12.6	24
(S) Nitrobenzene-d5					*66.3*	*78.0*		*14.0-149*				
(S) 2-Fluorobiphenyl					*68.0*	*76.0*		*34.0-125*				
(S) p-Terphenyl-d14					*84.7*	*88.2*		*23.0-120*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
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Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P	RPD between the primary and confirmatory analysis exceeded 40%.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

State of Oregon Chain of Custody (Pace)

Agency, Authorized Purchaser or Agent: GSI/Haley & Aldrich for ODEQ

Send Lab Report To: Don Hanson
Address: 165 E. 7th Avenue, Suite 100, Eugene, OR 97401
Tel. #: 541-687-7349
E-mail: don.hanson@deq.state.or.us, jbale@gsiws.com, cmartin@gsiws.com, mfargher@gsiws.com, GIS@gsiws.com

Contract Laboratory Name: Pace Analytical National
Lab Batch #:
Invoice: ODEQ/Business Office, 811 SW 6th Ave, Portland, OR 97204, Tel. #: (800) 452-4011

Lab Selection Criteria:
Proximity (if TAT < 48 hrs)
Prior work on same project
Cost (for anticipated analyses)
Other labs disqualified or unable to perform requested services
Emergency work

Turn Around Time:
10 days (std.)
5 days
72 hours
48 hours
24 hours
Other _____

Project Name: OREGON DEQ-JH Baxter (72-18-32)

Project #: JH Baxter Removal Investigation

Sampler Names: G Schutzius, C Martin

J124

L1511257

Sample ID#	Collection Date	Collection Time	Matrix	Number of Containers	Sample Preservative: Solids: NA	Requested Analyses: ISM Processing prior to Analyses	Dioxin/furans by 1613B	TPH as Gasoline by NWTPH-Gx	TPH as Diesel/Oil by NWTPH-Dx	TAL Metals by EPA Method 6020B/ 7471B	PCBs by EPA Method 8082A	SVOCs by EPA Method 8270	PAHs by EPA Method 8270E-SIM	Pesticides by EPA 8081	Herbicides by EPA 8151	Comments
TS-001-0622	6/30/2022	16:15	SO	1		x	x	x	x	x	x	x	x	x	x	TAL metals listed in Notes below. -01

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

NOTES: Contact Josh Bale (530-276-4188, jbale@gsiws.com) or Chris Martin (503-432-5979, cmartin@gsiws.com) with questions. Include DEQ EDD with final lab report.

TAL metals include aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc.

Relinquished By: Chris Martin	Agency/Agent: GSI	Received By: William Steinhaus	Agency/Agent:
Signature:	Time & Date: 7/1/22 1200	Signature:	Time & Date: 7-2-22 9:00
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION **#102-1098-07** AND PRICE AGREEMENT # 8903. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

ANALYTICAL REPORT

July 29, 2022

Oregon Dept. of Env. Quality - ODEQ

Sample Delivery Group:	L1512340
Samples Received:	07/02/2022
Project Number:	72-18-32
Description:	JH Baxter Removal Investigation

Report To:

Don Hanson
165 E. 7th Avenue
Suite 100
Eugene, OR 97401

Entire Report Reviewed By:

Brian Ford
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SAMPLE SUMMARY

TS-001-0622 L1512340-01 Solid

Collected by: GS/CM
Collected date/time: 06/30/22 16:15
Received date/time: 07/02/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG1891393	1	07/26/22 00:00	07/26/22 00:00	-	Minneapolis, MN 55414

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Project Manager

Project Narrative

L1512340 -01 contains subout data that is included after the chain of custody.

GLOSSARY OF TERMS

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Abbreviations and Definitions

SDG	Sample Delivery Group.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
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Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
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Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

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State of Oregon Chain of Custody (Pace)

Agency, Authorized Purchaser or Agent: GSI/Haley & Aldrich for ODEQ	**Contract Laboratory Name:** Pace Analytical National	**Lab Selection Criteria:** Proximity (if TAT < 48 hrs); Prior work on same project; Cost (for anticipated analyses); Other labs disqualified or unable to perform requested services; Emergency work	**Turn Around Time:** (10 days (std.)); 5 days; 72 hours; 48 hours; 24 hours; Other _____
Send Lab Report To: Don Hanson **Address:** 165 E. 7th Avenue, Suite 100, Eugene, OR 97401 **Tel. #:** 541-687-7349 **E-mail:** don.hanson@deq.state.or.us, jbale@gsiws.com, cmartin@gsiws.com, mfargher@gsiws.com, GIS@gsiws.com	**Lab Batch #:** **Invoice:** ODEQ/Business Office, 811 SW 6th Ave, Portland, OR 97204, Tel #: (800) 452-4011		
Project Name: OREGON DEQ JH Baxter (72-18-32) **Project #:** JH Baxter Removal Investigation **Sampler Names:** G Schutzius, C Martin	J124		

Sample ID#	Collection Date	Collection Time	Matrix	Number of Containers	Sample Preservative: Solids: NA	Requested Analyses: ISM Processing prior to Analyses	Dioxin/furans by 1613B	TPH as Gasoline by NWTPH-Gx	TPH as Diesel/Oil by NWTPH-Dx	TAL Metals by EPA Method 6020B/ 7471B	PCBs by EPA Method 8082A	SVOCs by EPA Method 8270	PAHs by EPA Method 8270E-SIM	Pesticides by EPA 8081	Herbicides by EPA 8151	Comments
TS-001-0622	6/30/2022	16:15	SO	1		x	x	x	x	x	x	x	x	x	x	~~LIS11257~~ JSA 7-26-2022 TAL metals listed in Notes below. TO

Sample Receipt Checklist
COC Seal Present/Intact: ___Y___N If Applicable
COC Signed/Accurate: ___Y___N VOA Zero Headspace: ___Y___N
Bottles arrive intact: ___Y___N Pres.Correct/Check: ___Y___N
Correct bottles used: ___Y___N
Sufficient volume sent: ___Y___N
RAD Screen <0.5 mR/hr: ___Y___N

NOTES: Contact Josh Bale (530-276-4188, jbale@gsiws.com) or Chris Martin (503-432-5979, cmartin@gsiws.com) with questions. Include DEQ EDD with final lab report.

TAL metals include aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc

Relinquished By: Chris Martin	Agency/Agent: GSI	Received By: William Steinbach	Agency/Agent:
Signature:	Time & Date: 7/1/22 1200	Signature:	Time & Date: 7.2.22 900
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

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Pace Analytical™
www.pacelabs.com

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Report Prepared for:

Client Services
Pace Analytical National
12065 Lebanon Road
Mount Juliet TN 37122

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

Pace Project #: 10616033
Sample Receipt Date: 07/08/2022
Client Project #: L1512340 WG1891393
Client Sub PO #: L1512340
State Cert #: MN300001

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Kongmeng Vang, your Pace Project Manager.

This report has been reviewed by:

July 26, 2022

Kongmeng Vang, Project Manager
(612) 607-6382
(612) 607-6333 (fax)

Report Prepared Date:
July 26, 2022

Report of Laboratory Analysis

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analysis performed on one sample submitted by a representative of Pace Analytical National. The sample was analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using USEPA Method 1613B. The estimated detection limits (EDLs) were based on signal-to-noise measurements. Estimated maximum possible concentration (EMPC) values were treated as positives in the toxic equivalence calculations.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extract ranged from 44-88%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1613B. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for recovery and accurate values were obtained.

Values were flagged "I" where incorrect isotope ratios were obtained. Concentrations below the calibration range were flagged "J" and should be regarded as estimates.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain trace levels of selected congeners. These levels were below the calibration range for the method. Sample levels similar to the corresponding blank levels were flagged "B" on the results table and may be, at least partially, attributed to the background.

A laboratory spike sample was also prepared using clean reference matrix that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 98-120%. These results were within the target ranges for the method. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
		Mississippi	MN00064
		Missouri	10100
A2LA	2926.01	Montana	CERT0092
Alabama	40770	Nebraska	NE-OS-18-06
Alaska-DW	MN00064	Nevada	MN00064
Alaska-UST	17-009	New Hampshire	2081
Arizona	AZ0014	New Jersey	MN002
Arkansas - WW	88-0680	New York	11647
Arkansas-DW	MN00064	North Carolina-	27700
California	2929	North Carolina-	530
Colorado	MN00064	North Dakota	R-036
Connecticut	PH-0256	Ohio-DW	41244
Florida	E87605	Ohio-VAP (170	CL101
Georgia	959	Ohio-VAP (180	CL110
Hawaii	MN00064	Oklahoma	9507
Idaho	MN00064	Oregon- rimary	MN300001
Illinois	200011	Oregon-Second	MN200001
Indiana	C-MN-01	Pennsylvania	68-00563
Iowa	368	Puerto Rico	MN00064
Kansas	E-10167	South Carolina	74003
Kentucky-DW	90062	Tennessee	TN02818
Kentucky-WW	90062	Texas	T104704192
Louisiana-DEQ	AI-84596	Utah	MN00064
Louisiana-DW	MN00064	Vermont	VT-027053137
Maine	MN00064	Virginia	460163
Maryland	322	Washington	C486
Michigan	9909	West Virginia-D	382
Minnesota	027-053-137	West Virginia-D	9952C
Minnesota-Ag	via MN 027-053	Wisconsin	999407970
Minnesota-Petr	1240	Wyoming-UST	via A2LA 2926.

REPORT OF LABORATORY ANALYSIS

Report No.....10616033

Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444
www.pacelabs.com

Appendix A

Sample Management

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Pace Analytical	Report To: Pace Analytical Subout Team	Attention: Don Hanson
Address: 12065 Lebanon Rd	Copy To:	Company Name: Oregon Dept. of Env. Quality
Juliet, TN 37122		Address:
Email: MTJLSuboutTeam@pacelabs.com	Purchase Order #: L1512340	Pace Quote:
Phone: (615) 773-9756 Fax: (615) 758-5859	Project Name: JH Baxter Removal Investigation	Pace Project Manager: Kongmeng Vang
Requested Due Date: 19-Jul	Project #: 72-18-32	Pace Profile #: 38076

Regulatory Agency
State / Location
Portland, OR

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Dioxins and Furans 1613	Residual Chlorine (Y/N)
1	S-00[illegible]	SL				30-Jun	16:15		1	1								X	DEQ COC 001
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

WO# : 10616033

10616033

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Angela Ford	7-Jul	13:33	PACE	07/08/22	8:50	2 3 / Y / Y / Y
Pace Analytical Batch: WG1891393							
Pace Analytical SDGs: L1512340							
Location: Minneapolis, MN 55414							

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:					
SIGNATURE of SAMPLER:	DATE Signed:				

DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Sample Condition Upon Receipt | **Client Name:** P.A | **Project #:**

WO#: 10616033

PM: KV **Due Date: 07/29/22**

CLIENT: ESC_TN

Courier: ☑Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial

See Exceptions ☐ENV-FRM-MIN4-0142

Tracking Number: 5882 7592 6296

Custody Seal on Cooler/Box Present? ☑Yes ☐No **Seals Intact?** ☑Yes ☐No **Biological Tissue Frozen?** ☐Yes ☐No ☑N/A

Packing Material: ☐Bubble Wrap ☑Bubble Bags ☐None ☑Other: Ziplock **Temp Blank?** ☑Yes ☐No

Thermometer: ☐T1(0461) ☐T2(1336) ☐T3(0459) ☑T4(0254) ☐T5(0489) ☐T6(0235) ☐T7 (0042) ☐01339252/1710 ☐122639816 ☐140792808

Type of Ice: ☑Wet ☐Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☑No **Were All Container Temps Taken?** ☐Yes ☐No ☑N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 2.9 °C

Correction Factor: True **Cooler Temp Corrected w/temp blank:** 2.9 °C

Average Corrected Temp (no temp blank only): ____ °C ☐See Exceptions ENV-FRM-MIN4-0142 ☐1 Container

USDA Regulated Soil: (☑N/A, water sample/Other: Field)

Date/Initials of Person Examining Contents: KN 07/09/22

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Location (check one): ☐ Duluth ☑ Minneapolis ☐ Virginia

				COMMENTS:
Chain of Custody Present and Filled Out?	☑Yes	☐No		1.
Chain of Custody Relinquished?	☑Yes	☐No		2.
Sampler Name and/or Signature on COC?	☑Yes	☐No	☐N/A	3.
Samples Arrived within Hold Time?	☑Yes	☐No		4. If Fecal: ☐<8 hrs ☐>8hr, <24 hrs, ☐>24 hrs
Short Hold Time Analysis (<72 hr)?	☐Yes	☑No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other
Rush Turn Around Time Requested?	☐Yes	☑No		6.
Sufficient Volume?	☑Yes	☐No		7.
Correct Containers Used?	☑Yes	☐No		8.
-Pace Containers Used?	☐Yes	☑No		
Containers Intact?	☑Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☑N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐Water ☐Soil ☐Oil ☑Other- Solid	☑Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐ **ENV-FRM-MIN4-0142**
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☑N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐Yes	☐No	☑N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐Yes	☐No	☑N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐ **ENV-FRM-MIN4-0142**
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐Yes	☐No	☑N/A	
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☑N/A	13. **See Exception** ☐ **ENV-FRM-MIN4-0140**
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☑N/A	
Trip Blank Present?	☐Yes	☐No	☑N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☑N/A	Pace Trip Blank Lot # (if purchased):

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: ____ Date/Time: ____

Comments/Resolution: ____

Project Manager Review: [signature] **Date:** 7/8/22

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: ____

USDA REGULATED SOIL CHECKLIST

To Be Completed by SR Staff:

WO: 10616033 Date: 7/8/20 Initials: KV

Sample Origin (circle one): ~~DOMESTIC~~ KV 7/8/20 ~~QUARANTINED~~ FOREIGN

(Note: soil samples from Hawaii, Guam, Puerto Rico and the US Virgin Islands are considered to be of a Foreign Source)

If Domestic, circle State of Origin: AL AR CA FL GA LA MS NC NM NY OK (OR) SC TN TX VA

(Includes: IFA, SOD, Golden Nematode, Karnal Bunt and Witchweed) List County: Multnomah

(USDA Permit/Compliance Agreement authorizes movement of samples from these domestic regulated zones)

If Quarantined, circle State of Origin: FL ID TX CA List County: _____

(Includes Fruit Fly, Giant African Snail and Pale Cyst Nematode)

(Movement is not authorized for Pale Cyst Nematode [ID or Giant African Snail [FL], remaining quarantines require additional paperwork)

If Foreign, list Country of Origin: _____

(Movement from some Canadian Providences is not allowed. Refer to CS-232 Regulated Soil Flow Chart)

REQUIREMENT	ACTION	COMPLETED
PPQ-530 Paperwork must be included for any samples from counties with a Fruit Fly Quarantine in TX. Refer to **MN-S063** through **MN-S065**	Scan PPQ-530 to the corresponding Project folder on the x drive. If PPQ-530 is not present, contact the Waste Coordinator and do not continue processing samples.	YES NO (N/A)
Samples from ID may not be moved from the quarantined region. Refer to **MN-S055**	If samples originated in a quarantined zone, contact the Waste Coordinator and do not continue processing samples.	YES NO (N/A)
Samples from Giant African Snail Quarantine in FL may not be moved from the quarantined region. Refer to **MN-S068**	If samples originated in a quarantined zone, contact the Waste Coordinator and do not continue processing samples.	YES NO (N/A)

REQUIREMENT	ACTION	COMPLETED
"Special Handling" stickers are to be placed on all samples.	Did "special handling" stickers get placed on all sample containers?	YES (NO)
Samples must be segregated and stored in designated bins, shelves and coolers.	Were samples placed in a designated cooler, containers and shelves?	YES (NO)
Samples must be double contained to prevent accidental release.	Were there any signs of breakage or leakage (check for broken glass and/or loose soil in the cooler)? *If NO, ice and melt water can be disposed of by normal process (down the drain).*	YES (NO)
	If **YES**, were ice and melt water separated from the cooler and disposed of properly?	YES NO (N/A)
	Any broken glass and/or loose soil are to be bagged and placed in a USDA Regulated satellite container or active drum (see Waste Coordinator). **Ice and melt water should be baked at a temperature range of 121-154°F for 2 hours and then cooled before going down the drain.**	
Equipment and supplies that have come into contact samples must be decontaminated.	Was the cooler(s) and/or countertop(s) decontaminated using either a fresh 10% bleach solution or 70% ethanol? *(Gloves and other lab supplies will be bagged and placed in the USDA Regulated satellite container or active drum).*	YES (NO)

Comments: _____

To Be Completed by PM and/or PC:

Sample Analysis to be conducted (circle all that apply): MN Subcontract Lab

Name of Subcontract Lab (s): _____

REQUIREMENT	ACTION	COMPLETED
Permission to ship untreated soil must be on file prior to shipping to any subcontract lab, including IR Pace Labs.	Go to: J:\SHARE\PRJ_MGR\10_Client Services Department Documents\Regulated Soils Permits – if permission to ship letter is not there, contact the Waste Coordinator.	YES NO N/A
Shipment must include a valid copy of the receiving lab's permit as well as permission to ship letter.	Is a copy of all needed paperwork included with the COC? Do **NOT** ship samples until all necessary paperwork is compiled.	YES NO N/A

Comments: _____

Project Manager Signature: _____ Date: 7/8/22

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise (EDL)

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Isotope ratio out of specification

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDEInterference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = SeeDiscussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444
www.pacelabs.com

Appendix B

Sample Analysis Summary

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - Pace Analytical National

Client's Sample ID	TS-001-0622		
Lab Sample ID	10616033001		
Filename	L220721A_07		
Injected By	MS4		
Total Amount Extracted	10.4 g	Matrix	Solid
% Moisture	8.9	Dilution	NA
Dry Weight Extracted	9.46 g	Collected	06/30/2022 16:15
ICAL ID	L220718	Received	07/08/2022 08:50
CCal Filename(s)	L220721A_03	Extracted	07/15/2022 14:30
Method Blank ID	BLANK-100015	Analyzed	07/21/2022 11:50

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.11		2,3,7,8-TCDF-13C	2.00	68
Total TCDF	0.34	-----	0.11	J	2,3,7,8-TCDD-13C	2.00	64
					1,2,3,7,8-PeCDF-13C	2.00	80
2,3,7,8-TCDD	ND	-----	0.087		2,3,4,7,8-PeCDF-13C	2.00	83
Total TCDD	0.48	-----	0.087	J	1,2,3,7,8-PeCDD-13C	2.00	88
					1,2,3,4,7,8-HxCDF-13C	2.00	83
1,2,3,7,8-PeCDF	ND	-----	0.15		1,2,3,6,7,8-HxCDF-13C	2.00	79
2,3,4,7,8-PeCDF	ND	-----	0.10		2,3,4,6,7,8-HxCDF-13C	2.00	73
Total PeCDF	0.26	-----	0.10	J	1,2,3,7,8,9-HxCDF-13C	2.00	74
					1,2,3,4,7,8-HxCDD-13C	2.00	72
1,2,3,7,8-PeCDD	ND	-----	0.12		1,2,3,6,7,8-HxCDD-13C	2.00	75
Total PeCDD	ND	-----	0.12		1,2,3,4,6,7,8-HpCDF-13C	2.00	59
					1,2,3,4,7,8,9-HpCDF-13C	2.00	55
1,2,3,4,7,8-HxCDF	ND	-----	0.20		1,2,3,4,6,7,8-HpCDD-13C	2.00	65
1,2,3,6,7,8-HxCDF	ND	-----	0.20		OCDD-13C	4.00	44
2,3,4,6,7,8-HxCDF	ND	-----	0.14				
1,2,3,7,8,9-HxCDF	0.30	-----	0.18	BJ	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.30	-----	0.14	BJ	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.26		2,3,7,8-TCDD-37Cl4	0.20	81
1,2,3,6,7,8-HxCDD	ND	-----	0.20				
1,2,3,7,8,9-HxCDD	ND	-----	0.25				
Total HxCDD	ND	-----	0.20				
1,2,3,4,6,7,8-HpCDF	-----	0.21	0.13	IJ	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.12		Equivalence: 0.042 ng/Kg		
Total HpCDF	0.40	-----	0.12	J	(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	0.86	-----	0.11	BJ			
Total HpCDD	0.86	-----	0.11	BJ			
OCDF	0.57	-----	0.40	J			
OCDD	-----	4.6	0.56	IJ			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
B = Less than 10x higher than method blank level
I = Isotope ratio out of specification

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Blank Analysis Results

Lab Sample Name	DFBLKPX		
Lab Sample ID	BLANK-100015	Matrix	Solid
Filename	F220719B_06	Dilution	NA
Total Amount Extracted	10.7 g	Extracted	07/15/2022 14:30
ICAL ID	F220529	Analyzed	07/19/2022 18:08
CCal Filename(s)	F220719B_01	Injected By	SMT

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.048		2,3,7,8-TCDF-13C	2.00	65
Total TCDF	ND	-----	0.048		2,3,7,8-TCDD-13C	2.00	57
					1,2,3,7,8-PeCDF-13C	2.00	67
2,3,7,8-TCDD	ND	-----	0.11		2,3,4,7,8-PeCDF-13C	2.00	68
Total TCDD	ND	-----	0.11		1,2,3,7,8-PeCDD-13C	2.00	66
					1,2,3,4,7,8-HxCDF-13C	2.00	78
1,2,3,7,8-PeCDF	ND	-----	0.063		1,2,3,6,7,8-HxCDF-13C	2.00	73
2,3,4,7,8-PeCDF	ND	-----	0.041		2,3,4,6,7,8-HxCDF-13C	2.00	73
Total PeCDF	ND	-----	0.041		1,2,3,7,8,9-HxCDF-13C	2.00	69
					1,2,3,4,7,8-HxCDD-13C	2.00	65
1,2,3,7,8-PeCDD	ND	-----	0.051		1,2,3,6,7,8-HxCDD-13C	2.00	74
Total PeCDD	ND	-----	0.051		1,2,3,4,6,7,8-HpCDF-13C	2.00	59
					1,2,3,4,7,8,9-HpCDF-13C	2.00	53
1,2,3,4,7,8-HxCDF	ND	-----	0.050		1,2,3,4,6,7,8-HpCDD-13C	2.00	55
1,2,3,6,7,8-HxCDF	ND	-----	0.053		OCDD-13C	4.00	46
2,3,4,6,7,8-HxCDF	ND	-----	0.045				
1,2,3,7,8,9-HxCDF	0.12	-----	0.061	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	0.12	-----	0.045	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	0.16	-----	0.083	J	2,3,7,8-TCDD-37Cl4	0.20	69
1,2,3,6,7,8-HxCDD	ND	-----	0.079				
1,2,3,7,8,9-HxCDD	ND	-----	0.075				
Total HxCDD	0.16	-----	0.075	J			
1,2,3,4,6,7,8-HpCDF	ND	-----	0.049		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.079		Equivalence: 0.030 ng/Kg		
Total HpCDF	ND	-----	0.049		(Lower-bound - Using 2005 WHO Factors)		
1,2,3,4,6,7,8-HpCDD	0.18	-----	0.085	J			
Total HpCDD	0.18	-----	0.085	J			
OCDF	ND	-----	0.17				
OCDD	0.64	-----	0.19	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.
J = Estimated value

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCS-100016		
Filename	F220719B_02	Matrix	Solid
Total Amount Extracted	10.8 g	Dilution	NA
ICAL ID	F220529	Extracted	07/15/2022 14:30
CCal Filename	F220719B_01	Analyzed	07/19/2022 15:06
Method Blank ID	BLANK-100015	Injected By	SMT

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDF	10	11	7.5	15.8	110
2,3,7,8-TCDD	10	11	6.7	15.8	114
1,2,3,7,8-PeCDF	50	50	40.0	67.0	100
2,3,4,7,8-PeCDF	50	49	34.0	80.0	98
1,2,3,7,8-PeCDD	50	50	35.0	71.0	101
1,2,3,4,7,8-HxCDF	50	51	36.0	67.0	101
1,2,3,6,7,8-HxCDF	50	52	42.0	65.0	103
2,3,4,6,7,8-HxCDF	50	52	35.0	78.0	104
1,2,3,7,8,9-HxCDF	50	51	39.0	65.0	102
1,2,3,4,7,8-HxCDD	50	54	35.0	82.0	109
1,2,3,6,7,8-HxCDD	50	52	38.0	67.0	104
1,2,3,7,8,9-HxCDD	50	50	32.0	81.0	99
1,2,3,4,6,7,8-HpCDF	50	54	41.0	61.0	108
1,2,3,4,7,8,9-HpCDF	50	56	39.0	69.0	112
1,2,3,4,6,7,8-HpCDD	50	51	35.0	70.0	102
OCDF	100	120	63.0	170.0	118
OCDD	100	120	78.0	144.0	120
2,3,7,8-TCDD-37Cl4	10	12	3.1	19.1	119
2,3,7,8-TCDF-13C	100	110	22.0	152.0	108
2,3,7,8-TCDD-13C	100	97	20.0	175.0	97
1,2,3,7,8-PeCDF-13C	100	110	21.0	192.0	106
2,3,4,7,8-PeCDF-13C	100	100	13.0	328.0	102
1,2,3,7,8-PeCDD-13C	100	100	21.0	227.0	102
1,2,3,4,7,8-HxCDF-13C	100	130	19.0	202.0	128
1,2,3,6,7,8-HxCDF-13C	100	110	21.0	159.0	114
2,3,4,6,7,8-HxCDF-13C	100	120	22.0	176.0	115
1,2,3,7,8,9-HxCDF-13C	100	110	17.0	205.0	109
1,2,3,4,7,8-HxCDD-13C	100	110	21.0	193.0	114
1,2,3,6,7,8-HxCDD-13C	100	120	25.0	163.0	123
1,2,3,4,6,7,8-HpCDF-13C	100	94	21.0	158.0	94
1,2,3,4,7,8,9-HpCDF-13C	100	82	20.0	186.0	82
1,2,3,4,6,7,8-HpCDD-13C	100	87	26.0	166.0	87
OCDD-13C	200	150	26.0	397.0	75

Cs = Concentration Spiked (ng/mL)
Cr = Concentration Recovered (ng/mL)
Rec. = Recovery (Expressed as Percent)
Control Limit Reference: Method 1613, Table 6, 10/94 Revision
R = Recovery outside of control limits
Nn = Value obtained from additional analysis
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Data Validation Report

JH Baxter: Source Material Sampling

December 13, 2024

Prepared by: Mitchell Fargher

GSI Water Solutions, Inc.

GSI Water Solutions, Inc.

650 NE Holladay Street, Suite 900, Portland, OR 97232

Introduction

The data in this abbreviated validation and usability report (U.S. Environmental Protection Agency [EPA] Stage 2A) were reviewed using the guidance presented in the following:

- Project Quality Assurance Project Plan (where required)
- Method Specific Control Limits
- Laboratory Standard Operation Procedures and Control Limits
- EPA's *National Functional Guidelines for Organic Superfund Methods Data Review*, EPA 540-R-20-005, November 2020
- EPA's *National Functional Guidelines for Inorganic Superfund Methods Data Review*, EPA 542-R-20-006, November 2020
- EPA's *National Functional Guidelines for High Resolution Superfund Methods Data Review*, EPA 542-R-20-007, November 2020

Data that are not qualified meet the data quality objectives specified in the referenced documents and can be used for decision-making purposes. Data qualified as estimated (J/UJ) may be used for decision-making purposes but should be used in conjunction with the reason codes assigned to the qualifier for further context. Data that are rejected (R) should not be used for any decision-making purposes due to significant deviations in quality control requirements.

Sample Delivery Group (SDG) Summary

SDG	Event	Analytical Laboratory	Sample Receipt Date	Lab Report Date
L1643943	Source Material Sampling	Pace Analytical	08/09/2023	09/01/2023
L1511257	Source Material Sampling	Pace Analytical	07/02/2022	07/20/2022
L1512340	Source Material Sampling	Pace Analytical	07/02/2022	07/29/2022

Analytical Methods and Technical Holding Times

Analytical Method	Sample Matrix	Technical Holding Time (4°C)
EPA 1613B	Solid	1 Year
EPA 6020B	Solid	6 Months
EPA 7471B	Solid	28 Days
EPA 8081B	Solid	14 Days Extraction 40 Days Analysis
EPA 8082A	Solid	14 Days
EPA 8151A	Solid	14 Days Extraction 40 Days Analysis
EPA 8270E	Solid	14 Days Extraction 40 Days Analysis
EPA 8270E-SIM	Solid	14 Days Extraction 40 Days Analysis
NWTPH-Dx	Solid	14 Days
NWPTH-Gx	Solid	14 Days
SM 2540 G	Solid	7 Days

Sample Delivery Group L1643943

SDG L1643943 was composed of a single Pace Analytical report. The section below contains qualifications related to the entirety of the package.

Sample Identification

The following six field samples were included in this SDG:

Field Sample ID	Lab Sample ID	Sample Date	Matrix	Sample Type
LFP_SM-01	L1643943-01	08/01/23 11:10	Solid	Primary
LFP_SM-02	L1643943-02	08/01/23 11:15	Solid	Primary
REX_SM-01	L1643943-03	08/01/23 12:00	Solid	Primary
REX_SM-02	L1643943-04	08/01/23 12:05	Solid	Primary
DSG_SM-02	L1643943-05	08/01/23 13:05	Solid	Primary
DSG_SM-03	L1643943-06	08/01/23 13:10	Solid	Primary

Sample Management

Sample Receipt

All sample receipt documentation was complete and correct. Samples were shipped to the laboratory by the client. Custody seals were not used. The laboratory stated samples were received intact, and the bottle labels agreed with the COC. No other anomalies were noted.

Holding Time/Preservation

The samples were analyzed within the technical holding times and were properly preserved.

Laboratory Quality Assurance/Quality Control (QA/QC)

Initial and Continuing Calibration Verification (ICV/CCV)

Not independently verified during abbreviated Stage 2A validation with access to only the Level 2 lab report. The lab did not flag any sample results having an associated ICV/CCV outside of specified control limits.

Method Blanks

Method blanks were performed per lab batch and no analytes were detected or did not affect qualification of samples except for:

Batch	Method	Analyte	Result
35991	EPA 1613B	1,2,3,7,8,9-HxCDF	0.1 J+
35991	EPA 1613B	Total HxCDF	0.1 J
35991	EPA 1613B	1,2,3,4,7,8-HxCDD	0.15 J+
35991	EPA 1613B	Total HxCDD	0.15 J
35991	EPA 1613B	OCDD	1.1 J+

See Overall Assessment for qualified results.

Reporting Limits

Reporting limits were not verified against project-specific requirements.

Sample Dilutions

Reported sample dilutions were reviewed and detected analytes were reported from a sample analysis with the lowest dilution.

Surrogate Spikes/Labeled Standards

Surrogates or labeled standards were added to field and QC samples as required per the method where applicable. Sample surrogate percent recoveries were within QC acceptance limits, or a greater ratio of surrogates were within QC acceptance limits (example: 2 out of 3 surrogates).

Matrix Spike (MS)/Matrix Spike Duplicates (MSD)

The MS and MSD analyses performed on SDG samples met all QC acceptance criteria for percent recovery and relative percent difference (RPD) where required per the method.

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

An LCS was analyzed for each batch and all recoveries were within QC acceptance criteria where required per the method.

Laboratory Duplicates

Laboratory duplicate analyses were analyzed where required and all recoveries were within QC acceptance criteria where required per the method.

Target Compound Identification

All target compound identifications were within validation criteria for relative retention times, characteristic ions, and relative ion abundances where applicable except for:

Field Sample ID	Method	Analyte	Result	Qualifier
LFP_SM-01	EPA 1613B	1,2,3,4,7,8-HxCDD	0.31	J+
LFP_SM-01	EPA 1613B	1,2,3,4,6,7,8-HpCDF	1	J+
LFP_SM-01	EPA 1613B	1,2,3,4,6,7,8-HpCDD	2.8	J+
LFP_SM-01	EPA 1613B	OCDF	2.9	J+
LFP_SM-02	EPA 1613B	2,3,7,8-TCDF	0.22	J+
LFP_SM-02	EPA 1613B	2,3,7,8-TCDD	0.14	J+
LFP_SM-02	EPA 1613B	1,2,3,7,8-PeCDF	0.34	J+
REX_SM-01	EPA 1613B	1,2,3,4,7,8-HxCDD	0.18	J+
REX_SM-01	EPA 1613B	1,2,3,4,6,7,8-HpCDD	0.44	J+
REX_SM-02	EPA 1613B	1,2,3,4,7,8-HxCDD	0.16	J+
REX_SM-02	EPA 1613B	1,2,3,4,6,7,8-HpCDF	0.35	J+
DSG_SM-02	EPA 1613B	2,3,7,8-TCDD	0.24	J+

Tentatively Identified Compounds (TIC)

No results were reported as TICs as a part of this SDG.

Field QA/QC

Field Duplicates

No field duplicate was collected and analyzed as part of this SDG.

Equipment Blanks

No equipment blanks were collected and analyzed as part of this SDG.

Trip Blanks

No trip blanks were collected and analyzed as part of this SDG.

SDG Overall Assessment

The data found in this report complied with the data quality objectives as specified. The data, as qualified, are acceptable to use for decision-making purposes. No results were rejected. Data qualifiers are summarized in the following table (results qualified as U due to being non-detect were not included in the table below):

Field Sample ID	Analyte	Result	Qualifier	Validation Code
LFP_SM-01	1,2,3,4,7,8-HxCDD	0.31	J+	EMC
LFP_SM-01	1,2,3,4,6,7,8-HpCDF	1	J+	EMC
LFP_SM-01	1,2,3,4,6,7,8-HpCDD	2.8	J+	EMC
LFP_SM-01	OCDF	2.9	J+	EMC
LFP_SM-01	Total TCDD	0.18	J	BRL
LFP_SM-01	Total PeCDF	0.53	J	BRL
LFP_SM-01	Total HxCDD	0.47	U	MBK
LFP_SM-01	Total HpCDD	2.8	J	BRL
LFP_SM-02	2,3,7,8-TCDF	0.22	J+	EMC
LFP_SM-02	2,3,7,8-TCDD	0.14	J+	EMC
LFP_SM-02	1,2,3,7,8-PeCDF	0.34	J+	EMC
LFP_SM-02	2,3,4,7,8-PeCDF	1.0	J	BRL
LFP_SM-02	1,2,3,7,8-PeCDD	0.71	J	BRL
LFP_SM-02	1,2,3,4,7,8-HxCDF	2.5	J	BRL
LFP_SM-02	1,2,3,6,7,8-HxCDF	2.1	J	BRL
LFP_SM-02	2,3,4,6,7,8-HxCDF	3.0	J	BRL
LFP_SM-02	1,2,3,7,8,9-HxCDF	0.97	U	MBK
LFP_SM-02	1,2,3,4,7,8-HxCDD	1.9	U	MBK
LFP_SM-02	1,2,3,7,8,9-HxCDD	3.5	J	BRL
LFP_SM-02	1,2,3,4,7,8,9-HpCDF	3.8	J	BRL
LFP_SM-02	Total PeCDD	2.9	J	BRL
REX_SM-01	1,2,3,4,7,8-HxCDD	0.18	J+	EMC
REX_SM-01	1,2,3,4,6,7,8-HpCDD	0.44	J+	EMC
REX_SM-01	OCDD	2.5	U	MBK
REX_SM-01	Total HpCDD	0.51	J	BRL
REX_SM-02	1,2,3,7,8,9-HxCDF	0.17	U	MBK
REX_SM-02	1,2,3,4,7,8-HxCDD	0.16	J+	EMC
REX_SM-02	1,2,3,4,6,7,8-HpCDF	0.35	J+	EMC
REX_SM-02	1,2,3,4,6,7,8-HpCDD	3.2	J	BRL

REX_SM-02	OCDF	2.2	J	BRL
REX_SM-02	Total TCDF	0.16	J	BRL
REX_SM-02	Total HxCDF	0.17	U	MBK
REX_SM-02	Total HpCDF	1.3	J	BRL
DSG_SM-02	2,3,7,8-TCDD	0.24	J+	EMC
DSG_SM-02	1,2,3,7,8-PeCDF	0.37	J	BRL
DSG_SM-02	2,3,4,7,8-PeCDF	1.0	J	BRL
DSG_SM-02	1,2,3,7,8-PeCDD	0.44	J	BRL
DSG_SM-02	1,2,3,4,7,8-HxCDF	1.1	J	BRL
DSG_SM-02	1,2,3,6,7,8-HxCDF	1.2	J	BRL
DSG_SM-02	2,3,4,6,7,8-HxCDF	2.4	J	BRL
DSG_SM-02	1,2,3,7,8,9-HxCDF	0.89	U	MBK
DSG_SM-02	1,2,3,4,7,8-HxCDD	1.2	U	MBK
DSG_SM-02	1,2,3,7,8,9-HxCDD	2.6	J	BRL
DSG_SM-02	1,2,3,4,7,8,9-HpCDF	1.7	J	BRL
DSG_SM-02	Total TCDF	1.0	J	BRL
DSG_SM-02	Total PeCDD	4.8	J	BRL
DSG_SM-03	1,2,3,6,7,8-HxCDD	0.34	J	BRL
DSG_SM-03	1,2,3,4,6,7,8-HpCDF	1.7	J	BRL
DSG_SM-03	OCDF	5.1	J	BRL
DSG_SM-03	Total PeCDF	0.55	J	BRL
DSG_SM-03	Total HxCDF	0.96	U	MBK
DSG_SM-03	Total HxCDD	2.2	U	MBK

Sample Delivery Group L1511257

SDG L1511257 was composed of a single Pace Analytical report. The section below contains qualifications related to the entirety of the package.

Sample Identification

The following one field sample was included in this SDG:

Field Sample ID	Lab Sample ID	Sample Date	Matrix	Sample Type
TS-001-0622	L1511257-01	06/30/2022	Solid	Primary

Sample Management

Sample Receipt

All sample receipt documentation was complete and correct. Samples were shipped to the laboratory by the client. Custody seals were not used. The laboratory stated samples were received intact, and the bottle labels agreed with the COC. No other anomalies were noted.

Holding Time/Preservation

The samples were analyzed within the technical holding times and were properly preserved.

Laboratory Quality Assurance/Quality Control (QA/QC)

Initial and Continuing Calibration Verification (ICV/CCV)

Not independently verified during abbreviated Stage 2A validation with access to only the Level 2 lab report. The lab did not flag any sample results having an associated ICV/CCV outside of specified control limits.

Method Blanks

Method blanks were performed per lab batch and no analytes were detected or did not affect qualification of samples.

Reporting Limits

Reporting limits were not verified against project-specific requirements.

Sample Dilutions

Reported sample dilutions were reviewed and detected analytes were reported from a sample analysis with the lowest dilution.

Surrogate Spikes/Labeled Standards

Surrogates or labeled standards were added to field and QC samples as required per the method where applicable. Sample surrogate percent recoveries were within QC acceptance limits, or a greater ratio of surrogates were within QC acceptance limits (example: 2 out of 3 surrogates).

Matrix Spike (MS)/Matrix Spike Duplicates (MSD)

The MS and MSD analyses performed on SDG samples met all QC acceptance criteria for percent recovery and relative percent difference (RPD) where required per the method.

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

An LCS was analyzed for each batch and all recoveries were within QC acceptance criteria where required per the method except for:

Field Sample ID	Method	Analyte	Reason	Qualifier
TS-001-0622	EPA 8081B	Endrin	LCS < LCL	UJ

Laboratory Duplicates

Laboratory duplicate analyses were analyzed where required and all recoveries were within QC acceptance criteria where required per the method.

Target Compound Identification

All target compound identifications were within validation criteria for relative retention times, characteristic ions, and relative ion abundances where applicable.

Tentatively Identified Compounds (TIC)

No results were reported as TICs as a part of this SDG.

Field QA/QC

Field Duplicates

No field duplicate was collected and analyzed as part of this SDG.

Equipment Blanks

No equipment blanks were collected and analyzed as part of this SDG.

Trip Blanks

No trip blanks were collected and analyzed as part of this SDG.

SDG Overall Assessment

The data found in this report complied with the data quality objectives as specified. The data, as qualified, are acceptable to use for decision-making purposes. No results were rejected. Data qualifiers are summarized in the following table (results qualified as U due to being non-detect were not included in the table below):

Field Sample ID	Analyte	Result	Qualifier	Validation Code
TS-001-0622	Antimony	0.373	J	BRL
TS-001-0622	Beryllium	0.82	J	BRL
TS-001-0622	Cadmium	0.142	J	BRL
TS-001-0622	Selenium	0.53	J	BRL
TS-001-0622	Sodium	138	J	BRL
TS-001-0622	Thallium	0.144	J	BRL
TS-001-0622	Endrin	0.00388	UJ	LCS
TS-001-0622	Diesel Range Organics	3.58	J	BRL
TS-001-0622	Residual Range Organics	5.07	J	BRL
TS-001-0622	Gasoline Range Organics	1.29	J	BRL

Sample Delivery Group L1512340

SDG L1512340 was composed of a single Pace Analytical report. The section below contains qualifications related to the entirety of the package.

Sample Identification

The following one field sample was included in this SDG:

Field Sample ID	Lab Sample ID	Sample Date	Matrix	Sample Type
TS-001-0622	L1511257-01	06/30/2022	Solid	Primary

Sample Management

Sample Receipt

All sample receipt documentation was complete and correct. Samples were shipped to the laboratory by the client. Custody seals were not used. The laboratory stated samples were received intact, and the bottle labels agreed with the COC. No other anomalies were noted.

Holding Time/Preservation

The samples were analyzed within the technical holding times and were properly preserved.

Laboratory Quality Assurance/Quality Control (QA/QC)

Initial and Continuing Calibration Verification (ICV/CCV)

Not independently verified during abbreviated Stage 2A validation with access to only the Level 2 lab report. The lab did not flag any sample results having an associated ICV/CCV outside of specified control limits.

Method Blanks

Method blanks were performed per lab batch and no analytes were detected or did not affect qualification of samples except for:

Blank ID (Batch not listed)	Method	Analyte	Result
BLANK-100015	EPA 1613B	1,2,3,4,6,7,8-HpCDD	0.18 J
BLANK-100015	EPA 1613B	1,2,3,7,8,9-HxCDF	0.12 J
BLANK-100015	EPA 1613B	OCDD	0.64 J
BLANK-100015	EPA 1613B	Total HpCDD	0.18 J
BLANK-100015	EPA 1613B	Total HxCDF	0.12 J

See Overall Assessment for qualified results.

Reporting Limits

Reporting limits were not verified against project-specific requirements.

Sample Dilutions

Reported sample dilutions were reviewed and detected analytes were reported from a sample analysis with the lowest dilution.

Surrogate Spikes/Labeled Standards

Surrogates or labeled standards were added to field and QC samples as required per the method where applicable. Sample surrogate percent recoveries were within QC acceptance limits, or a greater ratio of surrogates were within QC acceptance limits (example: 2 out of 3 surrogates).

Matrix Spike (MS)/Matrix Spike Duplicates (MSD)

The MS and MSD analyses performed on SDG samples met all QC acceptance criteria for percent recovery and relative percent difference (RPD) where required per the method.

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

An LCS was analyzed for each batch and all recoveries were within QC acceptance criteria where required per the method.

Laboratory Duplicates

Laboratory duplicate analyses were analyzed where required and all recoveries were within QC acceptance criteria where required per the method.

Target Compound Identification

All target compound identifications were within validation criteria for relative retention times, characteristic ions, and relative ion abundances where applicable except for:

Field Sample ID	Method	Analyte	Result	Qualifier
TS-001-0622	EPA 1613B	1,2,3,4,6,7,8-HpCDF	0.21	J+

Tentatively Identified Compounds (TIC)

No results were reported as TICs as a part of this SDG.

Field QA/QC

Field Duplicates

No field duplicate was collected and analyzed as part of this SDG.

Equipment Blanks

No equipment blanks were collected and analyzed as part of this SDG.

Trip Blanks

No trip blanks were collected and analyzed as part of this SDG.

SDG Overall Assessment

The data found in this report complied with the data quality objectives as specified. The data, as qualified, are acceptable to use for decision-making purposes. No results were rejected. Data qualifiers are summarized in the following table (results qualified as U due to being non-detect were not included in the table below):

Field Sample ID	Analyte	Result	Qualifier	Validation Code
TS-001-0622	1,2,3,4,6,7,8-HpCDD	0.86	U	MBK
TS-001-0622	1,2,3,4,6,7,8-HpCDF	0.21	J+	EMC
TS-001-0622	1,2,3,7,8,9-HxCDF	0.3	U	MBK
TS-001-0622	OCDD	4.6	U	MBK
TS-001-0622	OCDF	0.57	J	BRL
TS-001-0622	Total HpCDD	0.86	U	MBK
TS-001-0622	Total HpCDF	0.4	J	BRL
TS-001-0622	Total HxCDF	0.3	U	MBK
TS-001-0622	Total PeCDF	0.26	J	BRL
TS-001-0622	Total TCDD	0.48	J	BRL
TS-001-0622	Total TCDF	0.34	J	BRL

Overall Assessment

The data found in this report complied with the data quality objectives as specified. The data, as qualified, are acceptable to use for decision-making purposes. In total, 317 results were reviewed from three SDGs. The overall completeness for this event was 100 percent, as no results were rejected.

Definitions of Qualifiers

The following table lists each potential validation qualifier and its associated definition.

Qualifier	Definition
U	The analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.
J	The reported result is an estimated value.
J+	The reported result is an estimated value, but the result may be biased high.
J-	The reported result is an estimated value, but the result may be biased low.
UJ	The analyte was not detected and is reported as less than the LOD or as defined by the client. However, the associated numerical value is approximate.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.
NJ	The analyte has been “tentatively identified” or “presumptively” as present, and the associated numerical value is the estimated concentration in the sample.
R	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Exclusion of the data is recommended.

Definitions of Validation Codes

The following table lists possible validation codes and their associated definitions.

Code	Definition
BRL	Below reporting limit
HTE	Holding time exceeded
INT	Interference
FDP	Field duplicate RPD outside of control limits
LCS	Laboratory control sample/Laboratory control sample duplicate outside of quality control limits
LDP	Laboratory duplicate sample analysis outside of quality control limits
MSD	Matrix spike/Matrix spike duplicate outside of quality control limits
PRF	Professional judgment
SUR	Surrogate/labeled standard outside of quality control limits
MBK	Method blank contamination
TIC	Tentatively identified compound
CCV	Continuing calibration verification analysis outside of quality control limits
FBK	Field blank contamination (Rinse Blank, Trip Blank, etc...)
SPV	Sample preservation outside of quality control limits

Blank Contamination Actions

The following table lists the standard guidelines (with high-resolution noted in parentheses) for applying qualifiers due to blank contamination.

Blank Result	Sample Result	Action
< RL	< RL	Report at RL & qualify U
	> RL, < 5X (2X) Blank Result	Report at sample result & qualify U
	> RL, < 10X (5X) Blank Result	Report at sample result & qualify J+
	> RL, > 10X (5X) Blank Result	No qualification
> RL	< RL	Report at RL & qualify U
	> RL, < 5X (2X) Blank Result	Report at sample result & qualify U
	> RL, < 10X (5X) Blank Result	Report at sample result & qualify J+
	> RL, > 10X (5X) Blank Result	No qualification