

# Attachment C

## Analytical Report: Apex Laboratories



AMENDED REPORT

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Monday, July 13, 2020
Josh Bale
GSI Water Solutions
55 SW Yamhill St, Ste 300
Portland, OR 97209

RE: A0E0214 - JH Baxter-Eugene ISM - 302

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A0E0214, which was received by the laboratory on 5/8/2020 at 7:35:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Table with 4 columns: Cooler #1, 2.6 degC, Cooler #2, 4.2 degC; Cooler #3, 3.2 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report. All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

Handwritten signature of Lisa Domenighini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
ISM-01_0520---As Received	A0E0214-01	Soil	05/06/20 09:30	05/08/20 07:35
ISM-01_0520---After Processing	A0E0214-02	Soil	05/06/20 18:00	05/08/20 07:35
ISM-02_0520---As Received	A0E0214-03	Soil	05/05/20 11:30	05/08/20 07:35
ISM-02_0520---After Processing	A0E0214-04	Soil	05/05/20 11:30	05/08/20 07:35
ISM-03_0520---As Received	A0E0214-05	Soil	05/07/20 12:30	05/08/20 07:35
ISM-03_0520---After Processing	A0E0214-06	Soil	05/07/20 12:30	05/08/20 07:35
ISM-04_0520---As Received	A0E0214-07	Soil	05/06/20 13:00	05/08/20 07:35
ISM-04_0520---After Processing	A0E0214-08	Soil	05/06/20 13:00	05/08/20 07:35
ISM-05_0520---As Received	A0E0214-09	Soil	05/07/20 10:00	05/08/20 07:35
ISM-05_0520---After Processing	A0E0214-10	Soil	05/07/20 10:00	05/08/20 07:35
ISM-06_0520---As Received	A0E0214-11	Soil	05/07/20 15:30	05/08/20 07:35
ISM-06_0520---After Processing	A0E0214-12	Soil	05/07/20 15:30	05/08/20 07:35
ISM-07_0520---As Received	A0E0214-13	Soil	05/05/20 14:30	05/08/20 07:35
ISM-07_0520---After Processing	A0E0214-14	Soil	05/05/20 14:30	05/08/20 07:35
ISM-08_0520---As Received	A0E0214-15	Soil	05/05/20 16:30	05/08/20 07:35
ISM-08_0520---After Processing	A0E0214-16	Soil	05/05/20 16:30	05/08/20 07:35
ISM-104_0520---As Received	A0E0214-17	Soil	05/06/20 18:00	05/08/20 07:35
ISM-104_0520---After Processing	A0E0214-18	Soil	05/06/20 18:00	05/08/20 07:35
ISM-204_0520---As Received	A0E0214-19	Soil	05/06/20 14:00	05/08/20 07:35
ISM-204_0520---After Processing	A0E0214-20	Soil	05/06/20 14:00	05/08/20 07:35
ISM-907_0520---After Processing	A0E0214-21	Soil	05/05/20 14:30	05/08/20 07:35
EB-03_0520	A0E0214-22	Water	05/07/20 13:50	05/08/20 07:35

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



**Apex Laboratories, LLC**

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

AMENDED REPORT

<b><u>GSI Water Solutions</u></b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b><u>JH Baxter-Eugene ISM</u></b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b><u>Report ID:</u></b> <b>A0E0214 - 07 13 20 0843</b>
--	--	--

ANALYTICAL CASE NARRATIVE

**Work Order: A0E0214**

Subcontract

This report is not complete without the attached subcontract laboratory report for Dioxins and Furans from Cape Fear.

Amended Report Revision 1:

This report supersedes all previous reports.

At the request of the client additional testing was added to samples, ISM-05\_0520 and ISM-08\_0520.

Lisa Domenighini  
Client Services Manager  
6/30/2020

---

Apex Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

---

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>ISM-01_0520---After Processing (A0E0214-02RE2)</b>				<b>Matrix: Soil</b>		<b>Batch: 0050634</b>		
Acenaphthene	ND	0.0139	0.0278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
Acenaphthylene	ND	0.0139	0.0278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
Anthracene	ND	0.0139	0.0278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
<b>Benzo(a)anthracene</b>	<b>0.0234</b>	0.0139	0.0278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	<b>J</b>
<b>Benzo(a)pyrene</b>	<b>0.0454</b>	0.0208	0.0417	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
<b>Benzo(b)fluoranthene</b>	<b>0.0472</b>	0.0208	0.0417	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
<b>Benzo(k)fluoranthene</b>	<b>0.0264</b>	0.0208	0.0417	mg/kg dry	10	05/21/20 18:10	EPA 8270E	<b>J</b>
<b>Benzo(g,h,i)perylene</b>	<b>0.0239</b>	0.0139	0.0278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	<b>J</b>
<b>Chrysene</b>	<b>0.0229</b>	0.0139	0.0278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	<b>J</b>
Dibenz(a,h)anthracene	ND	0.0139	0.0278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
<b>Fluoranthene</b>	<b>0.0353</b>	0.0139	0.0278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
Fluorene	ND	0.0139	0.0278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>0.0198</b>	0.0139	0.0278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	<b>J</b>
1-Methylnaphthalene	ND	0.0278	0.0555	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
2-Methylnaphthalene	ND	0.0278	0.0555	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
Naphthalene	ND	0.0278	0.0555	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
<b>Phenanthrene</b>	<b>0.0164</b>	0.0139	0.0278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	<b>J</b>
<b>Pyrene</b>	<b>0.0333</b>	0.0139	0.0278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
Pentachlorophenol (PCP)	ND	0.139	0.278	mg/kg dry	10	05/21/20 18:10	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 46 %</i>		<i>Limits: 37-122 %</i>	<i>10</i>	<i>05/21/20 18:10</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>53 %</i>		<i>44-120 %</i>	<i>10</i>	<i>05/21/20 18:10</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>39 %</i>		<i>33-122 %</i>	<i>10</i>	<i>05/21/20 18:10</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>83 %</i>		<i>54-127 %</i>	<i>10</i>	<i>05/21/20 18:10</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>40 %</i>		<i>35-120 %</i>	<i>10</i>	<i>05/21/20 18:10</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>81 %</i>		<i>39-132 %</i>	<i>10</i>	<i>05/21/20 18:10</i>	<i>EPA 8270E</i>	<i>Q-41</i>

<b>ISM-02_0520---After Processing (A0E0214-04RE2)</b>				<b>Matrix: Soil</b>		<b>Batch: 0050634</b>		<b>R-04</b>
Acenaphthene	ND	0.0139	0.0280	mg/kg dry	10	05/21/20 18:45	EPA 8270E	
Acenaphthylene	ND	0.0139	0.0280	mg/kg dry	10	05/21/20 18:45	EPA 8270E	
Anthracene	ND	0.0139	0.0280	mg/kg dry	10	05/21/20 18:45	EPA 8270E	
Benzo(a)anthracene	ND	0.0139	0.0280	mg/kg dry	10	05/21/20 18:45	EPA 8270E	
<b>Benzo(a)pyrene</b>	<b>0.0288</b>	0.0209	0.0419	mg/kg dry	10	05/21/20 18:45	EPA 8270E	<b>J</b>
<b>Benzo(b)fluoranthene</b>	<b>0.0292</b>	0.0209	0.0419	mg/kg dry	10	05/21/20 18:45	EPA 8270E	<b>J</b>
Benzo(k)fluoranthene	ND	0.0209	0.0419	mg/kg dry	10	05/21/20 18:45	EPA 8270E	
Benzo(g,h,i)perylene	ND	0.0139	0.0280	mg/kg dry	10	05/21/20 18:45	EPA 8270E	
Chrysene	ND	0.0139	0.0280	mg/kg dry	10	05/21/20 18:45	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.0139	0.0280	mg/kg dry	10	05/21/20 18:45	EPA 8270E	
<b>Fluoranthene</b>	<b>0.0257</b>	0.0139	0.0280	mg/kg dry	10	05/21/20 18:45	EPA 8270E	<b>J</b>

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
<b>ISM-02_0520---After Processing (A0E0214-04RE2)</b>				<b>Matrix: Soil</b>		<b>Batch: 0050634</b>		<b>R-04</b>	
Fluorene	ND	0.0139	0.0280	mg/kg dry	10	05/21/20 18:45	EPA 8270E		
Indeno(1,2,3-cd)pyrene	ND	0.0139	0.0280	mg/kg dry	10	05/21/20 18:45	EPA 8270E		
1-Methylnaphthalene	ND	0.0280	0.0558	mg/kg dry	10	05/21/20 18:45	EPA 8270E		
2-Methylnaphthalene	ND	0.0280	0.0558	mg/kg dry	10	05/21/20 18:45	EPA 8270E		
Naphthalene	ND	0.0280	0.0558	mg/kg dry	10	05/21/20 18:45	EPA 8270E		
<b>Phenanthrene</b>	<b>0.0227</b>	0.0139	0.0280	mg/kg dry	10	05/21/20 18:45	EPA 8270E	<b>J</b>	
<b>Pyrene</b>	<b>0.0236</b>	0.0139	0.0280	mg/kg dry	10	05/21/20 18:45	EPA 8270E	<b>J</b>	
<b>Pentachlorophenol (PCP)</b>	<b>0.156</b>	0.139	0.280	mg/kg dry	10	05/21/20 18:45	EPA 8270E	<b>J</b>	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 63 %</i>		<i>Limits: 37-122 %</i>		<i>10</i>	<i>05/21/20 18:45</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>72 %</i>		<i>44-120 %</i>		<i>10</i>	<i>05/21/20 18:45</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>57 %</i>		<i>33-122 %</i>		<i>10</i>	<i>05/21/20 18:45</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>85 %</i>		<i>54-127 %</i>		<i>10</i>	<i>05/21/20 18:45</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>57 %</i>		<i>35-120 %</i>		<i>10</i>	<i>05/21/20 18:45</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>104 %</i>		<i>39-132 %</i>		<i>10</i>	<i>05/21/20 18:45</i>	<i>EPA 8270E</i>	<i>Q-41</i>

<b>ISM-03_0520---After Processing (A0E0214-06)</b>				<b>Matrix: Soil</b>		<b>Batch: 0050634</b>			
Acenaphthene	ND	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
Acenaphthylene	ND	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
<b>Anthracene</b>	<b>0.133</b>	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
<b>Benz(a)anthracene</b>	<b>0.0822</b>	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E	<b>J</b>	
<b>Benzo(a)pyrene</b>	<b>0.121</b>	0.0855	0.171	mg/kg dry	40	05/18/20 21:46	EPA 8270E	<b>J</b>	
<b>Benzo(b)fluoranthene</b>	<b>0.377</b>	0.0855	0.171	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
<b>Benzo(k)fluoranthene</b>	<b>0.107</b>	0.0855	0.171	mg/kg dry	40	05/18/20 21:46	EPA 8270E	<b>J</b>	
<b>Benzo(g,h,i)perylene</b>	<b>0.151</b>	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
<b>Chrysene</b>	<b>0.237</b>	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
Dibenz(a,h)anthracene	ND	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
<b>Fluoranthene</b>	<b>0.153</b>	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
Fluorene	ND	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
<b>Indeno(1,2,3-cd)pyrene</b>	<b>0.140</b>	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
1-Methylnaphthalene	ND	0.114	0.228	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
2-Methylnaphthalene	ND	0.114	0.228	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
Naphthalene	ND	0.114	0.228	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
<b>Phenanthrene</b>	<b>0.0907</b>	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E	<b>J</b>	
<b>Pyrene</b>	<b>0.166</b>	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
Carbazole	ND	0.0855	0.171	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
Dibenzofuran	ND	0.0568	0.114	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
<b>Pentachlorophenol (PCP)</b>	<b>1.65</b>	0.568	1.14	mg/kg dry	40	05/18/20 21:46	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 37 %</i>		<i>Limits: 37-122 %</i>		<i>40</i>	<i>05/18/20 21:46</i>	<i>EPA 8270E</i>	<i>S-05</i>

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>ISM-03_0520---After Processing (A0E0214-06)</b>			<b>Matrix: Soil</b>		<b>Batch: 0050634</b>			
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>		<i>Recovery: 50 %</i>	<i>Limits: 44-120 %</i>		40	05/18/20 21:46	EPA 8270E	S-05
<i>Phenol-d6 (Surr)</i>		28 %	33-122 %		40	05/18/20 21:46	EPA 8270E	S-05
<i>p-Terphenyl-d14 (Surr)</i>		74 %	54-127 %		40	05/18/20 21:46	EPA 8270E	S-05
<i>2-Fluorophenol (Surr)</i>		28 %	35-120 %		40	05/18/20 21:46	EPA 8270E	S-05
<i>2,4,6-Tribromophenol (Surr)</i>		86 %	39-132 %		40	05/18/20 21:46	EPA 8270E	S-05

<b>ISM-04_0520---After Processing (A0E0214-08)</b>			<b>Matrix: Soil</b>		<b>Batch: 0050634</b>			
Acenaphthene	ND	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
Acenaphthylene	ND	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
Anthracene	ND	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
Benz(a)anthracene	ND	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
<b>Benzo(a)pyrene</b>	<b>0.0953</b>	0.0848	0.170	mg/kg dry	40	05/18/20 22:19	EPA 8270E	<b>J</b>
<b>Benzo(b)fluoranthene</b>	<b>0.113</b>	0.0848	0.170	mg/kg dry	40	05/18/20 22:19	EPA 8270E	<b>J</b>
Benzo(k)fluoranthene	ND	0.0848	0.170	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
<b>Benzo(g,h,i)perylene</b>	<b>0.117</b>	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
<b>Chrysene</b>	<b>0.109</b>	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	<b>J</b>
Dibenz(a,h)anthracene	ND	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
<b>Fluoranthene</b>	<b>0.0891</b>	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	<b>J</b>
Fluorene	ND	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>0.0630</b>	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	<b>J</b>
1-Methylnaphthalene	ND	0.113	0.226	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
2-Methylnaphthalene	ND	0.113	0.226	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
Naphthalene	ND	0.113	0.226	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
<b>Phenanthrene</b>	<b>0.0690</b>	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	<b>J</b>
<b>Pyrene</b>	<b>0.129</b>	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
Carbazole	ND	0.0848	0.170	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
Dibenzofuran	ND	0.0564	0.113	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
Pentachlorophenol (PCP)	ND	0.564	1.13	mg/kg dry	40	05/18/20 22:19	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 66 %</i>	<i>Limits: 37-122 %</i>		40	05/18/20 22:19	EPA 8270E	S-05
<i>2-Fluorobiphenyl (Surr)</i>		64 %	44-120 %		40	05/18/20 22:19	EPA 8270E	S-05
<i>Phenol-d6 (Surr)</i>		46 %	33-122 %		40	05/18/20 22:19	EPA 8270E	S-05
<i>p-Terphenyl-d14 (Surr)</i>		88 %	54-127 %		40	05/18/20 22:19	EPA 8270E	S-05
<i>2-Fluorophenol (Surr)</i>		51 %	35-120 %		40	05/18/20 22:19	EPA 8270E	S-05
<i>2,4,6-Tribromophenol (Surr)</i>		106 %	39-132 %		40	05/18/20 22:19	EPA 8270E	S-05

<b>ISM-06_0520---After Processing (A0E0214-12)</b>			<b>Matrix: Soil</b>		<b>Batch: 0050634</b>			
Acenaphthene	ND	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Acenaphthylene	ND	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager





AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>ISM-06_0520---After Processing (A0E0214-12)</b>				<b>Matrix: Soil</b>		<b>Batch: 0050634</b>		
Anthracene	0.157	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Benz(a)anthracene	0.390	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Benzo(a)pyrene	0.359	0.0840	0.168	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Benzo(b)fluoranthene	0.725	0.0840	0.168	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Benzo(k)fluoranthene	0.224	0.0840	0.168	mg/kg dry	40	05/18/20 22:53	EPA 8270E	M-05
Benzo(g,h,i)perylene	0.134	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Chrysene	0.670	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Fluoranthene	0.618	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Fluorene	ND	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Indeno(1,2,3-cd)pyrene	0.156	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
1-Methylnaphthalene	ND	0.112	0.224	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
2-Methylnaphthalene	ND	0.112	0.224	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Naphthalene	ND	0.112	0.224	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Phenanthrene	0.0981	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	J
Pyrene	0.771	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Carbazole	ND	0.0840	0.168	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Dibenzofuran	ND	0.0559	0.112	mg/kg dry	40	05/18/20 22:53	EPA 8270E	
Pentachlorophenol (PCP)	0.996	0.559	1.12	mg/kg dry	40	05/18/20 22:53	EPA 8270E	J
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 67 %</i>		<i>Limits: 37-122 %</i>	40	05/18/20 22:53	EPA 8270E	S-05
<i>2-Fluorobiphenyl (Surr)</i>		<i>67 %</i>		<i>44-120 %</i>	40	05/18/20 22:53	EPA 8270E	S-05
<i>Phenol-d6 (Surr)</i>		<i>46 %</i>		<i>33-122 %</i>	40	05/18/20 22:53	EPA 8270E	S-05
<i>p-Terphenyl-d14 (Surr)</i>		<i>86 %</i>		<i>54-127 %</i>	40	05/18/20 22:53	EPA 8270E	S-05
<i>2-Fluorophenol (Surr)</i>		<i>51 %</i>		<i>35-120 %</i>	40	05/18/20 22:53	EPA 8270E	S-05
<i>2,4,6-Tribromophenol (Surr)</i>		<i>95 %</i>		<i>39-132 %</i>	40	05/18/20 22:53	EPA 8270E	S-05

<b>ISM-07_0520---After Processing (A0E0214-14RE1)</b>				<b>Matrix: Soil</b>		<b>Batch: 0050634</b>		
Acenaphthene	ND	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
Acenaphthylene	ND	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
Anthracene	ND	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
Benzo(a)anthracene	0.00581	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	J
Benzo(a)pyrene	0.00861	0.00834	0.0167	mg/kg dry	4	05/18/20 17:09	EPA 8270E	J
Benzo(b)fluoranthene	0.00974	0.00834	0.0167	mg/kg dry	4	05/18/20 17:09	EPA 8270E	J
Benzo(k)fluoranthene	ND	0.00834	0.0167	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
Benzo(g,h,i)perylene	0.00686	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	J
Chrysene	0.00985	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	J
Dibenz(a,h)anthracene	ND	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
Fluoranthene	0.0129	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager





AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>ISM-07_0520---After Processing (A0E0214-14RE1)</b>			<b>Matrix: Soil</b>		<b>Batch: 0050634</b>			
Fluorene	ND	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>0.00606</b>	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	<b>J</b>
1-Methylnaphthalene	ND	0.0111	0.0222	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
2-Methylnaphthalene	ND	0.0111	0.0222	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
Naphthalene	ND	0.0111	0.0222	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
<b>Phenanthrene</b>	<b>0.0134</b>	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
<b>Pyrene</b>	<b>0.0113</b>	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
Carbazole	ND	0.00834	0.0167	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
Dibenzofuran	ND	0.00554	0.0111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	
<b>Pentachlorophenol (PCP)</b>	<b>0.0710</b>	0.0554	0.111	mg/kg dry	4	05/18/20 17:09	EPA 8270E	<b>J</b>
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 59 %</i>		<i>Limits: 37-122 %</i>		<i>4</i>	<i>05/18/20 17:09</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>75 %</i>		<i>44-120 %</i>		<i>4</i>	<i>05/18/20 17:09</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>45 %</i>		<i>33-122 %</i>		<i>4</i>	<i>05/18/20 17:09</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>82 %</i>		<i>54-127 %</i>		<i>4</i>	<i>05/18/20 17:09</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>47 %</i>		<i>35-120 %</i>		<i>4</i>	<i>05/18/20 17:09</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>74 %</i>		<i>39-132 %</i>		<i>4</i>	<i>05/18/20 17:09</i>	<i>EPA 8270E</i>

<b>ISM-08_0520---After Processing (A0E0214-16RE2)</b>			<b>Matrix: Soil</b>		<b>Batch: 0060509</b>			<b>H-08</b>
Acenaphthene	ND	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	
Acenaphthylene	ND	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	
<b>Anthracene</b>	<b>0.186</b>	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	<b>J, Q-42</b>
<b>Benz(a)anthracene</b>	<b>0.244</b>	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	<b>J, Q-42</b>
<b>Benzo(a)pyrene</b>	<b>0.499</b>	0.207	0.415	mg/kg dry	100	06/16/20 20:53	EPA 8270E	<b>Q-42</b>
<b>Benzo(b)fluoranthene</b>	<b>0.928</b>	0.207	0.415	mg/kg dry	100	06/16/20 20:53	EPA 8270E	<b>Q-42</b>
<b>Benzo(k)fluoranthene</b>	<b>0.351</b>	0.207	0.415	mg/kg dry	100	06/16/20 20:53	EPA 8270E	<b>J, Q-42</b>
<b>Benzo(g,h,i)perylene</b>	<b>0.408</b>	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	<b>Q-42</b>
<b>Chrysene</b>	<b>0.510</b>	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	<b>Q-42</b>
Dibenz(a,h)anthracene	ND	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	
<b>Fluoranthene</b>	<b>0.484</b>	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	<b>Q-42</b>
Fluorene	ND	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	
<b>Indeno(1,2,3-cd)pyrene</b>	<b>0.385</b>	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	<b>Q-42</b>
1-Methylnaphthalene	ND	0.277	0.553	mg/kg dry	100	06/16/20 20:53	EPA 8270E	
2-Methylnaphthalene	ND	0.277	0.553	mg/kg dry	100	06/16/20 20:53	EPA 8270E	
Naphthalene	ND	0.277	0.553	mg/kg dry	100	06/16/20 20:53	EPA 8270E	
<b>Phenanthrene</b>	<b>0.289</b>	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	<b>Q-42</b>
<b>Pyrene</b>	<b>0.477</b>	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	<b>Q-42</b>
<b>Carbazole</b>	<b>0.218</b>	0.207	0.415	mg/kg dry	100	06/16/20 20:53	EPA 8270E	<b>J, Q-42</b>
Dibenzofuran	ND	0.138	0.277	mg/kg dry	100	06/16/20 20:53	EPA 8270E	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>ISM-08_0520---After Processing (A0E0214-16RE2)</b>			<b>Matrix: Soil</b>		<b>Batch: 0060509</b>		<b>H-08</b>	
<b>Pentachlorophenol (PCP)</b>	<b>2.86</b>	1.38	2.77	mg/kg dry	100	06/16/20 20:53	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 4 %</i>		<i>Limits: 37-122 %</i>	<i>100</i>	<i>06/16/20 20:53</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>64 %</i>		<i>44-120 %</i>	<i>100</i>	<i>06/16/20 20:53</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>Phenol-d6 (Surr)</i>		<i>36 %</i>		<i>33-122 %</i>	<i>100</i>	<i>06/16/20 20:53</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>78 %</i>		<i>54-127 %</i>	<i>100</i>	<i>06/16/20 20:53</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>2-Fluorophenol (Surr)</i>		<i>28 %</i>		<i>35-120 %</i>	<i>100</i>	<i>06/16/20 20:53</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>203 %</i>		<i>39-132 %</i>	<i>100</i>	<i>06/16/20 20:53</i>	<i>EPA 8270E</i>	<i>S-05</i>

<b>ISM-104_0520---After Processing (A0E0214-18)</b>			<b>Matrix: Soil</b>		<b>Batch: 0050634</b>		<b>R-04</b>	
Acenaphthene	ND	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
Acenaphthylene	ND	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
Anthracene	ND	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
Benz(a)anthracene	ND	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
Benzo(a)pyrene	ND	0.208	0.416	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
Benzo(b)fluoranthene	ND	0.208	0.416	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
Benzo(k)fluoranthene	ND	0.208	0.416	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
<b>Benzo(g,h,i)perylene</b>	<b>0.150</b>	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	<b>J</b>
Chrysene	ND	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
<b>Fluoranthene</b>	<b>0.144</b>	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	<b>J</b>
Fluorene	ND	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
1-Methylnaphthalene	ND	0.278	0.554	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
2-Methylnaphthalene	ND	0.278	0.554	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
Naphthalene	ND	0.278	0.554	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
Phenanthrene	ND	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
<b>Pyrene</b>	<b>0.190</b>	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	<b>J</b>
Carbazole	ND	0.208	0.416	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
Dibenzofuran	ND	0.138	0.278	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
Pentachlorophenol (PCP)	ND	1.38	2.78	mg/kg dry	40	05/18/20 19:29	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 89 %</i>		<i>Limits: 37-122 %</i>	<i>40</i>	<i>05/18/20 19:29</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>71 %</i>		<i>44-120 %</i>	<i>40</i>	<i>05/18/20 19:29</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>Phenol-d6 (Surr)</i>		<i>50 %</i>		<i>33-122 %</i>	<i>40</i>	<i>05/18/20 19:29</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>102 %</i>		<i>54-127 %</i>	<i>40</i>	<i>05/18/20 19:29</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>2-Fluorophenol (Surr)</i>		<i>54 %</i>		<i>35-120 %</i>	<i>40</i>	<i>05/18/20 19:29</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>134 %</i>		<i>39-132 %</i>	<i>40</i>	<i>05/18/20 19:29</i>	<i>EPA 8270E</i>	<i>S-05</i>

<b>ISM-204_0520---After Processing (A0E0214-20)</b>			<b>Matrix: Soil</b>		<b>Batch: 0050634</b>		<b>R-04</b>	
---	--	--	---------------------	--	-----------------------	--	-------------	--

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
<b>ISM-204_0520---After Processing (A0E0214-20)</b>				<b>Matrix: Soil</b>		<b>Batch: 0050634</b>		<b>R-04</b>	
Acenaphthene	ND	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
Acenaphthylene	ND	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
Anthracene	ND	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
Benz(a)anthracene	ND	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
Benzo(a)pyrene	ND	0.208	0.416	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
Benzo(b)fluoranthene	ND	0.208	0.416	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
Benzo(k)fluoranthene	ND	0.208	0.416	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
<b>Benzo(g,h,i)perylene</b>	<b>0.210</b>	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E	<b>J</b>	
Chrysene	ND	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
Dibenz(a,h)anthracene	ND	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
<b>Fluoranthene</b>	<b>0.164</b>	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E	<b>J</b>	
Fluorene	ND	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
Indeno(1,2,3-cd)pyrene	ND	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
1-Methylnaphthalene	ND	0.278	0.555	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
2-Methylnaphthalene	ND	0.278	0.555	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
Naphthalene	ND	0.278	0.555	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
Phenanthrene	ND	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
<b>Pyrene</b>	<b>0.257</b>	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E	<b>J</b>	
Carbazole	ND	0.208	0.416	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
Dibenzofuran	ND	0.138	0.278	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
Pentachlorophenol (PCP)	ND	1.38	2.78	mg/kg dry	40	05/18/20 20:03	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 85 %</i>		<i>Limits: 37-122 %</i>		<i>40</i>	<i>05/18/20 20:03</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>79 %</i>		<i>44-120 %</i>		<i>40</i>	<i>05/18/20 20:03</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>Phenol-d6 (Surr)</i>		<i>56 %</i>		<i>33-122 %</i>		<i>40</i>	<i>05/18/20 20:03</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>100 %</i>		<i>54-127 %</i>		<i>40</i>	<i>05/18/20 20:03</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>2-Fluorophenol (Surr)</i>		<i>61 %</i>		<i>35-120 %</i>		<i>40</i>	<i>05/18/20 20:03</i>	<i>EPA 8270E</i>	<i>S-05</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>137 %</i>		<i>39-132 %</i>		<i>40</i>	<i>05/18/20 20:03</i>	<i>EPA 8270E</i>	<i>S-05</i>



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

**ANALYTICAL SAMPLE RESULTS**

**Total Metals by EPA 6020A (ICPMS)**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>ISM-01_0520---After Processing (A0E0214-02)</b>				<b>Matrix: Soil</b>				
Batch: 0050946								
Arsenic	6.37	0.554	1.11	mg/kg dry	10	05/27/20 16:39	EPA 6020A	
Chromium	42.9	0.554	1.11	mg/kg dry	10	05/27/20 16:39	EPA 6020A	
Copper	38.2	1.11	2.22	mg/kg dry	10	05/27/20 16:39	EPA 6020A	
Zinc	97.2	2.22	4.43	mg/kg dry	10	05/27/20 16:39	EPA 6020A	
<b>ISM-02_0520---After Processing (A0E0214-04)</b>				<b>Matrix: Soil</b>				
Batch: 0050946								
Arsenic	6.05	0.555	1.11	mg/kg dry	10	05/27/20 16:54	EPA 6020A	
Chromium	33.1	0.555	1.11	mg/kg dry	10	05/27/20 16:54	EPA 6020A	
Copper	35.3	1.11	2.22	mg/kg dry	10	05/27/20 16:54	EPA 6020A	
Zinc	128	2.22	4.44	mg/kg dry	10	05/27/20 16:54	EPA 6020A	
<b>ISM-03_0520---After Processing (A0E0214-06)</b>				<b>Matrix: Soil</b>				
Batch: 0050946								
Arsenic	59.7	0.588	1.18	mg/kg dry	10	05/27/20 16:59	EPA 6020A	
Chromium	47.7	0.588	1.18	mg/kg dry	10	05/27/20 16:59	EPA 6020A	
Copper	218	1.18	2.35	mg/kg dry	10	05/27/20 16:59	EPA 6020A	
Zinc	444	2.35	4.71	mg/kg dry	10	05/27/20 16:59	EPA 6020A	
<b>ISM-04_0520---After Processing (A0E0214-08)</b>				<b>Matrix: Soil</b>				
Batch: 0050946								
Arsenic	8.22	0.570	1.14	mg/kg dry	10	05/27/20 17:04	EPA 6020A	
Chromium	50.4	0.570	1.14	mg/kg dry	10	05/27/20 17:04	EPA 6020A	
Copper	86.2	1.14	2.28	mg/kg dry	10	05/27/20 17:04	EPA 6020A	
Zinc	349	2.28	4.56	mg/kg dry	10	05/27/20 17:04	EPA 6020A	
<b>ISM-05_0520---After Processing (A0E0214-10)</b>				<b>Matrix: Soil</b>				
Batch: 0060591								
Zinc	97.7	2.24	4.49	mg/kg dry	10	06/18/20 16:27	EPA 6020A	
<b>ISM-06_0520---After Processing (A0E0214-12)</b>				<b>Matrix: Soil</b>				
Batch: 0050946								
Arsenic	41.6	0.522	1.04	mg/kg dry	10	05/27/20 17:09	EPA 6020A	
Chromium	110	0.522	1.04	mg/kg dry	10	05/27/20 17:09	EPA 6020A	
Copper	233	1.04	2.09	mg/kg dry	10	05/27/20 17:09	EPA 6020A	

Apex Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Lisa Domenighini, Client Services Manager



AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: JH Baxter-Eugene ISM

Project Number: 302

Project Manager: Josh Bale

Report ID:

A0E0214 - 07 13 20 0843

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>ISM-06_0520---After Processing (A0E0214-12)</b>				<b>Matrix: Soil</b>				
Zinc	208	2.09	4.17	mg/kg dry	10	05/27/20 17:09	EPA 6020A	
<b>ISM-07_0520---After Processing (A0E0214-14RE1)</b>				<b>Matrix: Soil</b>				
Batch: 0050946								
Arsenic	10.8	0.582	1.16	mg/kg dry	10	05/28/20 13:37	EPA 6020A	
Chromium	45.7	0.582	1.16	mg/kg dry	10	05/28/20 13:37	EPA 6020A	
Copper	46.8	1.16	2.33	mg/kg dry	10	05/28/20 13:37	EPA 6020A	
Zinc	110	2.33	4.66	mg/kg dry	10	05/28/20 13:37	EPA 6020A	
<b>ISM-08_0520---After Processing (A0E0214-16)</b>				<b>Matrix: Soil</b>				
Batch: 0060591								
Arsenic	67.2	0.547	1.09	mg/kg dry	10	06/18/20 16:42	EPA 6020A	
Chromium	75.1	0.547	1.09	mg/kg dry	10	06/18/20 16:42	EPA 6020A	
Copper	333	1.09	2.19	mg/kg dry	10	06/18/20 16:42	EPA 6020A	
Zinc	580	2.19	4.38	mg/kg dry	10	06/18/20 16:42	EPA 6020A	
<b>ISM-104_0520---After Processing (A0E0214-18)</b>				<b>Matrix: Soil</b>				
Batch: 0050946								
Arsenic	7.67	0.563	1.13	mg/kg dry	10	05/27/20 18:10	EPA 6020A	
Chromium	46.2	0.563	1.13	mg/kg dry	10	05/27/20 18:10	EPA 6020A	
Copper	84.3	1.13	2.25	mg/kg dry	10	05/27/20 18:10	EPA 6020A	
Zinc	369	2.25	4.50	mg/kg dry	10	05/27/20 18:10	EPA 6020A	
<b>ISM-204_0520---After Processing (A0E0214-20)</b>				<b>Matrix: Soil</b>				
Batch: 0050946								
Arsenic	10.3	0.579	1.16	mg/kg dry	10	05/27/20 18:15	EPA 6020A	
Chromium	58.9	0.579	1.16	mg/kg dry	10	05/27/20 18:15	EPA 6020A	
Copper	125	1.16	2.31	mg/kg dry	10	05/27/20 18:15	EPA 6020A	
Zinc	560	2.31	4.63	mg/kg dry	10	05/27/20 18:15	EPA 6020A	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

ANALYTICAL SAMPLE RESULTS

**Demand Parameters**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>ISM-03_0520---After Processing (A0E0214-06RE1)</b>				<b>Matrix: Soil</b>				
Batch: 0050720								
<b>Total Organic Carbon</b>	<b>5.4</b>	0.020	0.020	%	1	05/21/20 12:07	PSEP/SM 5310B MOD	<b>B-02</b>
<b>ISM-06_0520---After Processing (A0E0214-12)</b>				<b>Matrix: Soil</b>				
Batch: 0050720								
<b>Total Organic Carbon</b>	<b>3.2</b>	0.020	0.020	%	1	05/20/20 20:44	PSEP/SM 5310B MOD	<b>B-02</b>

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street  
 Tigard, OR 97223  
 503-718-2323  
 ORELAP ID: OR100062

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

**ANALYTICAL SAMPLE RESULTS**

**Percent Dry Weight**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>ISM-01_0520---After Processing (A0E0214-02)</b>				<b>Matrix: Soil</b>		<b>Batch: 0051032</b>		
% Solids	94.8	1.00	1.00	%	1	05/29/20 08:46	EPA 8000C	
<b>ISM-02_0520---After Processing (A0E0214-04)</b>				<b>Matrix: Soil</b>		<b>Batch: 0051032</b>		
% Solids	94.2	1.00	1.00	%	1	05/29/20 08:46	EPA 8000C	
<b>ISM-03_0520---After Processing (A0E0214-06)</b>				<b>Matrix: Soil</b>		<b>Batch: 0050724</b>		
% Solids	92.6	1.00	1.00	%	1	05/21/20 07:30	EPA 8000C	
<b>ISM-04_0520---After Processing (A0E0214-08)</b>				<b>Matrix: Soil</b>		<b>Batch: 0051032</b>		
% Solids	93.0	1.00	1.00	%	1	05/29/20 08:46	EPA 8000C	
<b>ISM-05_0520---After Processing (A0E0214-10)</b>				<b>Matrix: Soil</b>		<b>Batch: 0060584</b>		
% Solids	94.6	1.00	1.00	%	1	06/18/20 08:16	EPA 8000C	
<b>ISM-06_0520---After Processing (A0E0214-12)</b>				<b>Matrix: Soil</b>		<b>Batch: 0051032</b>		
% Solids	93.4	1.00	1.00	%	1	05/29/20 08:46	EPA 8000C	
<b>ISM-07_0520---After Processing (A0E0214-14)</b>				<b>Matrix: Soil</b>		<b>Batch: 0050635</b>		
% Solids	94.6	1.00	1.00	%	1	05/19/20 09:00	EPA 8000C	
<b>ISM-08_0520---After Processing (A0E0214-16)</b>				<b>Matrix: Soil</b>		<b>Batch: 0060584</b>		
% Solids	93.6	1.00	1.00	%	1	06/18/20 08:16	EPA 8000C	
<b>ISM-104_0520---After Processing (A0E0214-18)</b>				<b>Matrix: Soil</b>		<b>Batch: 0051032</b>		
% Solids	94.9	1.00	1.00	%	1	05/29/20 08:46	EPA 8000C	
<b>ISM-204_0520---After Processing (A0E0214-20)</b>				<b>Matrix: Soil</b>		<b>Batch: 0051032</b>		
% Solids	93.3	1.00	1.00	%	1	05/29/20 08:46	EPA 8000C	

Apex Laboratories

Lisa Domenighini, Client Services Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*





AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	----------	--------------	---------------	-------	--------------	-----	-----------	-------

Batch 0050634 - EPA 3546

Soil

Blank (0050634-BLK2) Prepared: 05/18/20 10:51 Analyzed: 05/18/20 15:21

EPA 8270E												
Acenaphthene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
Acenaphthylene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
Anthracene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
Benz(a)anthracene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
Benzo(a)pyrene	ND	0.00188	0.00375	mg/kg wet	1	---	---	---	---	---	---	---
Benzo(b)fluoranthene	ND	0.00188	0.00375	mg/kg wet	1	---	---	---	---	---	---	---
Benzo(k)fluoranthene	ND	0.00188	0.00375	mg/kg wet	1	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
Chrysene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
Dibenz(a,h)anthracene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
Fluoranthene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
Fluorene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
1-Methylnaphthalene	ND	0.00250	0.00500	mg/kg wet	1	---	---	---	---	---	---	---
2-Methylnaphthalene	ND	0.00250	0.00500	mg/kg wet	1	---	---	---	---	---	---	---
Naphthalene	ND	0.00250	0.00500	mg/kg wet	1	---	---	---	---	---	---	---
Phenanthrene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
Pyrene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
Carbazole	ND	0.00188	0.00375	mg/kg wet	1	---	---	---	---	---	---	---
Dibenzofuran	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	---
Pentachlorophenol (PCP)	ND	0.0125	0.0250	mg/kg wet	1	---	---	---	---	---	---	---

Surr: Nitrobenzene-d5 (Surr)	Recovery: 83 %	Limits: 37-122 %	Dilution: 1x
2-Fluorobiphenyl (Surr)	89 %	44-120 %	"
Phenol-d6 (Surr)	81 %	33-122 %	"
p-Terphenyl-d14 (Surr)	98 %	54-127 %	"
2-Fluorophenol (Surr)	77 %	35-120 %	"
2,4,6-Tribromophenol (Surr)	83 %	39-132 %	"

LCS (0050634-BS2)

Prepared: 05/18/20 10:51 Analyzed: 05/18/20 15:55

EPA 8270E												
Acenaphthene	0.506	0.00532	0.0107	mg/kg wet	4	0.533	---	95	40 - 123%	---	---	---
Acenaphthylene	0.513	0.00532	0.0107	mg/kg wet	4	0.533	---	96	32 - 132%	---	---	---
Anthracene	0.546	0.00532	0.0107	mg/kg wet	4	0.533	---	102	47 - 123%	---	---	---

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0050634 - EPA 3546</b>												
<b>Soil</b>												
<b>LCS (0050634-BS2)</b>	Prepared: 05/18/20 10:51 Analyzed: 05/18/20 15:55											
Benz(a)anthracene	0.508	0.00532	0.0107	mg/kg wet	4	0.533	---	95	49 - 126%	---	---	
Benzo(a)pyrene	0.542	0.00800	0.0160	mg/kg wet	4	0.533	---	102	45 - 129%	---	---	
Benzo(b)fluoranthene	0.531	0.00800	0.0160	mg/kg wet	4	0.533	---	100	45 - 132%	---	---	
Benzo(k)fluoranthene	0.567	0.00800	0.0160	mg/kg wet	4	0.533	---	106	47 - 132%	---	---	
Benzo(g,h,i)perylene	0.535	0.00532	0.0107	mg/kg wet	4	0.533	---	100	43 - 134%	---	---	
Chrysene	0.509	0.00532	0.0107	mg/kg wet	4	0.533	---	95	50 - 124%	---	---	
Dibenz(a,h)anthracene	0.524	0.00532	0.0107	mg/kg wet	4	0.533	---	98	45 - 134%	---	---	
Fluoranthene	0.541	0.00532	0.0107	mg/kg wet	4	0.533	---	101	50 - 127%	---	---	
Fluorene	0.530	0.00532	0.0107	mg/kg wet	4	0.533	---	99	43 - 125%	---	---	
Indeno(1,2,3-cd)pyrene	0.497	0.00532	0.0107	mg/kg wet	4	0.533	---	93	45 - 133%	---	---	
1-Methylnaphthalene	0.513	0.0107	0.0213	mg/kg wet	4	0.533	---	96	40 - 120%	---	---	
2-Methylnaphthalene	0.514	0.0107	0.0213	mg/kg wet	4	0.533	---	96	38 - 122%	---	---	
Naphthalene	0.495	0.0107	0.0213	mg/kg wet	4	0.533	---	93	35 - 123%	---	---	
Phenanthrene	0.519	0.00532	0.0107	mg/kg wet	4	0.533	---	97	50 - 121%	---	---	
Pyrene	0.539	0.00532	0.0107	mg/kg wet	4	0.533	---	101	47 - 127%	---	---	
Carbazole	0.552	0.00800	0.0160	mg/kg wet	4	0.533	---	103	50 - 123%	---	---	
Dibenzofuran	0.520	0.00532	0.0107	mg/kg wet	4	0.533	---	97	44 - 120%	---	---	
Pentachlorophenol (PCP)	0.506	0.0532	0.107	mg/kg wet	4	0.533	---	95	25 - 133%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>	Recovery: 88 %		Limits: 37-122 %		Dilution: 4x							
<i>2-Fluorobiphenyl (Surr)</i>	104 %		44-120 %		"							
<i>Phenol-d6 (Surr)</i>	92 %		33-122 %		"							
<i>p-Terphenyl-d14 (Surr)</i>	102 %		54-127 %		"							
<i>2-Fluorophenol (Surr)</i>	85 %		35-120 %		"							
<i>2,4,6-Tribromophenol (Surr)</i>	101 %		39-132 %		"							

**Duplicate (0050634-DUP2)** Prepared: 05/18/20 10:51 Analyzed: 05/18/20 17:45

**QC Source Sample: ISM-07 0520---After Processing (A0E0214-14RE1)**  
**EPA 8270E**

Acenaphthene	ND	0.00551	0.0111	mg/kg dry	4	---	ND	---	---	---	30%	
Acenaphthylene	ND	0.00551	0.0111	mg/kg dry	4	---	ND	---	---	---	30%	
Anthracene	ND	0.00551	0.0111	mg/kg dry	4	---	ND	---	---	---	30%	
Benz(a)anthracene	<b>0.00570</b>	0.00551	0.0111	mg/kg dry	4	---	0.00581	---	---	2	30%	J
Benzo(a)pyrene	<b>0.00876</b>	0.00829	0.0166	mg/kg dry	4	---	0.00861	---	---	2	30%	J
Benzo(b)fluoranthene	<b>0.00923</b>	0.00829	0.0166	mg/kg dry	4	---	0.00974	---	---	5	30%	J

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0050634 - EPA 3546</b>												
<b>Soil</b>												
<b>Duplicate (0050634-DUP2)</b>			Prepared: 05/18/20 10:51 Analyzed: 05/18/20 17:45									
<b>QC Source Sample: ISM-07 0520---After Processing (A0E0214-14RE1)</b>												
Benzo(k)fluoranthene	ND	0.00829	0.0166	mg/kg dry	4	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	<b>0.00764</b>	0.00551	0.0111	mg/kg dry	4	---	0.00686	---	---	11	30%	J
Chrysene	<b>0.0116</b>	0.00551	0.0111	mg/kg dry	4	---	0.00985	---	---	16	30%	
Dibenz(a,h)anthracene	ND	0.00551	0.0111	mg/kg dry	4	---	ND	---	---	---	30%	
Fluoranthene	<b>0.0138</b>	0.00551	0.0111	mg/kg dry	4	---	0.0129	---	---	7	30%	
Fluorene	ND	0.00551	0.0111	mg/kg dry	4	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	0.00551	0.0111	mg/kg dry	4	---	0.00606	---	---	***	<b>30%</b>	Q-05
1-Methylnaphthalene	ND	0.0111	0.0221	mg/kg dry	4	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	0.0111	0.0221	mg/kg dry	4	---	ND	---	---	---	30%	
Naphthalene	ND	0.0111	0.0221	mg/kg dry	4	---	ND	---	---	---	30%	
Phenanthrene	<b>0.0171</b>	0.00551	0.0111	mg/kg dry	4	---	0.0134	---	---	24	30%	
Pyrene	<b>0.0129</b>	0.00551	0.0111	mg/kg dry	4	---	0.0113	---	---	13	30%	
Carbazole	ND	0.00829	0.0166	mg/kg dry	4	---	ND	---	---	---	30%	
Dibenzofuran	ND	0.00551	0.0111	mg/kg dry	4	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	<b>0.0664</b>	0.0551	0.111	mg/kg dry	4	---	0.0710	---	---	7	30%	J
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 64 % Limits: 37-122 % Dilution: 4x</i>												
<i>2-Fluorobiphenyl (Surr) 76 % 44-120 % "</i>												
<i>Phenol-d6 (Surr) 49 % 33-122 % "</i>												
<i>p-Terphenyl-d14 (Surr) 84 % 54-127 % "</i>												
<i>2-Fluorophenol (Surr) 51 % 35-120 % "</i>												
<i>2,4,6-Tribromophenol (Surr) 85 % 39-132 % "</i>												

<b>Matrix Spike (0050634-MS2)</b>												
Prepared: 05/18/20 10:51 Analyzed: 05/18/20 18:19												
<b>QC Source Sample: ISM-07 0520---After Processing (A0E0214-14RE1)</b>												
<b>EPA 8270E</b>												
Acenaphthene	0.438	0.00552	0.0111	mg/kg dry	4	0.553	ND	79	40 - 123%	---	---	
Acenaphthylene	0.446	0.00552	0.0111	mg/kg dry	4	0.553	ND	81	32 - 132%	---	---	
Anthracene	0.476	0.00552	0.0111	mg/kg dry	4	0.553	ND	86	47 - 123%	---	---	
Benz(a)anthracene	0.420	0.00552	0.0111	mg/kg dry	4	0.553	0.00581	75	49 - 126%	---	---	
Benzo(a)pyrene	0.432	0.00830	0.0166	mg/kg dry	4	0.553	0.00861	77	45 - 129%	---	---	
Benzo(b)fluoranthene	0.440	0.00830	0.0166	mg/kg dry	4	0.553	0.00974	78	45 - 132%	---	---	
Benzo(k)fluoranthene	0.447	0.00830	0.0166	mg/kg dry	4	0.553	ND	81	47 - 132%	---	---	
Benzo(g,h,i)perylene	0.369	0.00552	0.0111	mg/kg dry	4	0.553	0.00686	65	43 - 134%	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-----------------	-------	----------	--------------	---------------	-------	--------------	-----	-----------	-------

Batch 0050634 - EPA 3546 Soil

Matrix Spike (0050634-MS2) Prepared: 05/18/20 10:51 Analyzed: 05/18/20 18:19

QC Source Sample: ISM-07\_0520---After Processing (A0E0214-14RE1)

Chrysene	0.438	0.00552	0.0111	mg/kg dry	4	0.553	0.00985	77	50 - 124%	---	---	
Dibenz(a,h)anthracene	0.394	0.00552	0.0111	mg/kg dry	4	0.553	ND	71	45 - 134%	---	---	
Fluoranthene	0.466	0.00552	0.0111	mg/kg dry	4	0.553	0.0129	82	50 - 127%	---	---	
Fluorene	0.461	0.00552	0.0111	mg/kg dry	4	0.553	ND	83	43 - 125%	---	---	
Indeno(1,2,3-cd)pyrene	0.348	0.00552	0.0111	mg/kg dry	4	0.553	0.00606	62	45 - 133%	---	---	
1-Methylnaphthalene	0.454	0.0111	0.0221	mg/kg dry	4	0.553	ND	82	40 - 120%	---	---	
2-Methylnaphthalene	0.462	0.0111	0.0221	mg/kg dry	4	0.553	ND	83	38 - 122%	---	---	
Naphthalene	0.427	0.0111	0.0221	mg/kg dry	4	0.553	ND	77	35 - 123%	---	---	
Phenanthrene	0.461	0.00552	0.0111	mg/kg dry	4	0.553	0.0134	81	50 - 121%	---	---	
Pyrene	0.463	0.00552	0.0111	mg/kg dry	4	0.553	0.0113	82	47 - 127%	---	---	
Carbazole	0.533	0.00830	0.0166	mg/kg dry	4	0.553	ND	96	50 - 123%	---	---	
Pentachlorophenol (PCP)	0.567	0.0552	0.111	mg/kg dry	4	0.553	0.0710	90	25 - 133%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr) Recovery: 78 % Limits: 37-122 % Dilution: 4x</i>												
<i>2-Fluorobiphenyl (Surr) 85 % 44-120 % "</i>												
<i>Phenol-d6 (Surr) 70 % 33-122 % "</i>												
<i>p-Terphenyl-d14 (Surr) 88 % 54-127 % "</i>												
<i>2-Fluorophenol (Surr) 63 % 35-120 % "</i>												
<i>2,4,6-Tribromophenol (Surr) 95 % 39-132 % "</i>												

Matrix Spike Dup (0050634-MSD2) Prepared: 05/18/20 10:51 Analyzed: 05/18/20 18:54

QC Source Sample: ISM-07\_0520---After Processing (A0E0214-14RE1)

EPA 8270E

Acenaphthene	0.401	0.00556	0.0112	mg/kg dry	4	0.558	ND	72	40 - 123%	9	30%	
Acenaphthylene	0.409	0.00556	0.0112	mg/kg dry	4	0.558	ND	73	32 - 132%	9	30%	
Anthracene	0.436	0.00556	0.0112	mg/kg dry	4	0.558	ND	78	47 - 123%	9	30%	
Benz(a)anthracene	0.383	0.00556	0.0112	mg/kg dry	4	0.558	0.00581	68	49 - 126%	9	30%	
Benzo(a)pyrene	0.401	0.00837	0.0167	mg/kg dry	4	0.558	0.00861	70	45 - 129%	7	30%	
Benzo(b)fluoranthene	0.407	0.00837	0.0167	mg/kg dry	4	0.558	0.00974	71	45 - 132%	8	30%	
Benzo(k)fluoranthene	0.408	0.00837	0.0167	mg/kg dry	4	0.558	ND	73	47 - 132%	9	30%	
Benzo(g,h,i)perylene	0.329	0.00556	0.0112	mg/kg dry	4	0.558	0.00686	58	43 - 134%	11	30%	
Chrysene	0.401	0.00556	0.0112	mg/kg dry	4	0.558	0.00985	70	50 - 124%	9	30%	
Dibenz(a,h)anthracene	0.356	0.00556	0.0112	mg/kg dry	4	0.558	ND	64	45 - 134%	10	30%	
Fluoranthene	0.427	0.00556	0.0112	mg/kg dry	4	0.558	0.0129	74	50 - 127%	9	30%	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC % REC	% REC Limits	RPD RPD	RPD Limit	Notes
<b>Batch 0050634 - EPA 3546</b>						<b>Soil</b>						
<b>Matrix Spike Dup (0050634-MSD2)</b>			Prepared: 05/18/20 10:51 Analyzed: 05/18/20 18:54									
<b>QC Source Sample: ISM-07 0520---After Processing (A0E0214-14RE1)</b>												
Fluorene	0.426	0.00556	0.0112	mg/kg dry	4	0.558	ND	76	43 - 125%	8	30%	
Indeno(1,2,3-cd)pyrene	0.326	0.00556	0.0112	mg/kg dry	4	0.558	0.00606	57	45 - 133%	7	30%	
1-Methylnaphthalene	0.409	0.0112	0.0223	mg/kg dry	4	0.558	ND	73	40 - 120%	10	30%	
2-Methylnaphthalene	0.411	0.0112	0.0223	mg/kg dry	4	0.558	ND	74	38 - 122%	12	30%	
Naphthalene	0.382	0.0112	0.0223	mg/kg dry	4	0.558	ND	69	35 - 123%	11	30%	
Phenanthrene	0.422	0.00556	0.0112	mg/kg dry	4	0.558	0.0134	73	50 - 121%	9	30%	
Pyrene	0.421	0.00556	0.0112	mg/kg dry	4	0.558	0.0113	73	47 - 127%	10	30%	
Carbazole	0.466	0.00837	0.0167	mg/kg dry	4	0.558	ND	84	50 - 123%	13	30%	
Dibenzofuran	0.415	0.00556	0.0112	mg/kg dry	4	0.558	ND	74	44 - 120%	8	30%	
Pentachlorophenol (PCP)	0.522	0.0556	0.112	mg/kg dry	4	0.558	0.0710	81	25 - 133%	8	30%	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 69 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 4x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>77 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>61 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>83 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>55 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>87 %</i>		<i>39-132 %</i>		<i>"</i>						

Apex Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Lisa Domenighini, Client Services Manager



AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

**GSI Water Solutions**  
55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: **JH Baxter-Eugene ISM**  
Project Number: **302**  
Project Manager: **Josh Bale**

**Report ID:**  
A0E0214 - 07 13 20 0843

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0060509 - EPA 3546</b>						<b>Soil</b>						
<b>Blank (0060509-BLK1)</b>		Prepared: 06/15/20 10:33 Analyzed: 06/15/20 16:53										
<b>EPA 8270E</b>												
Acenaphthene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.00188	0.00375	mg/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.00188	0.00375	mg/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.00188	0.00375	mg/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.00250	0.00500	mg/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.00250	0.00500	mg/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	0.00250	0.00500	mg/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Carbazole	ND	0.00188	0.00375	mg/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	0.00125	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	0.0188	0.0375	mg/kg wet	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	0.0125	0.0250	mg/kg wet	1	---	---	---	---	---	---	
Diethylphthalate	ND	0.0125	0.0250	mg/kg wet	1	---	---	---	---	---	---	
Dimethylphthalate	ND	0.0125	0.0250	mg/kg wet	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	0.0125	0.0250	mg/kg wet	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	0.0125	0.0250	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 77 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>72 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>76 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>95 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>72 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>77 %</i>		<i>39-132 %</i>		<i>"</i>						

Q-41

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager





AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0060509 - EPA 3546</b>						<b>Soil</b>						
<b>LCS (0060509-BS1)</b>		Prepared: 06/15/20 10:33 Analyzed: 06/15/20 17:29										
<b>EPA 8270E</b>												
Acenaphthene	0.394	0.00133	0.00267	mg/kg wet	1	0.533	---	74	40 - 123%	---	---	
Acenaphthylene	0.417	0.00133	0.00267	mg/kg wet	1	0.533	---	78	32 - 132%	---	---	
Anthracene	0.436	0.00133	0.00267	mg/kg wet	1	0.533	---	82	47 - 123%	---	---	
Benz(a)anthracene	0.453	0.00133	0.00267	mg/kg wet	1	0.533	---	85	49 - 126%	---	---	
Benzo(a)pyrene	0.460	0.00200	0.00400	mg/kg wet	1	0.533	---	86	45 - 129%	---	---	
Benzo(b)fluoranthene	0.443	0.00200	0.00400	mg/kg wet	1	0.533	---	83	45 - 132%	---	---	
Benzo(k)fluoranthene	0.436	0.00200	0.00400	mg/kg wet	1	0.533	---	82	47 - 132%	---	---	
Benzo(g,h,i)perylene	0.461	0.00133	0.00267	mg/kg wet	1	0.533	---	86	43 - 134%	---	---	
Chrysene	0.435	0.00133	0.00267	mg/kg wet	1	0.533	---	82	50 - 124%	---	---	
Dibenz(a,h)anthracene	0.460	0.00133	0.00267	mg/kg wet	1	0.533	---	86	45 - 134%	---	---	
Fluoranthene	0.478	0.00133	0.00267	mg/kg wet	1	0.533	---	90	50 - 127%	---	---	
Fluorene	0.443	0.00133	0.00267	mg/kg wet	1	0.533	---	83	43 - 125%	---	---	
Indeno(1,2,3-cd)pyrene	0.458	0.00133	0.00267	mg/kg wet	1	0.533	---	86	45 - 133%	---	---	
1-Methylnaphthalene	0.459	0.00267	0.00533	mg/kg wet	1	0.533	---	86	40 - 120%	---	---	
2-Methylnaphthalene	0.451	0.00267	0.00533	mg/kg wet	1	0.533	---	84	38 - 122%	---	---	
Naphthalene	0.387	0.00267	0.00533	mg/kg wet	1	0.533	---	72	35 - 123%	---	---	
Phenanthrene	0.393	0.00133	0.00267	mg/kg wet	1	0.533	---	74	50 - 121%	---	---	
Pyrene	0.468	0.00133	0.00267	mg/kg wet	1	0.533	---	88	47 - 127%	---	---	
Carbazole	0.417	0.00200	0.00400	mg/kg wet	1	0.533	---	78	50 - 123%	---	---	
Dibenzofuran	0.415	0.00133	0.00267	mg/kg wet	1	0.533	---	78	44 - 120%	---	---	
Bis(2-ethylhexyl)phthalate	0.427	0.0200	0.0400	mg/kg wet	1	0.533	---	80	51 - 133%	---	---	
Butyl benzyl phthalate	0.444	0.0133	0.0267	mg/kg wet	1	0.533	---	83	48 - 132%	---	---	
Diethylphthalate	0.476	0.0133	0.0267	mg/kg wet	1	0.533	---	89	50 - 124%	---	---	
Dimethylphthalate	0.461	0.0133	0.0267	mg/kg wet	1	0.533	---	86	48 - 124%	---	---	
Di-n-butylphthalate	0.457	0.0133	0.0267	mg/kg wet	1	0.533	---	86	51 - 128%	---	---	
Di-n-octyl phthalate	0.454	0.0133	0.0267	mg/kg wet	1	0.533	---	85	45 - 140%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>72 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>88 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>92 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>76 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>99 %</i>		<i>39-132 %</i>		<i>"</i>						

Q-41

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager





AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0060509 - EPA 3546</b>						<b>Soil</b>						
<b>Duplicate (0060509-DUP2)</b>		Prepared: 06/15/20 10:33				Analyzed: 06/16/20 21:30				<b>H-08, R-04</b>		
<b>QC Source Sample: ISM-08 0520---After Processing (A0E0214-16RE2)</b>												
<b>EPA 8270E</b>												
Acenaphthene	ND	0.138	0.276	mg/kg dry	100	---	ND	---	---	---	30%	
Acenaphthylene	ND	0.138	0.276	mg/kg dry	100	---	ND	---	---	---	30%	
Anthracene	ND	0.138	0.276	mg/kg dry	100	---	0.186	---	---	***	30%	Q-04
Benz(a)anthracene	ND	0.138	0.276	mg/kg dry	100	---	0.244	---	---	***	30%	Q-04
Benzo(a)pyrene	<b>0.270</b>	0.207	0.414	mg/kg dry	100	---	0.499	---	---	<b>59</b>	<b>30%</b>	Q-04, J
Benzo(b)fluoranthene	<b>0.350</b>	0.207	0.414	mg/kg dry	100	---	0.928	---	---	<b>90</b>	<b>30%</b>	Q-04, J
Benzo(k)fluoranthene	<b>0.209</b>	0.207	0.414	mg/kg dry	100	---	0.351	---	---	<b>51</b>	<b>30%</b>	Q-04, J
Benzo(g,h,i)perylene	ND	0.138	0.276	mg/kg dry	100	---	0.408	---	---	***	30%	Q-04
Chrysene	ND	0.138	0.276	mg/kg dry	100	---	0.510	---	---	***	30%	Q-04
Dibenz(a,h)anthracene	ND	0.138	0.276	mg/kg dry	100	---	ND	---	---	---	30%	
Fluoranthene	ND	0.138	0.276	mg/kg dry	100	---	0.484	---	---	***	30%	Q-04
Fluorene	ND	0.138	0.276	mg/kg dry	100	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	0.138	0.276	mg/kg dry	100	---	0.385	---	---	***	30%	Q-04
1-Methylnaphthalene	ND	0.276	0.552	mg/kg dry	100	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	0.276	0.552	mg/kg dry	100	---	ND	---	---	---	30%	
Naphthalene	ND	0.276	0.552	mg/kg dry	100	---	ND	---	---	---	30%	
Phenanthrene	ND	0.138	0.276	mg/kg dry	100	---	0.289	---	---	***	30%	Q-04
Pyrene	<b>0.139</b>	0.138	0.276	mg/kg dry	100	---	0.477	---	---	<b>110</b>	<b>30%</b>	Q-04, J
Carbazole	ND	0.207	0.414	mg/kg dry	100	---	0.218	---	---	***	30%	Q-04
Dibenzofuran	ND	0.138	0.276	mg/kg dry	100	---	ND	---	---	---	30%	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 15 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 100x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>20 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>3 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>27 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>3 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>160 %</i>		<i>39-132 %</i>		<i>"</i>						

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	Report ID: <b>A0E0214 - 07 13 20 0843</b>
---	---	--

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Total Metals by EPA 6020A (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0050946 - EPA 3051A</b>						<b>Soil</b>						
<b>Blank (0050946-BLK1)</b>		Prepared: 05/27/20 09:44 Analyzed: 05/27/20 16:24										
<u>EPA 6020A</u>												
Arsenic	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	---
Chromium	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	---
Copper	ND	0.962	1.92	mg/kg wet	10	---	---	---	---	---	---	---
Zinc	ND	1.92	3.85	mg/kg wet	10	---	---	---	---	---	---	---
<b>LCS (0050946-BS1)</b>		Prepared: 05/27/20 09:44 Analyzed: 05/27/20 16:34										
<u>EPA 6020A</u>												
Arsenic	47.7	0.500	1.00	mg/kg wet	10	50.0	---	95	80 - 120%	---	---	---
Chromium	45.3	0.500	1.00	mg/kg wet	10	50.0	---	91	80 - 120%	---	---	---
Copper	47.3	1.00	2.00	mg/kg wet	10	50.0	---	95	80 - 120%	---	---	---
Zinc	45.9	2.00	4.00	mg/kg wet	10	50.0	---	92	80 - 120%	---	---	---
<b>Duplicate (0050946-DUP1)</b>		Prepared: 05/27/20 09:44 Analyzed: 05/27/20 17:19										
<u>QC Source Sample: ISM-07_0520---After Processing (A0E0214-14RE1)</u>												
<u>EPA 6020A</u>												
Arsenic	<b>9.94</b>	0.528	1.06	mg/kg dry	10	---	10.8	---	---	8	40%	---
Chromium	<b>37.5</b>	0.528	1.06	mg/kg dry	10	---	45.7	---	---	20	40%	---
Copper	<b>42.0</b>	1.06	2.11	mg/kg dry	10	---	46.8	---	---	11	40%	---
Zinc	<b>101</b>	2.11	4.23	mg/kg dry	10	---	110	---	---	8	40%	---
<b>Duplicate (0050946-DUP2)</b>		Prepared: 05/27/20 09:44 Analyzed: 05/27/20 17:24										
<u>QC Source Sample: ISM-07_0520---After Processing (A0E0214-14RE1)</u>												
<u>EPA 6020A</u>												
Arsenic	<b>10.0</b>	0.534	1.07	mg/kg dry	10	---	10.8	---	---	7	40%	---
Chromium	<b>40.4</b>	0.534	1.07	mg/kg dry	10	---	45.7	---	---	12	40%	---
Copper	<b>43.3</b>	1.07	2.13	mg/kg dry	10	---	46.8	---	---	8	40%	---
Zinc	<b>103</b>	2.13	4.27	mg/kg dry	10	---	110	---	---	6	40%	---
<b>Matrix Spike (0050946-MS1)</b>		Prepared: 05/27/20 09:44 Analyzed: 05/28/20 12:46										
<u>QC Source Sample: ISM-07_0520---After Processing (A0E0214-14RE1)</u>												
<u>EPA 6020A</u>												
Arsenic	59.4	0.517	1.03	mg/kg dry	10	51.7	10.8	94	75 - 125%	---	---	---
Chromium	88.2	0.517	1.03	mg/kg dry	10	51.7	45.7	82	75 - 125%	---	---	---

Apex Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Lisa Domenighini, Client Services Manager



**Apex Laboratories, LLC**

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Total Metals by EPA 6020A (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0050946 - EPA 3051A</b>						<b>Soil</b>						
<b>Matrix Spike (0050946-MS1)</b>		Prepared: 05/27/20 09:44 Analyzed: 05/28/20 12:46										
<b>QC Source Sample: ISM-07_0520---After Processing (A0E0214-14RE1)</b>												
Copper	95.0	1.03	2.07	mg/kg dry	10	51.7	46.8	93	75 - 125%	---	---	
Zinc	156	2.07	4.14	mg/kg dry	10	51.7	110	90	75 - 125%	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Total Metals by EPA 6020A (ICPMS)**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0060591 - EPA 3051A</b>						<b>Soil</b>						
<b>Blank (0060591-BLK1)</b>		Prepared: 06/17/20 10:25 Analyzed: 06/18/20 16:11										
<u>EPA 6020A</u>												
Arsenic	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	---
Chromium	ND	0.500	1.00	mg/kg wet	10	---	---	---	---	---	---	---
Copper	ND	1.00	2.00	mg/kg wet	10	---	---	---	---	---	---	---
Zinc	ND	2.00	4.00	mg/kg wet	10	---	---	---	---	---	---	---
<b>LCS (0060591-BS1)</b>		Prepared: 06/17/20 10:25 Analyzed: 06/18/20 16:22										
<u>EPA 6020A</u>												
Arsenic	50.6	0.500	1.00	mg/kg wet	10	50.0	---	101	80 - 120%	---	---	---
Chromium	47.2	0.500	1.00	mg/kg wet	10	50.0	---	94	80 - 120%	---	---	---
Copper	50.5	1.00	2.00	mg/kg wet	10	50.0	---	101	80 - 120%	---	---	---
Zinc	47.2	2.00	4.00	mg/kg wet	10	50.0	---	94	80 - 120%	---	---	---

Apex Laboratories

Lisa Domenighini, Client Services Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



AMENDED REPORT

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street  
 Tigard, OR 97223  
 503-718-2323  
 ORELAP ID: OR100062

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Demand Parameters**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0050720 - PSEP-5310B TOC</b>						<b>Soil</b>						
<b>Blank (0050720-BLK1)</b>		Prepared: 05/20/20 08:53 Analyzed: 05/20/20 19:50										
<u>PSEP/SM 5310B MOD</u>												
Total Organic Carbon	ND	0.020	0.020	%	1	---	---	---	---	---	---	B-02
<b>Blank (0050720-BLK2)</b>		Prepared: 05/20/20 08:53 Analyzed: 05/21/20 20:36										
<u>PSEP/SM 5310B MOD</u>												
Total Organic Carbon	ND	0.020	0.020	%	1	---	---	---	---	---	---	
<b>LCS (0050720-BS1)</b>		Prepared: 05/20/20 08:53 Analyzed: 05/20/20 20:01										
<u>PSEP/SM 5310B MOD</u>												
Total Organic Carbon	10000			mg/kg	1	10000	---	102	90 - 110%	---	---	B-02
<b>Duplicate (0050720-DUP3)</b>		Prepared: 05/20/20 08:53 Analyzed: 05/21/20 12:18										
<u>QC Source Sample: ISM-03 0520---After Processing (A0E0214-06RE1)</u>												
<u>PSEP/SM 5310B MOD</u>												
Total Organic Carbon	5.5	0.020	0.020	%	1	---	5.4	---	---	3	20%	B-02, Q-16
<b>Duplicate (0050720-DUP4)</b>		Prepared: 05/20/20 08:53 Analyzed: 05/21/20 12:29										
<u>QC Source Sample: ISM-03 0520---After Processing (A0E0214-06RE1)</u>												
<u>PSEP/SM 5310B MOD</u>												
Total Organic Carbon	5.6	0.020	0.020	%	1	---	5.4	---	---	4	20%	B-02, Q-16

Apex Laboratories

Lisa Domenighini, Client Services Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



**Apex Laboratories, LLC**

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Percent Dry Weight**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0050635 - Total Solids (Dry Weight)</b>						<b>Soil</b>						
<b>Duplicate (0050635-DUP5)</b>		Prepared: 05/18/20 18:47 Analyzed: 05/19/20 09:00										
<b>QC Source Sample: ISM-07 0520---After Processing (A0E0214-14)</b>												
<b>EPA 8000C</b>												
% Solids	94.7	1.00	1.00	%	1	---	94.6	---	---	0.06	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



**Apex Laboratories, LLC**

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Percent Dry Weight**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0050724 - Total Solids (Dry Weight)</b>						<b>Soil</b>						

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

Apex Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Lisa Domenighini, Client Services Manager





**Apex Laboratories, LLC**

6700 S.W. Sandburg Street  
 Tigard, OR 97223  
 503-718-2323  
 ORELAP ID: OR100062

AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Percent Dry Weight**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0051032 - Total Solids (Dry Weight)</b>						<b>Soil</b>						
<b>Duplicate (0051032-DUP1)</b>		Prepared: 05/28/20 15:43 Analyzed: 05/29/20 08:46										
<b>QC Source Sample: ISM-01_0520---After Processing (A0E0214-02)</b>												
<b>EPA 8000C</b>												
% Solids	<b>94.8</b>	1.00	1.00	%	1	---	94.8	---	---	0.03	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

Apex Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Lisa Domenighini, Client Services Manager



Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 0060584 - Total Solids (Dry Weight)</b>						<b>Soil</b>						
<b>Duplicate (0060584-DUP1)</b>		Prepared: 06/17/20 08:54 Analyzed: 06/18/20 08:16										
<b>QC Source Sample: ISM-05_0520---After Processing (A0E0214-10)</b>												
<b>EPA 8000C</b>												
% Solids	94.6	1.00	1.00	%	1	---	94.6	---	---	0.01	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager



AMENDED REPORT

**GSI Water Solutions**  
55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: **JH Baxter-Eugene ISM**  
Project Number: **302**  
Project Manager: **Josh Bale**

**Report ID:**  
**A0E0214 - 07 13 20 0843**

**SAMPLE PREPARATION INFORMATION**

**Semivolatile Organic Compounds by EPA 8270E**

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 0050634</u>							
A0E0214-02RE2	Soil	EPA 8270E	05/06/20 18:00	05/18/20 10:51	15.19g/2mL	15g/2mL	0.99
A0E0214-04RE2	Soil	EPA 8270E	05/05/20 11:30	05/18/20 10:51	15.21g/2mL	15g/2mL	0.99
A0E0214-06	Soil	EPA 8270E	05/07/20 12:30	05/18/20 10:51	15.16g/2mL	15g/2mL	0.99
A0E0214-08	Soil	EPA 8270E	05/06/20 13:00	05/18/20 10:51	15.22g/2mL	15g/2mL	0.99
A0E0214-12	Soil	EPA 8270E	05/07/20 15:30	05/18/20 10:51	15.29g/2mL	15g/2mL	0.98
A0E0214-14RE1	Soil	EPA 8270E	05/05/20 14:30	05/18/20 10:51	15.21g/2mL	15g/2mL	0.99
A0E0214-18	Soil	EPA 8270E	05/06/20 18:00	05/18/20 10:51	15.21g/5mL	15g/2mL	2.47
A0E0214-20	Soil	EPA 8270E	05/06/20 14:00	05/18/20 10:51	15.44g/5mL	15g/2mL	2.43
<u>Batch: 0060509</u>							
A0E0214-16RE2	Soil	EPA 8270E	05/05/20 16:30	06/15/20 10:35	15.45g/2mL	15g/2mL	0.97

**Total Metals by EPA 6020A (ICPMS)**

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 0050946</u>							
A0E0214-02	Soil	EPA 6020A	05/06/20 18:00	05/27/20 09:44	0.476g/50mL	0.5g/50mL	1.05
A0E0214-04	Soil	EPA 6020A	05/05/20 11:30	05/27/20 09:44	0.478g/50mL	0.5g/50mL	1.05
A0E0214-06	Soil	EPA 6020A	05/07/20 12:30	05/27/20 09:44	0.459g/50mL	0.5g/50mL	1.09
A0E0214-08	Soil	EPA 6020A	05/06/20 13:00	05/27/20 09:44	0.472g/50mL	0.5g/50mL	1.06
A0E0214-12	Soil	EPA 6020A	05/07/20 15:30	05/27/20 09:44	0.513g/50mL	0.5g/50mL	0.98
A0E0214-14RE1	Soil	EPA 6020A	05/05/20 14:30	05/27/20 09:44	0.454g/50mL	0.5g/50mL	1.10
A0E0214-18	Soil	EPA 6020A	05/06/20 18:00	05/27/20 09:44	0.468g/50mL	0.5g/50mL	1.07
A0E0214-20	Soil	EPA 6020A	05/06/20 14:00	05/27/20 09:44	0.463g/50mL	0.5g/50mL	1.08
<u>Batch: 0060591</u>							
A0E0214-10	Soil	EPA 6020A	05/07/20 10:00	06/17/20 10:25	0.471g/50mL	0.5g/50mL	1.06
A0E0214-16	Soil	EPA 6020A	05/05/20 16:30	06/17/20 10:25	0.488g/50mL	0.5g/50mL	1.02

**Demand Parameters**

Prep: PSEP-5310B TOC

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 0050720</u>							
A0E0214-06RE1	Soil	PSEP/SM 5310B MOD	05/07/20 12:30	05/20/20 08:53			NA

Apex Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> <b>A0E0214 - 07 13 20 0843</b>
---	---	---

**SAMPLE PREPARATION INFORMATION**

Demand Parameters

<u>Prep: PSEP-5310B TOC</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A0E0214-12	Soil	PSEP/SM 5310B MOD	05/07/20 15:30	05/20/20 08:53			NA

Percent Dry Weight

<u>Prep: Total Solids (Dry Weight)</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 0050635</u>							
A0E0214-14	Soil	EPA 8000C	05/05/20 14:30	05/18/20 18:47			NA
<u>Batch: 0050724</u>							
A0E0214-06	Soil	EPA 8000C	05/07/20 12:30	05/20/20 19:27			NA
<u>Batch: 0051032</u>							
A0E0214-02	Soil	EPA 8000C	05/06/20 18:00	05/28/20 15:43			NA
A0E0214-04	Soil	EPA 8000C	05/05/20 11:30	05/28/20 15:43			NA
A0E0214-08	Soil	EPA 8000C	05/06/20 13:00	05/28/20 15:43			NA
A0E0214-12	Soil	EPA 8000C	05/07/20 15:30	05/28/20 15:43			NA
A0E0214-18	Soil	EPA 8000C	05/06/20 18:00	05/28/20 15:43			NA
A0E0214-20	Soil	EPA 8000C	05/06/20 14:00	05/28/20 15:43			NA
<u>Batch: 0060584</u>							
A0E0214-10	Soil	EPA 8000C	05/07/20 10:00	06/17/20 08:57			NA
A0E0214-16	Soil	EPA 8000C	05/05/20 16:30	06/17/20 08:57			NA



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

**QUALIFIER DEFINITIONS**

**Client Sample and Quality Control (QC) Sample Qualifier Definitions:**

**Apex Laboratories**

- B-02** Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
- H-08** Sample hold time extended by freezing at -18 degrees C. Total time at 4 degrees C was less than the standard hold time.
- J** Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
- M-05** Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
- Q-04** Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
- Q-05** Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
- Q-16** Reanalysis of an original Batch QC sample.
- Q-41** Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- Q-42** Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
- R-04** Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.
- S-05** Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

Apex Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

REPORTING NOTES AND CONVENTIONS:

**Abbreviations:**

- DET Analyte DETECTED at or above the detection or reporting limit.
- ND Analyte NOT DETECTED at or above the detection or reporting limit.
- NR Result Not Reported.
- RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

**Detection Limits: Limit of Detection (LOD)**

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).  
If no value is listed ('----'), then the data has not been evaluated below the Reporting Limit.

**Reporting Limits: Limit of Quantitation (LOQ)**

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

**Reporting Conventions:**

- Basis: Results for soil samples are generally reported on a 100% dry weight basis. The Result Basis is listed following the units as "dry", "wet", or "" (blank) designation.
  - "dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")  
See Percent Solids section for details of dry weight analysis.
  - "wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
  - "" Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

**QC Source:**

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

**Miscellaneous Notes:**

- " --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- " \*\*\* " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

**Blanks:**

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to 1/2 the Reporting Limit (RL).  
-For Blank hits falling between 1/2 the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.  
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.  
For further details, please request a copy of this document.

Apex Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

REPORTING NOTES AND CONVENTIONS (Cont.):

**Blanks (Cont.):**

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

**Preparation Notes:**

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

**Sampling and Preservation Notes:**

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Lisa Domenighini, Client Services Manager





AMENDED REPORT

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Table with 3 columns: Client info (GSI Water Solutions), Project info (JH Baxter-Eugene ISM), and Report ID (A0E0214 - 07 13 20 0843).

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation)
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Table header with columns: Matrix, Analysis, TNI\_ID, Analyte, TNI\_ID, Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation. Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Handwritten signature of Lisa Domenighini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager





AMENDED REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **JH Baxter-Eugene ISM**

Project Number: **302**

Project Manager: **Josh Bale**

Report ID:

A0E0214 - 07 13 20 0843

**CHAIN OF CUSTODY**

Company: **GSI** Lab # **A0E0214** Project # **302** COC **Z** of **Z**

Address: **55 SW Yamhill St, Portland, OR 97204** Phone: **503.739.6799** Email: **jbale@gsiws.com**

Project Name: **Baxter**

Project Mgr: **Josh Bale**

Site Location: **OR WA CA**

Sampled By: **GSI/Baxter**

ANALYSIS REQUEST

LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-DX	NWTPH-CX	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vol Full List	8082 PCBs	8081 Pest	RCRA Metals (8)	Priority Metals (13)	Cr, Co, Cu, Fe, Pb, Hg, Mn, Ni, Se, Ag, Na, Ti, V, Zn	TOTAL DISS. TCLP	TCLP Metals (8)	Archive
ISM-907-0520	NA	NA	D	0																	X
EB-03-0520	07/13/20	13:50	N	3																	X

SPECIAL INSTRUCTIONS: For ISM-907-0520, please create lab duplicate with this sample ID after Japanese Slipcase is done on sample ISM-07-0520. Lab duplicate is DIF ONLY

Normal Turn Around Time (TAT) = 0 Business Days

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: **Ken Fork** Date: **5/8/20** Time: **7:35**

RECEIVED BY: Signature: **Apex** Date: \_\_\_\_\_ Time: \_\_\_\_\_

Printed Name: **Ken Fork** Printed Name: \_\_\_\_\_ Company: **GSI** Company: \_\_\_\_\_

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Lisa Domenighini*

Lisa Domenighini, Client Services Manager



AMENDED REPORT

<b>GSI Water Solutions</b> 55 SW Yamhill St, Ste 300 Portland, OR 97209	Project: <b>JH Baxter-Eugene ISM</b> Project Number: <b>302</b> Project Manager: <b>Josh Bale</b>	<b>Report ID:</b> A0E0214 - 07 13 20 0843
---	---	--

**APEX LABS COOLER RECEIPT FORM**

**Client:** GSI Element WO#: A0 E0214

**Project/Project #:** Baxter / 302

**Delivery Info:**  
Date/time received: 5/8/20 @ 7:35 By: WS  
Delivered by: Apex Client  ESS FedEx UPS Swift Senvoy SDS Other

**Cooler Inspection** Date/time inspected: 5/8/20 @ 7:35 By: WS  
Chain of Custody included? Yes  No \_\_\_ Custody seals? Yes \_\_\_ No   
Signed/dated by client? Yes  No \_\_\_  
Signed/dated by Apex? Yes  No \_\_\_

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>2.6</u>	<u>4.2</u>	<u>3.2</u>				
Received on ice? (Y/N)	<u>Y</u>	<u>Y</u>	<u>Y</u>				
Temp. blanks? (Y/N)	<u>Y</u>	<u>Y</u>	<u>Y</u>				
Ice type: (Gel/Real/Other)	<u>Real</u>	<u>Real</u>	<u>Real</u>				
Condition:	<u>Good</u>	<u>Good</u>	<u>Good</u>				

Cooler out of temp? (Y/N) Possible reason why: \_\_\_\_\_  
If some coolers are in temp and some out, were green dots applied to out of temperature samples? Yes/No/NA  
Out of temperature samples form initiated? Yes/No/NA

**Samples Inspection:** Date/time inspected: 5/8/20 @ 1515 By: WS  
All samples intact? Yes  No \_\_\_ Comments: \_\_\_\_\_  
Bottle labels/COCs agree? Yes  No \_\_\_ Comments: \_\_\_\_\_  
COC/container discrepancies form initiated? Yes \_\_\_ No   
Containers/volumes received appropriate for analysis? Yes  No \_\_\_ Comments: \_\_\_\_\_  
Do VOA vials have visible headspace? Yes \_\_\_ No \_\_\_ NA   
Comments: \_\_\_\_\_  
Water samples: pH checked: Yes  No \_\_\_ NA \_\_\_ pH appropriate? Yes  No \_\_\_ NA \_\_\_  
Comments: \_\_\_\_\_

**Additional information:**  
\_\_\_\_\_  
\_\_\_\_\_

Labeled by: (WS) Witness: KRB Cooler Inspected by: (WS) See Project Contact Form: Y

*Lisa Domenighini*



June 10, 2020

Mr. Philip Nerenberg  
Apex Laboratories  
6700 SW Sandburg Street  
Portland, Oregon 97223

Re: 2018 DXN & PCB IDIQ  
Work Order: 16561  
SDG: A0E0214

Dear Mr. Nerenberg:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 20, 2020. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,



Cynde Larkins  
Project Manager

Enclosures

SUBCONTRACT ORDER

Apex Laboratories

A0E0214

WAD  
5/14/2020

SENDING LABORATORY:

Apex Laboratories  
6700 S.W. Sandburg Street  
Tigard, OR 97223  
Phone: (503) 718-2323  
Fax: (503) 336-0745  
Project Manager: Lisa Domenighini

RECEIVING LABORATORY:

Cape Fear Analytical, LLC  
3306 Kitty Hawk Rd Suite 120  
Wilmington, NC 28405  
Phone : (910) 795-0421  
Fax: -

CFA WO#16561

Sample Name: ISM-01\_0520---After Processing Soil Sampled: 05/06/20 18:00 (A0E0214-02)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	06/01/20 17:00	11/02/20 18:00	
Containers Supplied: (B)2 oz Glass Jar			

Sample Name: ISM-02\_0520---After Processing Soil Sampled: 05/05/20 11:30 (A0E0214-04)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	06/01/20 17:00	11/01/20 11:30	
Containers Supplied: (B)2 oz Glass Jar			

Sample Name: ISM-03\_0520---After Processing Soil Sampled: 05/07/20 12:30 (A0E0214-06)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	06/01/20 17:00	11/03/20 12:30	
Containers Supplied: (B)2 oz Glass Jar			

Sample Name: ISM-04\_0520---After Processing Soil Sampled: 05/06/20 13:00 (A0E0214-08)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	06/01/20 17:00	11/02/20 13:00	
Containers Supplied: (B)2 oz Glass Jar			

Standard TAT

temp. = 3.4°C

Released By: *[Signature]* Date: 5/18/20 15:40  
 Received By: *[Signature]* Date: 5/20/20 10:00

Released By: *[Signature]* Date: *[Blank]*  
 Received By: *[Signature]* Date: *[Blank]*

Fed Ex (Shipper)

Fed Ex (Shipper)

SUBCONTRACT ORDER

Apex Laboratories

A0E0214

CFA W0#16561

Sample Name: ISM-06\_0520---After Processing Soil Sampled: 05/07/20 15:30 (A0E0214-12)

Analysis Due Expires Comments

1613B Dioxins and Furans (SUB) 06/01/20 17:00 11/03/20 15:30

Containers Supplied: (B)2 oz Glass Jar

Sample Name: ISM-07\_0520---After Processing Soil Sampled: 05/05/20 14:30 (A0E0214-14)

Analysis Due Expires Comments

1613B Dioxins and Furans (SUB) 06/01/20 17:00 11/01/20 14:30 lab duplicate for 214-21

Containers Supplied: (B)2 oz Glass Jar

Sample Name: ISM-104\_0520---After Processing Soil Sampled: 05/06/20 18:00 (A0E0214-18)

Analysis Due Expires Comments

1613B Dioxins and Furans (SUB) 06/01/20 17:00 11/02/20 18:00

Containers Supplied: (B)2 oz Glass Jar

Sample Name: ISM-204\_0520---After Processing Soil Sampled: 05/06/20 14:00 (A0E0214-20)

Analysis Due Expires Comments

1613B Dioxins and Furans (SUB) 06/01/20 17:00 11/02/20 14:00

Containers Supplied: (B)2 oz Glass Jar

Create from sample 13

Sample Name: ISM-907\_0520---After Processing Soil Sampled: 05/05/20 14:30 (A0E0214-21)

Analysis Due Expires Comments

1613B Dioxins and Furans (SUB) 06/01/20 17:00 11/01/20 14:30

Containers Supplied: (A)2 oz Glass Jar

Released By [Signature] Date 5/18/20 15:40 Received By [Signature] Date 5/20/20 10:10

Fed Ex (Shipper)

Fed Ex (Shipper)



**SAMPLE RECEIPT CHECKLIST**  
Cape Fear Analytical

Client: <u>Apex</u>	Work Order: <u>16561</u>
Shipping Company: <u>Fedex</u>	Date/Time Received: <u>5/20/20 10:00</u>

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			<input checked="" type="checkbox"/>
Samples identified as Foreign Soil?			<input checked="" type="checkbox"/>

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?			<input checked="" type="checkbox"/>
Samples < 2x background?			<input checked="" type="checkbox"/>

\* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			<input checked="" type="checkbox"/>

Air Witness: \_\_\_\_\_

Sample Receipt Criteria		Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Custody seal/s present on cooler?			<input checked="" type="checkbox"/>	Seal intact? Yes No
3	Chain of Custody documents included with shipment?	<input checked="" type="checkbox"/>			
4	Samples requiring cold preservation within 0-6°C?	<input checked="" type="checkbox"/>			Preservation Method: ice bags blue ice dry ice none other (describe) <span style="float:right">Temperature Blank present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span> <u>3.2 + 0.2 = 3.40</u>
5	Aqueous samples found to have visible solids?			<input checked="" type="checkbox"/>	Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?			<input checked="" type="checkbox"/>	Sample IDs, containers affected and pH observed: if preservative added, Lot#:
7	Samples requiring preservation have no residual chlorine?			<input checked="" type="checkbox"/>	Sample IDs, containers affected: if preservative added, Lot#:
8	Samples received within holding time?	<input checked="" type="checkbox"/>			Sample IDs, tests affected:
9	Sample IDs on COC match IDs on containers?	<input checked="" type="checkbox"/>			Sample IDs, containers affected:
10	Date & time of COC match date & time on containers?	<input checked="" type="checkbox"/>			Sample IDs, containers affected:
11	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			List type and number of containers / Sample IDs, containers affected: <u>Received 9 - 2oz clear</u>
12	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			

Comments:

Checklist performed by: Initials: PL Date: 5/20/20

# **High Resolution Dioxins and Furans Analysis**

# Case Narrative

**HDOX Case Narrative  
Apex Laboratories (APEX)  
SDG A0E0214  
Work Order 16561**

**Method/Analysis Information**

**Product:** Dioxins/Furans by EPA 1613B-3546 in Solids  
**Analytical Method:** EPA Method 1613B  
**Extraction Method:** EPA Method 1613B-3546  
**Analytical Batch Number:** 43904, 43953  
**Clean Up Batch Number:** 43903, 43952  
**Extraction Batch Number:** 43902, 43951

**Sample Analysis**

Samples were received at 3.4°C (16561001, 16561002, 16561003, 16561004, 16561005, 16561006, 16561007, 16561008, 16561009). The following samples were analyzed using the analytical protocol as established in Method 1613B:

<b>Sample ID</b>	<b>Client ID</b>
12026685	Method Blank (MB)
12026686	Laboratory Control Sample (LCS)
12026687	Laboratory Control Sample Duplicate (LCSD)
12026716	Method Blank (MB)
12026717	Laboratory Control Sample (LCS)
12026718	Laboratory Control Sample Duplicate (LCSD)
12026719	16561002(ISM-02_0520---After Processing) Matrix Spike (MS)
12026720	16561002(ISM-02_0520---After Processing) Matrix Spike Duplicate (MSD)
16561001	ISM-01_0520---After Processing
16561002	ISM-02_0520---After Processing
16561003	ISM-03_0520---After Processing
16561004	ISM-04_0520---After Processing
16561005	ISM-06_0520---After Processing
16561006	ISM-07_0520---After Processing
16561007	ISM-104_0520---After Processing
16561008	ISM-204_0520---After Processing
16561009	ISM-907_0520---After Processing

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 16.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

### **Calibration Information**

#### **Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

#### **Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

### **Quality Control (QC) Information**

#### **Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

#### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

#### **Surrogate Recoveries**

All surrogate recoveries were within the established acceptance criteria for this SDG.

#### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

#### **Laboratory Control Sample Duplicate (LCSD) Recovery**

The LCSD spike recoveries met the acceptance limits.

#### **LCS/LCSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the LCS and LCSD met the acceptance limits.

#### **QC Sample Designation**

Sample 16561002 (ISM-02\_0520---After Processing)- Batch 43953 was selected for analysis as the matrix spike and matrix spike duplicate.

#### **Matrix Spike (MS) Recovery Statement**

The MS recoveries were within the established acceptance limits.

#### **Matrix Spike Duplicate (MSD) Recovery Statement**

One analyte recovered outside the acceptance limits. 12026720 (ISM-02\_0520---After Processing)- Batch 43953.

### **MS/MSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the MS and MSD met the acceptance limits.

### **Technical Information**

#### **Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

#### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

#### **Sample Dilutions**

The samples required dilutions due to over-range target analytes. Sample extracts were diluted 50x and re-spiked with surrogates; sample concentrations are not recovery-corrected. 16561003 (ISM-03\_0520---After Processing) and 16561005 (ISM-06\_0520---After Processing)- Batch 43904.

#### **Sample Re-extraction/Re-analysis**

The samples in Batch 43953 were re-extracted in order to confirm surrogate failures. A 1g aliquot was used for the re-extraction due to over-range target analytes. Batch 43953.

### **Miscellaneous Information**

#### **Nonconformance (NCR) Documentation**

A NCR was not required for this SDG.

#### **Manual Integrations**

Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

Manual integrations were required for data files in this SDG.

#### **Sample preparation**

No difficulties were encountered during sample preparation.

### **Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These

hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

# Sample Data Summary



# Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

## Qualifier Definition Report for

APEX001 Apex Laboratories

Client SDG: A0E0214 CFA Work Order: 16561

### The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- B The target analyte was detected in the associated blank.
- E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J Value is estimated
- K Estimated Maximum Possible Concentration
- U Analyte was analyzed for, but not detected above the specified detection limit.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

### Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: 

Name: Heather Patterson

Date: 10 JUN 2020

Title: Group Leader

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

**SDG Number:** A0E0214  
**Lab Sample ID:** 16561001  
**Client Sample:** 1613B Soil  
**Client ID:** ISM-01\_0520---After Processing  
**Batch ID:** 43904  
**Run Date:** 06/03/2020 16:10  
**Data File:** A03JUN20A\_2-2  
**Prep Batch:** 43902  
**Prep Date:** 29-MAY-20

**Client:** APEX001  
**Date Collected:** 05/06/2020 18:00  
**Date Received:** 05/20/2020 10:00  
**Method:** EPA Method 1613B  
**Analyst:** MLL  
**Prep Method:** EPA Method 1613B-3546  
**Prep Aliquot:** 18.94 g

**Project:** APEX00217  
**Matrix:** SOIL  
**%Moisture:** 42.7  
**Prep Basis:** Dry Weight  
**Instrument:** HRP750  
**Dilution:** 1

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.514	pg/g	0.190	0.921
40321-76-4	1,2,3,7,8-PeCDD	J	0.860	pg/g	0.162	4.61
39227-28-6	1,2,3,4,7,8-HxCDD	J	1.40	pg/g	0.354	4.61
57653-85-7	1,2,3,6,7,8-HxCDD	J	3.86	pg/g	0.339	4.61
19408-74-3	1,2,3,7,8,9-HxCDD	JK	1.97	pg/g	0.352	4.61
35822-46-9	1,2,3,4,6,7,8-HpCDD		81.1	pg/g	0.484	4.61
3268-87-9	1,2,3,4,6,7,8,9-OCDD		760	pg/g	0.857	9.21
51207-31-9	2,3,7,8-TCDF	U	0.251	pg/g	0.251	0.921
57117-41-6	1,2,3,7,8-PeCDF	BJ	0.551	pg/g	0.201	4.61
57117-31-4	2,3,4,7,8-PeCDF	BJ	0.724	pg/g	0.195	4.61
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.822	pg/g	0.144	4.61
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.656	pg/g	0.153	4.61
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.416	pg/g	0.197	4.61
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.987	pg/g	0.152	4.61
67562-39-4	1,2,3,4,6,7,8-HpCDF		16.4	pg/g	0.273	4.61
55673-89-7	1,2,3,4,7,8,9-HpCDF	JK	1.10	pg/g	0.359	4.61
39001-02-0	1,2,3,4,6,7,8,9-OCDF		41.5	pg/g	0.326	9.21
41903-57-5	Total TeCDD	JK	1.51	pg/g	0.190	0.921
36088-22-9	Total PeCDD	JK	4.33	pg/g	0.162	4.61
34465-46-8	Total HxCDD	JK	23.5	pg/g	0.339	4.61
37871-00-4	Total HpCDD		163	pg/g	0.484	4.61
30402-14-3	Total TeCDF	JK	1.27	pg/g	0.251	0.921
30402-15-4	Total PeCDF	JK	9.25	pg/g	0.0479	4.61
55684-94-1	Total HxCDF	J	25.0	pg/g	0.144	4.61
38998-75-3	Total HpCDF	JK	51.0	pg/g	0.273	4.61
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		3.85	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		3.86	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		74.0	184	pg/g	40.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		86.5	184	pg/g	47.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		74.8	184	pg/g	40.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		76.7	184	pg/g	41.6	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		89.0	184	pg/g	48.3	(23%-140%)
13C-OCDD		148	368	pg/g	40.2	(17%-157%)
13C-2,3,7,8-TCDF		80.9	184	pg/g	43.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		89.4	184	pg/g	48.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		83.9	184	pg/g	45.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		74.9	184	pg/g	40.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		71.8	184	pg/g	39.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		76.7	184	pg/g	41.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		77.7	184	pg/g	42.2	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561001	<b>Date Collected:</b> 05/06/2020 18:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 42.7
<b>Client ID:</b> ISM-01_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/03/2020 16:10	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A03JUN20A_2-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> 18.94 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			76.5	184	pg/g	41.5 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			85.1	184	pg/g	46.2 (26%-138%)
37Cl-2,3,7,8-TCDD			15.2	18.4	pg/g	82.4 (35%-197%)

- Comments:**
- B** The target analyte was detected in the associated blank.
  - J** Value is estimated
  - K** Estimated Maximum Possible Concentration
  - U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561002	<b>Date Collected:</b> 05/05/2020 11:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 24.5
<b>Client ID:</b> ISM-02_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43953	<b>Method:</b> EPA Method 1613B	<b>Instrument:</b> HRP750
<b>Run Date:</b> 06/08/2020 23:23	<b>Analyst:</b> MLL	<b>Dilution:</b> 1
<b>Data File:</b> A08JUN20C-10		
<b>Prep Batch:</b> 43951	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 05-JUN-20	<b>Prep Aliquot:</b> 1.07 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	3.56	pg/g	3.56	12.4
40321-76-4	1,2,3,7,8-PeCDD	JK	5.49	pg/g	4.55	61.9
39227-28-6	1,2,3,4,7,8-HxCDD	JK	8.39	pg/g	2.62	61.9
57653-85-7	1,2,3,6,7,8-HxCDD	J	30.8	pg/g	2.45	61.9
19408-74-3	1,2,3,7,8,9-HxCDD	J	12.0	pg/g	2.57	61.9
35822-46-9	1,2,3,4,6,7,8-HpCDD		675	pg/g	4.43	61.9
3268-87-9	1,2,3,4,6,7,8,9-OCDD		8280	pg/g	7.47	124
51207-31-9	2,3,7,8-TCDF	U	3.12	pg/g	3.12	12.4
57117-41-6	1,2,3,7,8-PeCDF	BJK	4.13	pg/g	2.57	61.9
57117-31-4	2,3,4,7,8-PeCDF	BJK	4.35	pg/g	2.72	61.9
70648-26-9	1,2,3,4,7,8-HxCDF	BJK	5.59	pg/g	2.40	61.9
57117-44-9	1,2,3,6,7,8-HxCDF	J	5.52	pg/g	2.47	61.9
72918-21-9	1,2,3,7,8,9-HxCDF	U	3.04	pg/g	3.04	61.9
60851-34-5	2,3,4,6,7,8-HxCDF	JK	6.46	pg/g	2.32	61.9
67562-39-4	1,2,3,4,6,7,8-HpCDF		127	pg/g	2.43	61.9
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	9.92	pg/g	3.04	61.9
39001-02-0	1,2,3,4,6,7,8,9-OCDF		277	pg/g	4.11	124
41903-57-5	Total TeCDD	K	19.7	pg/g	3.56	12.4
36088-22-9	Total PeCDD	JK	21.4	pg/g	4.55	61.9
34465-46-8	Total HxCDD	JK	154	pg/g	2.45	61.9
37871-00-4	Total HpCDD		1300	pg/g	4.43	61.9
30402-14-3	Total TeCDF	U	3.12	pg/g	3.12	12.4
30402-15-4	Total PeCDF	JK	54.7	pg/g	0.963	61.9
55684-94-1	Total HxCDF	JK	159	pg/g	2.32	61.9
38998-75-3	Total HpCDF	J	366	pg/g	2.43	61.9
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		24.5	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		26.6	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1800	2470	pg/g	72.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		1690	2470	pg/g	68.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1980	2470	pg/g	80.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1780	2470	pg/g	71.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		2220	2470	pg/g	89.7	(23%-140%)
13C-OCDD		3860	4950	pg/g	77.9	(17%-157%)
13C-2,3,7,8-TCDF		2020	2470	pg/g	81.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		1690	2470	pg/g	68.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		1610	2470	pg/g	65.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1810	2470	pg/g	73.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1660	2470	pg/g	67.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1860	2470	pg/g	75.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1920	2470	pg/g	77.4	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561002	<b>Date Collected:</b> 05/05/2020 11:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 24.5
<b>Client ID:</b> ISM-02_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43953	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/08/2020 23:23	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A08JUN20C-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43951	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 05-JUN-20	<b>Prep Aliquot:</b> 1.07 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			1860	2470	pg/g	75.3 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			2080	2470	pg/g	84.2 (26%-138%)
37Cl-2,3,7,8-TCDD			201	247	pg/g	81.3 (35%-197%)

**Comments:**

- B** The target analyte was detected in the associated blank.
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

**SDG Number:** A0E0214  
**Lab Sample ID:** 16561003  
**Client Sample:** 1613B Soil  
**Client ID:** ISM-03\_0520---After Processing  
**Batch ID:** 43904  
**Run Date:** 06/05/2020 01:13  
**Data File:** A04JUN20A\_2-3  
**Prep Batch:** 43902  
**Prep Date:** 29-MAY-20

**Client:** APEX001  
**Date Collected:** 05/07/2020 12:30  
**Date Received:** 05/20/2020 10:00  
**Method:** EPA Method 1613B  
**Analyst:** MLL  
**Prep Method:** EPA Method 1613B-3546  
**Prep Aliquot:** .301 g

**Project:** APEX00217  
**Matrix:** SOIL  
**%Moisture:** 31.9  
**Prep Basis:** Dry Weight  
**Instrument:** HRP750  
**Dilution:** 1

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	4.20	pg/g	4.20	48.8
40321-76-4	1,2,3,7,8-PeCDD	J	12.5	pg/g	6.21	244
39227-28-6	1,2,3,4,7,8-HxCDD	J	22.1	pg/g	10.1	244
57653-85-7	1,2,3,6,7,8-HxCDD	J	89.3	pg/g	9.70	244
19408-74-3	1,2,3,7,8,9-HxCDD	J	46.9	pg/g	10.1	244
35822-46-9	1,2,3,4,6,7,8-HpCDD		2310	pg/g	28.2	244
3268-87-9	1,2,3,4,6,7,8,9-OCDD		23400	pg/g	74.4	488
51207-31-9	2,3,7,8-TCDF	U	3.75	pg/g	3.75	48.8
57117-41-6	1,2,3,7,8-PeCDF	J	4.98	pg/g	3.98	244
57117-31-4	2,3,4,7,8-PeCDF	JK	8.59	pg/g	3.74	244
70648-26-9	1,2,3,4,7,8-HxCDF	J	16.2	pg/g	7.54	244
57117-44-9	1,2,3,6,7,8-HxCDF	J	12.1	pg/g	7.21	244
72918-21-9	1,2,3,7,8,9-HxCDF	U	9.59	pg/g	9.59	244
60851-34-5	2,3,4,6,7,8-HxCDF	J	18.5	pg/g	7.10	244
67562-39-4	1,2,3,4,6,7,8-HpCDF		389	pg/g	13.5	244
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	30.8	pg/g	18.9	244
39001-02-0	1,2,3,4,6,7,8,9-OCDF		1600	pg/g	24.3	488
41903-57-5	Total TeCDD	U	4.20	pg/g	4.20	48.8
36088-22-9	Total PeCDD	JK	47.1	pg/g	6.21	244
34465-46-8	Total HxCDD	J	534	pg/g	9.70	244
37871-00-4	Total HpCDD		5080	pg/g	28.2	244
30402-14-3	Total TeCDF	U	3.75	pg/g	3.75	48.8
30402-15-4	Total PeCDF	JK	106	pg/g	1.48	244
55684-94-1	Total HxCDF	J	486	pg/g	7.10	244
38998-75-3	Total HpCDF	J	1540	pg/g	13.5	244
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		70.5	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		73.3	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		5580	9760	pg/g	57.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		7440	9760	pg/g	76.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		6720	9760	pg/g	68.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		7850	9760	pg/g	80.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		7880	9760	pg/g	80.8	(23%-140%)
13C-OCDD		14100	19500	pg/g	72.4	(17%-157%)
13C-2,3,7,8-TCDF		6180	9760	pg/g	63.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		7800	9760	pg/g	79.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		7450	9760	pg/g	76.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		6640	9760	pg/g	68.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		7590	9760	pg/g	77.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		7660	9760	pg/g	78.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		7770	9760	pg/g	79.6	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561003	<b>Date Collected:</b> 05/07/2020 12:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 31.9
<b>Client ID:</b> ISM-03_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/05/2020 01:13	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A04JUN20A_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> .301 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			7380	9760	pg/g	75.6 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			7500	9760	pg/g	76.9 (26%-138%)
37Cl-2,3,7,8-TCDD			507	976	pg/g	52.0 (35%-197%)

**Comments:**  
**J** Value is estimated  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561004	<b>Date Collected:</b> 05/06/2020 13:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 38.4
<b>Client ID:</b> ISM-04_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	<b>Instrument:</b> HRP750
<b>Run Date:</b> 06/09/2020 21:33	<b>Analyst:</b> MLL	<b>Dilution:</b> 1
<b>Data File:</b> A08JUN20C_3-8		
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> 17.09 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		2.45	pg/g	0.348	0.951
40321-76-4	1,2,3,7,8-PeCDD		15.0	pg/g	0.382	4.75
39227-28-6	1,2,3,4,7,8-HxCDD		26.2	pg/g	0.795	4.75
57653-85-7	1,2,3,6,7,8-HxCDD		63.7	pg/g	0.833	4.75
19408-74-3	1,2,3,7,8,9-HxCDD		44.1	pg/g	0.827	4.75
35822-46-9	1,2,3,4,6,7,8-HpCDD		1410	pg/g	1.87	4.75
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	11300	pg/g	2.19	9.51
51207-31-9	2,3,7,8-TCDF		2.68	pg/g	0.605	0.951
57117-41-6	1,2,3,7,8-PeCDF	J	3.13	pg/g	0.270	4.75
57117-31-4	2,3,4,7,8-PeCDF		6.44	pg/g	0.257	4.75
70648-26-9	1,2,3,4,7,8-HxCDF		12.5	pg/g	0.447	4.75
57117-44-9	1,2,3,6,7,8-HxCDF		12.0	pg/g	0.473	4.75
72918-21-9	1,2,3,7,8,9-HxCDF	J	3.21	pg/g	0.538	4.75
60851-34-5	2,3,4,6,7,8-HxCDF		16.8	pg/g	0.456	4.75
67562-39-4	1,2,3,4,6,7,8-HpCDF		339	pg/g	0.673	4.75
55673-89-7	1,2,3,4,7,8,9-HpCDF		18.7	pg/g	0.865	4.75
39001-02-0	1,2,3,4,6,7,8,9-OCDF		991	pg/g	1.59	9.51
41903-57-5	Total TeCDD	JK	14.6	pg/g	0.348	0.951
36088-22-9	Total PeCDD	J	70.1	pg/g	0.382	4.75
34465-46-8	Total HxCDD		429	pg/g	0.795	4.75
37871-00-4	Total HpCDD	E	2690	pg/g	1.87	4.75
30402-14-3	Total TeCDF	JK	40.3	pg/g	0.605	0.951
30402-15-4	Total PeCDF	JK	141	pg/g	0.0696	4.75
55684-94-1	Total HxCDF	J	398	pg/g	0.447	4.75
38998-75-3	Total HpCDF	JK	968	pg/g	0.673	4.75
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		58.9	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		58.9	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		96.6	190	pg/g	50.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		96.5	190	pg/g	50.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		103	190	pg/g	53.9	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		97.6	190	pg/g	51.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		113	190	pg/g	59.7	(23%-140%)
13C-OCDD		192	380	pg/g	50.5	(17%-157%)
13C-2,3,7,8-TCDF		109	190	pg/g	57.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		101	190	pg/g	53.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		94.0	190	pg/g	49.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		96.9	190	pg/g	51.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		90.2	190	pg/g	47.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		99.2	190	pg/g	52.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		97.5	190	pg/g	51.3	(29%-147%)



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561004	<b>Date Collected:</b> 05/06/2020 13:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 38.4
<b>Client ID:</b> ISM-04_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/09/2020 21:33	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A08JUN20C_3-8		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> 17.09 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			95.3	190	pg/g	50.1 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			109	190	pg/g	57.1 (26%-138%)
37Cl-2,3,7,8-TCDD			15.1	19.0	pg/g	79.7 (35%-197%)

**Comments:**  
**E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range  
**J** Value is estimated  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561004	<b>Date Collected:</b> 05/06/2020 13:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 38.4
<b>Client ID:</b> ISM-04_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/10/2020 09:37	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP757
<b>Data File:</b> e10jun20a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> 17.09 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		2.00	pg/g	0.354	0.951

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
---------------------------	------	--------	---------	-------	-----------	-------------------

**Comments:**

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561005	<b>Date Collected:</b> 05/07/2020 15:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 29.4
<b>Client ID:</b> ISM-06_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	<b>Instrument:</b> HRP750
<b>Run Date:</b> 06/05/2020 02:02	<b>Analyst:</b> MLL	<b>Dilution:</b> 1
<b>Data File:</b> A04JUN20A_2-4		
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> .301 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	4.96	pg/g	4.96	47.1
40321-76-4	1,2,3,7,8-PeCDD	J	19.0	pg/g	10.5	235
39227-28-6	1,2,3,4,7,8-HxCDD	J	28.1	pg/g	15.7	235
57653-85-7	1,2,3,6,7,8-HxCDD	J	195	pg/g	15.6	235
19408-74-3	1,2,3,7,8,9-HxCDD	J	76.6	pg/g	15.9	235
35822-46-9	1,2,3,4,6,7,8-HpCDD		4520	pg/g	38.3	235
3268-87-9	1,2,3,4,6,7,8,9-OCDD		46200	pg/g	83.9	471
51207-31-9	2,3,7,8-TCDF	U	4.40	pg/g	4.40	47.1
57117-41-6	1,2,3,7,8-PeCDF	U	11.7	pg/g	11.7	235
57117-31-4	2,3,4,7,8-PeCDF	J	18.2	pg/g	10.9	235
70648-26-9	1,2,3,4,7,8-HxCDF	J	41.1	pg/g	10.9	235
57117-44-9	1,2,3,6,7,8-HxCDF	J	22.4	pg/g	10.5	235
72918-21-9	1,2,3,7,8,9-HxCDF	J	18.6	pg/g	15.1	235
60851-34-5	2,3,4,6,7,8-HxCDF	J	29.5	pg/g	10.3	235
67562-39-4	1,2,3,4,6,7,8-HpCDF		611	pg/g	13.6	235
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	26.8	pg/g	20.8	235
39001-02-0	1,2,3,4,6,7,8,9-OCDF		1000	pg/g	23.4	471
41903-57-5	Total TeCDD	JK	20.2	pg/g	4.96	47.1
36088-22-9	Total PeCDD	J	90.1	pg/g	10.5	235
34465-46-8	Total HxCDD	J	1040	pg/g	15.6	235
37871-00-4	Total HpCDD		9880	pg/g	38.3	235
30402-14-3	Total TeCDF	JK	12.0	pg/g	4.40	47.1
30402-15-4	Total PeCDF	J	249	pg/g	1.25	235
55684-94-1	Total HxCDF	J	1140	pg/g	10.3	235
38998-75-3	Total HpCDF	J	2040	pg/g	13.6	235
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		131	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		134	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		5790	9410	pg/g	61.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		7060	9410	pg/g	75.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		6400	9410	pg/g	68.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		7240	9410	pg/g	77.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		7410	9410	pg/g	78.7	(23%-140%)
13C-OCDD		13700	18800	pg/g	72.6	(17%-157%)
13C-2,3,7,8-TCDF		6510	9410	pg/g	69.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		7640	9410	pg/g	81.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		7190	9410	pg/g	76.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		6240	9410	pg/g	66.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		7260	9410	pg/g	77.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		7200	9410	pg/g	76.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		7240	9410	pg/g	76.9	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561005	<b>Date Collected:</b> 05/07/2020 15:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 29.4
<b>Client ID:</b> ISM-06_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/05/2020 02:02	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A04JUN20A_2-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> .301 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			7060	9410	pg/g	75.0 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			7110	9410	pg/g	75.5 (26%-138%)
37Cl-2,3,7,8-TCDD			541	941	pg/g	57.5 (35%-197%)

**Comments:**  
**J** Value is estimated  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

**SDG Number:** A0E0214  
**Lab Sample ID:** 16561006  
**Client Sample:** 1613B Soil  
**Client ID:** ISM-07\_0520---After Processing  
**Batch ID:** 43904  
**Run Date:** 06/09/2020 22:22  
**Data File:** A08JUN20C\_3-9  
**Prep Batch:** 43902  
**Prep Date:** 29-MAY-20

**Client:** APEX001  
**Date Collected:** 05/05/2020 14:30  
**Date Received:** 05/20/2020 10:00  
**Method:** EPA Method 1613B  
**Analyst:** MLL  
**Prep Method:** EPA Method 1613B-3546  
**Prep Aliquot:** 16.57 g

**Project:** APEX00217  
**Matrix:** SOIL  
**%Moisture:** 35  
**Prep Basis:** Dry Weight  
**Instrument:** HRP750  
**Dilution:** 1

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.492	pg/g	0.310	0.929
40321-76-4	1,2,3,7,8-PeCDD	JK	1.76	pg/g	0.457	4.64
39227-28-6	1,2,3,4,7,8-HxCDD	J	4.64	pg/g	0.362	4.64
57653-85-7	1,2,3,6,7,8-HxCDD		18.0	pg/g	0.362	4.64
19408-74-3	1,2,3,7,8,9-HxCDD		7.51	pg/g	0.368	4.64
35822-46-9	1,2,3,4,6,7,8-HpCDD		444	pg/g	1.25	4.64
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	4460	pg/g	2.43	9.29
51207-31-9	2,3,7,8-TCDF	K	1.16	pg/g	0.446	0.929
57117-41-6	1,2,3,7,8-PeCDF	J	2.18	pg/g	0.329	4.64
57117-31-4	2,3,4,7,8-PeCDF	J	2.94	pg/g	0.325	4.64
70648-26-9	1,2,3,4,7,8-HxCDF	J	4.63	pg/g	0.368	4.64
57117-44-9	1,2,3,6,7,8-HxCDF	J	3.18	pg/g	0.370	4.64
72918-21-9	1,2,3,7,8,9-HxCDF	J	1.65	pg/g	0.490	4.64
60851-34-5	2,3,4,6,7,8-HxCDF		4.68	pg/g	0.368	4.64
67562-39-4	1,2,3,4,6,7,8-HpCDF		140	pg/g	0.535	4.64
55673-89-7	1,2,3,4,7,8,9-HpCDF		7.52	pg/g	0.723	4.64
39001-02-0	1,2,3,4,6,7,8,9-OCDF		524	pg/g	1.05	9.29
41903-57-5	Total TeCDD	JK	5.49	pg/g	0.310	0.929
36088-22-9	Total PeCDD	JK	11.0	pg/g	0.457	4.64
34465-46-8	Total HxCDD	J	95.8	pg/g	0.362	4.64
37871-00-4	Total HpCDD		837	pg/g	1.25	4.64
30402-14-3	Total TeCDF	JK	11.9	pg/g	0.446	0.929
30402-15-4	Total PeCDF	JK	51.8	pg/g	0.0615	4.64
55684-94-1	Total HxCDF	J	182	pg/g	0.368	4.64
38998-75-3	Total HpCDF	J	522	pg/g	0.535	4.64
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		15.2	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		15.2	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		112	186	pg/g	60.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		121	186	pg/g	64.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		111	186	pg/g	59.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		110	186	pg/g	59.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		122	186	pg/g	65.7	(23%-140%)
13C-OCDD		200	372	pg/g	53.9	(17%-157%)
13C-2,3,7,8-TCDF		123	186	pg/g	66.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		129	186	pg/g	69.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		118	186	pg/g	63.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		107	186	pg/g	57.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		103	186	pg/g	55.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		110	186	pg/g	59.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		110	186	pg/g	59.0	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561006	<b>Date Collected:</b> 05/05/2020 14:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 35
<b>Client ID:</b> ISM-07_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/09/2020 22:22	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A08JUN20C_3-9		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> 16.57 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			106	186	pg/g	56.9 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			112	186	pg/g	60.2 (26%-138%)
37Cl-2,3,7,8-TCDD			15.3	18.6	pg/g	82.1 (35%-197%)

**Comments:**  
**E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range  
**J** Value is estimated  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561006	<b>Date Collected:</b> 05/05/2020 14:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 35
<b>Client ID:</b> ISM-07_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/09/2020 10:59	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP757
<b>Data File:</b> e09jun20a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> 16.57 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		1.48	pg/g	0.294	0.929

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
---------------------------	------	--------	---------	-------	-----------	-------------------

**Comments:**

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561007	<b>Date Collected:</b> 05/06/2020 18:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 11.3
<b>Client ID:</b> ISM-104_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43953	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/09/2020 01:49	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A08JUN20C-13		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43951	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 05-JUN-20	<b>Prep Aliquot:</b> 1.03 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	4.73	pg/g	1.92	10.9
40321-76-4	1,2,3,7,8-PeCDD	J	21.7	pg/g	3.26	54.7
39227-28-6	1,2,3,4,7,8-HxCDD	J	34.3	pg/g	2.67	54.7
57653-85-7	1,2,3,6,7,8-HxCDD		96.0	pg/g	2.63	54.7
19408-74-3	1,2,3,7,8,9-HxCDD		68.0	pg/g	2.69	54.7
35822-46-9	1,2,3,4,6,7,8-HpCDD		2230	pg/g	8.21	54.7
3268-87-9	1,2,3,4,6,7,8,9-OCDD		21800	pg/g	10.3	109
51207-31-9	2,3,7,8-TCDF	JK	2.23	pg/g	2.18	10.9
57117-41-6	1,2,3,7,8-PeCDF	BJ	5.23	pg/g	1.46	54.7
57117-31-4	2,3,4,7,8-PeCDF	J	9.61	pg/g	1.49	54.7
70648-26-9	1,2,3,4,7,8-HxCDF	J	18.6	pg/g	1.93	54.7
57117-44-9	1,2,3,6,7,8-HxCDF	JK	18.8	pg/g	1.97	54.7
72918-21-9	1,2,3,7,8,9-HxCDF	J	6.04	pg/g	2.63	54.7
60851-34-5	2,3,4,6,7,8-HxCDF	J	24.7	pg/g	1.89	54.7
67562-39-4	1,2,3,4,6,7,8-HpCDF		511	pg/g	2.39	54.7
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	29.4	pg/g	3.24	54.7
39001-02-0	1,2,3,4,6,7,8,9-OCDF		1480	pg/g	4.22	109
41903-57-5	Total TeCDD	JK	18.8	pg/g	1.92	10.9
36088-22-9	Total PeCDD	J	94.5	pg/g	3.26	54.7
34465-46-8	Total HxCDD	JK	630	pg/g	2.63	54.7
37871-00-4	Total HpCDD		4290	pg/g	8.21	54.7
30402-14-3	Total TeCDF	JK	40.6	pg/g	2.18	10.9
30402-15-4	Total PeCDF	JK	194	pg/g	0.368	54.7
55684-94-1	Total HxCDF	JK	573	pg/g	1.89	54.7
38998-75-3	Total HpCDF	J	1450	pg/g	2.39	54.7
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		91.0	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		91.0	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1360	2190	pg/g	62.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		1570	2190	pg/g	71.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1540	2190	pg/g	70.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1480	2190	pg/g	67.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1680	2190	pg/g	76.8	(23%-140%)
13C-OCDD		2820	4380	pg/g	64.4	(17%-157%)
13C-2,3,7,8-TCDF		1510	2190	pg/g	69.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		1670	2190	pg/g	76.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		1530	2190	pg/g	69.8	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1490	2190	pg/g	68.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1410	2190	pg/g	64.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1520	2190	pg/g	69.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1490	2190	pg/g	68.3	(29%-147%)



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561007	<b>Date Collected:</b> 05/06/2020 18:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 11.3
<b>Client ID:</b> ISM-104_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43953	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/09/2020 01:49	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A08JUN20C-13		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43951	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 05-JUN-20	<b>Prep Aliquot:</b> 1.03 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			1470	2190	pg/g	67.1 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			1590	2190	pg/g	72.5 (26%-138%)
37Cl-2,3,7,8-TCDD			171	219	pg/g	78.0 (35%-197%)

**Comments:**  
**B** The target analyte was detected in the associated blank.  
**J** Value is estimated  
**K** Estimated Maximum Possible Concentration

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561008	<b>Date Collected:</b> 05/06/2020 14:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 31.5
<b>Client ID:</b> ISM-204_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43953	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/09/2020 02:38	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A08JUN20C-14		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43951	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 05-JUN-20	<b>Prep Aliquot:</b> 1.11 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	7.83	pg/g	2.55	13.1
40321-76-4	1,2,3,7,8-PeCDD	J	34.0	pg/g	3.21	65.7
39227-28-6	1,2,3,4,7,8-HxCDD	J	61.5	pg/g	4.34	65.7
57653-85-7	1,2,3,6,7,8-HxCDD		152	pg/g	4.42	65.7
19408-74-3	1,2,3,7,8,9-HxCDD		112	pg/g	4.44	65.7
35822-46-9	1,2,3,4,6,7,8-HpCDD		3720	pg/g	12.9	65.7
3268-87-9	1,2,3,4,6,7,8,9-OCDD		35000	pg/g	15.5	131
51207-31-9	2,3,7,8-TCDF	U	3.60	pg/g	3.60	13.1
57117-41-6	1,2,3,7,8-PeCDF	JK	10.1	pg/g	2.03	65.7
57117-31-4	2,3,4,7,8-PeCDF	J	16.3	pg/g	2.02	65.7
70648-26-9	1,2,3,4,7,8-HxCDF	J	34.4	pg/g	2.87	65.7
57117-44-9	1,2,3,6,7,8-HxCDF	J	34.7	pg/g	3.00	65.7
72918-21-9	1,2,3,7,8,9-HxCDF	J	9.67	pg/g	3.76	65.7
60851-34-5	2,3,4,6,7,8-HxCDF	J	42.4	pg/g	2.89	65.7
67562-39-4	1,2,3,4,6,7,8-HpCDF		877	pg/g	5.15	65.7
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	48.1	pg/g	6.83	65.7
39001-02-0	1,2,3,4,6,7,8,9-OCDF		2550	pg/g	6.62	131
41903-57-5	Total TeCDD	JK	31.5	pg/g	2.55	13.1
36088-22-9	Total PeCDD	JK	171	pg/g	3.21	65.7
34465-46-8	Total HxCDD	JK	1010	pg/g	4.34	65.7
37871-00-4	Total HpCDD		7020	pg/g	12.9	65.7
30402-14-3	Total TeCDF	JK	73.1	pg/g	3.60	13.1
30402-15-4	Total PeCDF	JK	369	pg/g	0.610	65.7
55684-94-1	Total HxCDF	J	996	pg/g	2.87	65.7
38998-75-3	Total HpCDF	J	2430	pg/g	5.15	65.7
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		149	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		149	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1770	2630	pg/g	67.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		1750	2630	pg/g	66.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1950	2630	pg/g	74.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1890	2630	pg/g	72.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		2260	2630	pg/g	86.0	(23%-140%)
13C-OCDD		4110	5260	pg/g	78.1	(17%-157%)
13C-2,3,7,8-TCDF		1980	2630	pg/g	75.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		1800	2630	pg/g	68.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		1690	2630	pg/g	64.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1840	2630	pg/g	69.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1720	2630	pg/g	65.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1920	2630	pg/g	73.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1850	2630	pg/g	70.5	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561008	<b>Date Collected:</b> 05/06/2020 14:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 31.5
<b>Client ID:</b> ISM-204_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43953	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/09/2020 02:38	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A08JUN20C-14		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43951	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 05-JUN-20	<b>Prep Aliquot:</b> 1.11 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			1930	2630	pg/g	73.4 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			2110	2630	pg/g	80.2 (26%-138%)
37Cl-2,3,7,8-TCDD			208	263	pg/g	79.0 (35%-197%)

**Comments:**  
**J** Value is estimated  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561009	<b>Date Collected:</b> 05/05/2020 14:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 40.5
<b>Client ID:</b> ISM-907_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/09/2020 23:11	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A08JUN20C_3-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> 19.19 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.475	pg/g	0.249	0.876
40321-76-4	1,2,3,7,8-PeCDD	J	1.69	pg/g	0.354	4.38
39227-28-6	1,2,3,4,7,8-HxCDD	J	4.07	pg/g	0.442	4.38
57653-85-7	1,2,3,6,7,8-HxCDD		16.5	pg/g	0.436	4.38
19408-74-3	1,2,3,7,8,9-HxCDD		6.51	pg/g	0.445	4.38
35822-46-9	1,2,3,4,6,7,8-HpCDD		407	pg/g	1.35	4.38
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	4620	pg/g	1.77	8.76
51207-31-9	2,3,7,8-TCDF		1.07	pg/g	0.373	0.876
57117-41-6	1,2,3,7,8-PeCDF	J	1.64	pg/g	0.319	4.38
57117-31-4	2,3,4,7,8-PeCDF	J	2.82	pg/g	0.317	4.38
70648-26-9	1,2,3,4,7,8-HxCDF	J	4.24	pg/g	0.342	4.38
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.71	pg/g	0.342	4.38
72918-21-9	1,2,3,7,8,9-HxCDF	J	1.51	pg/g	0.445	4.38
60851-34-5	2,3,4,6,7,8-HxCDF	J	4.29	pg/g	0.343	4.38
67562-39-4	1,2,3,4,6,7,8-HpCDF		124	pg/g	0.487	4.38
55673-89-7	1,2,3,4,7,8,9-HpCDF		6.93	pg/g	0.626	4.38
39001-02-0	1,2,3,4,6,7,8,9-OCDF		478	pg/g	0.787	8.76
41903-57-5	Total TeCDD	JK	4.98	pg/g	0.249	0.876
36088-22-9	Total PeCDD	JK	10.2	pg/g	0.354	4.38
34465-46-8	Total HxCDD	J	88.9	pg/g	0.436	4.38
37871-00-4	Total HpCDD		775	pg/g	1.35	4.38
30402-14-3	Total TeCDF	JK	9.49	pg/g	0.373	0.876
30402-15-4	Total PeCDF	JK	46.6	pg/g	0.0682	4.38
55684-94-1	Total HxCDF	J	161	pg/g	0.342	4.38
38998-75-3	Total HpCDF	J	465	pg/g	0.487	4.38
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		14.1	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		14.1	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		68.8	175	pg/g	39.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		74.1	175	pg/g	42.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		70.3	175	pg/g	40.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		67.2	175	pg/g	38.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		76.9	175	pg/g	43.9	(23%-140%)
13C-OCDD		128	350	pg/g	36.6	(17%-157%)
13C-2,3,7,8-TCDF		75.4	175	pg/g	43.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		77.5	175	pg/g	44.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		71.0	175	pg/g	40.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		66.5	175	pg/g	38.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		64.7	175	pg/g	36.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		68.9	175	pg/g	39.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		70.0	175	pg/g	40.0	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561009	<b>Date Collected:</b> 05/05/2020 14:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 40.5
<b>Client ID:</b> ISM-907_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/09/2020 23:11	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A08JUN20C_3-10		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> 19.19 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			66.1	175	pg/g	37.7 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			71.1	175	pg/g	40.6 (26%-138%)
37Cl-2,3,7,8-TCDD			14.8	17.5	pg/g	84.5 (35%-197%)

**Comments:**

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16561009	<b>Date Collected:</b> 05/05/2020 14:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 05/20/2020 10:00	<b>%Moisture:</b> 40.5
<b>Client ID:</b> ISM-907_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/09/2020 12:11	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP757
<b>Data File:</b> e09jun20a-7		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> 19.19 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		1.27	pg/g	0.284	0.876

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
---------------------------	------	--------	---------	-------	-----------	-------------------

**Comments:**

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

# Quality Control Summary



**Hi-Res Dioxins/Furans**  
**Surrogate Recovery Report**

SDG Number: A0E0214

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12026686	LCS for batch 43902	13C-2,3,7,8-TCDD		78.7	(20%-175%)
		13C-1,2,3,7,8-PeCDD		87.9	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		76.7	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		82.1	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		78.9	(22%-166%)
		13C-OCDD		61.4	(13%-199%)
		13C-2,3,7,8-TCDF		89.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		101	(21%-192%)
		13C-2,3,4,7,8-PeCDF		90.5	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		82.1	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		82.6	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		84.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		84.1	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		74.1	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		77.5	(20%-186%)
		37Cl-2,3,7,8-TCDD		86.8	(31%-191%)
12026687	LCSD for batch 43902	13C-2,3,7,8-TCDD		72.3	(20%-175%)
		13C-1,2,3,7,8-PeCDD		77.9	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		71.7	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		74.6	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		73.6	(22%-166%)
		13C-OCDD		56.6	(13%-199%)
		13C-2,3,7,8-TCDF		82.5	(22%-152%)
		13C-1,2,3,7,8-PeCDF		93.5	(21%-192%)
		13C-2,3,4,7,8-PeCDF		81.4	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		74.4	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		75.1	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		76.0	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		77.5	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		67.3	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		71.1	(20%-186%)
		37Cl-2,3,7,8-TCDD		86.6	(31%-191%)
12026685	MB for batch 43902	13C-2,3,7,8-TCDD		73.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		80.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		73.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		74.2	(23%-140%)
		13C-OCDD		58.9	(17%-157%)
		13C-2,3,7,8-TCDF		83.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		96.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		84.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		76.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		78.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		68.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		72.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		85.5	(35%-197%)
16561001	ISM-01_0520---After Processing	13C-2,3,7,8-TCDD		40.2	(25%-164%)

**Hi-Res Dioxins/Furans**  
**Surrogate Recovery Report**

SDG Number: A0E0214

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
16561001	ISM-01_0520---After Processing	13C-1,2,3,7,8-PeCDD		47.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		40.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		41.6	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		48.3	(23%-140%)
		13C-OCDD		40.2	(17%-157%)
		13C-2,3,7,8-TCDF		43.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		48.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		45.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		40.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		39.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		41.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		42.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		41.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		46.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.4	(35%-197%)
16561003	ISM-03_0520---After Processing	13C-2,3,7,8-TCDD		57.1	(25%-164%)
		13C-1,2,3,7,8-PeCDD		76.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		68.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		80.8	(23%-140%)
		13C-OCDD		72.4	(17%-157%)
		13C-2,3,7,8-TCDF		63.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		79.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		76.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		68.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		78.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.9	(26%-138%)
37Cl-2,3,7,8-TCDD		52.0	(35%-197%)		
16561005	ISM-06_0520---After Processing	13C-2,3,7,8-TCDD		61.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		75.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		68.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		77.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		78.7	(23%-140%)
		13C-OCDD		72.6	(17%-157%)
		13C-2,3,7,8-TCDF		69.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		81.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		76.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		66.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		77.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		75.5	(26%-138%)
37Cl-2,3,7,8-TCDD		57.5	(35%-197%)		
12026717	LCS for batch 43951	13C-2,3,7,8-TCDD		69.9	(20%-175%)
		13C-1,2,3,7,8-PeCDD		72.6	(21%-227%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: A0E0214

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12026717	LCS for batch 43951	13C-1,2,3,4,7,8-HxCDD		74.0	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		68.8	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		77.4	(22%-166%)
		13C-OCDD		62.7	(13%-199%)
		13C-2,3,7,8-TCDF		78.2	(22%-152%)
		13C-1,2,3,7,8-PeCDF		78.8	(21%-192%)
		13C-2,3,4,7,8-PeCDF		71.8	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		71.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		68.4	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		73.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		75.6	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		69.6	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		75.7	(20%-186%)
		37Cl-2,3,7,8-TCDD		83.8	(31%-191%)
		12026718	LCSD for batch 43951	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				77.9	(21%-227%)
13C-1,2,3,4,7,8-HxCDD				77.8	(21%-193%)
13C-1,2,3,6,7,8-HxCDD				71.1	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD				79.4	(22%-166%)
13C-OCDD				64.3	(13%-199%)
13C-2,3,7,8-TCDF				79.9	(22%-152%)
13C-1,2,3,7,8-PeCDF				83.7	(21%-192%)
13C-2,3,4,7,8-PeCDF				76.7	(13%-328%)
13C-1,2,3,4,7,8-HxCDF				75.7	(19%-202%)
13C-1,2,3,6,7,8-HxCDF				71.9	(21%-159%)
13C-2,3,4,6,7,8-HxCDF				76.5	(22%-176%)
13C-1,2,3,7,8,9-HxCDF				79.0	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF				71.2	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF				76.3	(20%-186%)
37Cl-2,3,7,8-TCDD		84.2	(31%-191%)		
12026716	MB for batch 43951	13C-2,3,7,8-TCDD		71.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		74.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		76.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		70.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		76.1	(23%-140%)
		13C-OCDD		61.7	(17%-157%)
		13C-2,3,7,8-TCDF		81.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		74.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		74.9	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		69.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		73.5	(26%-138%)
37Cl-2,3,7,8-TCDD		83.8	(35%-197%)		
16561002	ISM-02_0520---After Processing	13C-2,3,7,8-TCDD		72.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		68.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.1	(32%-141%)

**Hi-Res Dioxins/Furans**  
**Surrogate Recovery Report**

SDG Number: A0E0214

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
16561002	ISM-02_0520---After Processing	13C-1,2,3,6,7,8-HxCDD		71.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		89.7	(23%-140%)
		13C-OCDD		77.9	(17%-157%)
		13C-2,3,7,8-TCDF		81.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		68.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		65.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		73.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		67.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		77.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		84.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		81.3	(35%-197%)
		12026719	ISM-02_0520---After Processing(16561002M)	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				69.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				79.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				74.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				93.7	(23%-140%)
13C-OCDD				88.2	(17%-157%)
13C-2,3,7,8-TCDF				78.2	(24%-169%)
13C-1,2,3,7,8-PeCDF				70.6	(24%-185%)
13C-2,3,4,7,8-PeCDF				67.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				73.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				68.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				76.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				76.9	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				79.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		89.6	(26%-138%)		
37Cl-2,3,7,8-TCDD		82.7	(35%-197%)		
12026720	ISM-02_0520---After Processing(16561002M)	13C-2,3,7,8-TCDD		71.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		76.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		78.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		72.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		88.7	(23%-140%)
		13C-OCDD		81.0	(17%-157%)
		13C-2,3,7,8-TCDF		78.5	(24%-169%)
		13C-1,2,3,7,8-PeCDF		78.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		73.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		73.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		68.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		74.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		76.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		84.5	(26%-138%)		
37Cl-2,3,7,8-TCDD		80.7	(35%-197%)		
16561007	ISM-104_0520---After Processing	13C-2,3,7,8-TCDD		62.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		71.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		70.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		67.5	(28%-130%)

**Hi-Res Dioxins/Furans**  
**Surrogate Recovery Report**

SDG Number: A0E0214

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
16561007	ISM-104_0520---After Processing	13C-1,2,3,4,6,7,8-HpCDD		76.8	(23%-140%)
		13C-OCDD		64.4	(17%-157%)
		13C-2,3,7,8-TCDF		69.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		76.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		69.8	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		68.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		64.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		69.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		68.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		67.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		72.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		78.0	(35%-197%)
		16561008	ISM-204_0520---After Processing	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				66.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				74.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				72.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				86.0	(23%-140%)
13C-OCDD				78.1	(17%-157%)
13C-2,3,7,8-TCDF				75.4	(24%-169%)
13C-1,2,3,7,8-PeCDF				68.3	(24%-185%)
13C-2,3,4,7,8-PeCDF				64.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				69.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				65.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				73.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				70.5	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				73.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF				80.2	(26%-138%)
37Cl-2,3,7,8-TCDD		79.0	(35%-197%)		
16561004	ISM-04_0520---After Processing	13C-2,3,7,8-TCDD		50.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		50.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		53.9	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		51.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		59.7	(23%-140%)
		13C-OCDD		50.5	(17%-157%)
		13C-2,3,7,8-TCDF		57.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		53.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		49.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		51.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		47.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		52.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		51.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		50.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		57.1	(26%-138%)
37Cl-2,3,7,8-TCDD		79.7	(35%-197%)		
16561006	ISM-07_0520---After Processing	13C-2,3,7,8-TCDD		60.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		64.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		59.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		59.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		65.7	(23%-140%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: A0E0214

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
16561006	ISM-07_0520---After Processing	13C-OCDD		53.9	(17%-157%)
		13C-2,3,7,8-TCDF		66.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		69.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		63.6	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		57.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		55.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		59.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		59.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		56.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		60.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.1	(35%-197%)
		16561009	ISM-907_0520---After Processing	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				42.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				40.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				38.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				43.9	(23%-140%)
13C-OCDD				36.6	(17%-157%)
13C-2,3,7,8-TCDF				43.0	(24%-169%)
13C-1,2,3,7,8-PeCDF				44.2	(24%-185%)
13C-2,3,4,7,8-PeCDF				40.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				38.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				36.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				39.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				40.0	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				37.7	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF				40.6	(26%-138%)
37Cl-2,3,7,8-TCDD				84.5	(35%-197%)

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

SDG Number: A0E0214

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 43902

Matrix: SOIL

Lab Sample ID: 12026686

Instrument: HRP750

Analysis Date: 06/02/2020 02:09

Dilution: 1

Analyst: MLL

Prep Batch ID: 43902

Batch ID: 43904

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS 2,3,7,8-TCDD	20.0	20.5	103	67-158
40321-76-4	LCS 1,2,3,7,8-PeCDD	100	108	108	70-142
39227-28-6	LCS 1,2,3,4,7,8-HxCDD	100	103	103	70-164
57653-85-7	LCS 1,2,3,6,7,8-HxCDD	100	103	103	76-134
19408-74-3	LCS 1,2,3,7,8,9-HxCDD	100	106	106	64-162
35822-46-9	LCS 1,2,3,4,6,7,8-HpCDD	100	93.9	93.9	70-140
3268-87-9	LCS 1,2,3,4,6,7,8,9-OCDD	200	199	99.6	78-144
51207-31-9	LCS 2,3,7,8-TCDF	20.0	18.0	90.2	75-158
57117-41-6	LCS 1,2,3,7,8-PeCDF	100	95.5	95.5	80-134
57117-31-4	LCS 2,3,4,7,8-PeCDF	100	103	103	68-160
70648-26-9	LCS 1,2,3,4,7,8-HxCDF	100	99.4	99.4	72-134
57117-44-9	LCS 1,2,3,6,7,8-HxCDF	100	103	103	84-130
72918-21-9	LCS 1,2,3,7,8,9-HxCDF	100	96.4	96.4	78-130
60851-34-5	LCS 2,3,4,6,7,8-HxCDF	100	97.0	97	70-156
67562-39-4	LCS 1,2,3,4,6,7,8-HpCDF	100	100	100	82-122
55673-89-7	LCS 1,2,3,4,7,8,9-HpCDF	100	95.9	95.9	78-138
39001-02-0	LCS 1,2,3,4,6,7,8,9-OCDF	200	192	95.8	63-170



**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

SDG Number: A0E0214

Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 43902

Matrix: SOIL

Lab Sample ID: 12026687

Instrument: HRP750

Analysis Date: 06/02/2020 02:57

Dilution: 1

Analyst: MLL

Prep Batch ID: 43902

Batch ID: 43904

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD 2,3,7,8-TCDD	20.0	20.9	104	67-158	1.82	0-20
40321-76-4	LCSD 1,2,3,7,8-PeCDD	100	111	111	70-142	2.97	0-20
39227-28-6	LCSD 1,2,3,4,7,8-HxCDD	100	103	103	70-164	0.240	0-20
57653-85-7	LCSD 1,2,3,6,7,8-HxCDD	100	104	104	76-134	0.376	0-20
19408-74-3	LCSD 1,2,3,7,8,9-HxCDD	100	108	108	64-162	2.00	0-20
35822-46-9	LCSD 1,2,3,4,6,7,8-HpCDD	100	93.4	93.4	70-140	0.508	0-20
3268-87-9	LCSD 1,2,3,4,6,7,8,9-OCDD	200	193	96.4	78-144	3.25	0-20
51207-31-9	LCSD 2,3,7,8-TCDF	20.0	18.0	90.1	75-158	0.166	0-20
57117-41-6	LCSD 1,2,3,7,8-PeCDF	100	96.6	96.6	80-134	1.20	0-20
57117-31-4	LCSD 2,3,4,7,8-PeCDF	100	108	108	68-160	4.55	0-20
70648-26-9	LCSD 1,2,3,4,7,8-HxCDF	100	101	101	72-134	1.37	0-20
57117-44-9	LCSD 1,2,3,6,7,8-HxCDF	100	101	101	84-130	1.38	0-20
72918-21-9	LCSD 1,2,3,7,8,9-HxCDF	100	95.7	95.7	78-130	0.706	0-20
60851-34-5	LCSD 2,3,4,6,7,8-HpCDF	100	101	101	70-156	4.50	0-20
67562-39-4	LCSD 1,2,3,4,6,7,8-HpCDF	100	104	104	82-122	3.76	0-20
55673-89-7	LCSD 1,2,3,4,7,8,9-HpCDF	100	97.3	97.3	78-138	1.41	0-20
39001-02-0	LCSD 1,2,3,4,6,7,8,9-OCDF	200	197	98.4	63-170	2.70	0-20

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

**SDG Number:** A0E0214  
**Client ID:** LCS for batch 43951  
**Lab Sample ID:** 12026717  
**Instrument:** HRP750  
**Analyst:** MLL

**Sample Type:** Laboratory Control Sample  
**Matrix:** SOIL  
**Analysis Date:** 06/08/2020 16:53  
**Prep Batch ID:** 43951  
**Batch ID:** 43953  
**Dilution:** 1

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS 2,3,7,8-TCDD	200	207	104	67-158
40321-76-4	LCS 1,2,3,7,8-PeCDD	1000	1100	110	70-142
39227-28-6	LCS 1,2,3,4,7,8-HxCDD	1000	1050	105	70-164
57653-85-7	LCS 1,2,3,6,7,8-HxCDD	1000	1050	105	76-134
19408-74-3	LCS 1,2,3,7,8,9-HxCDD	1000	1110	111	64-162
35822-46-9	LCS 1,2,3,4,6,7,8-HpCDD	1000	989	98.9	70-140
3268-87-9	LCS 1,2,3,4,6,7,8,9-OCDD	2000	2070	104	78-144
51207-31-9	LCS 2,3,7,8-TCDF	200	182	91.1	75-158
57117-41-6	LCS 1,2,3,7,8-PeCDF	1000	993	99.3	80-134
57117-31-4	LCS 2,3,4,7,8-PeCDF	1000	1080	108	68-160
70648-26-9	LCS 1,2,3,4,7,8-HxCDF	1000	1050	105	72-134
57117-44-9	LCS 1,2,3,6,7,8-HxCDF	1000	1020	102	84-130
72918-21-9	LCS 1,2,3,7,8,9-HxCDF	1000	1020	102	78-130
60851-34-5	LCS 2,3,4,6,7,8-HxCDF	1000	1000	100	70-156
67562-39-4	LCS 1,2,3,4,6,7,8-HpCDF	1000	1050	105	82-122
55673-89-7	LCS 1,2,3,4,7,8,9-HpCDF	1000	994	99.4	78-138
39001-02-0	LCS 1,2,3,4,6,7,8,9-OCDF	2000	2010	100	63-170

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

SDG Number: A0E0214

Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 43951

Matrix: SOIL

Lab Sample ID: 12026718

Instrument: HRP750

Analysis Date: 06/08/2020 17:42

Dilution: 1

Analyst: MLL

Prep Batch ID: 43951

Batch ID: 43953

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD 2,3,7,8-TCDD	200	210	105	67-158	1.65	0-20
40321-76-4	LCSD 1,2,3,7,8-PeCDD	1000	1110	111	70-142	0.494	0-20
39227-28-6	LCSD 1,2,3,4,7,8-HxCDD	1000	1070	107	70-164	1.22	0-20
57653-85-7	LCSD 1,2,3,6,7,8-HxCDD	1000	1070	107	76-134	1.44	0-20
19408-74-3	LCSD 1,2,3,7,8,9-HxCDD	1000	1110	111	64-162	0.0163	0-20
35822-46-9	LCSD 1,2,3,4,6,7,8-HpCDD	1000	975	97.5	70-140	1.39	0-20
3268-87-9	LCSD 1,2,3,4,6,7,8,9-OCDD	2000	2050	102	78-144	1.31	0-20
51207-31-9	LCSD 2,3,7,8-TCDF	200	184	92.1	75-158	1.08	0-20
57117-41-6	LCSD 1,2,3,7,8-PeCDF	1000	991	99.1	80-134	0.222	0-20
57117-31-4	LCSD 2,3,4,7,8-PeCDF	1000	1090	109	68-160	1.08	0-20
70648-26-9	LCSD 1,2,3,4,7,8-HxCDF	1000	1030	103	72-134	2.10	0-20
57117-44-9	LCSD 1,2,3,6,7,8-HxCDF	1000	1050	105	84-130	2.63	0-20
72918-21-9	LCSD 1,2,3,7,8,9-HxCDF	1000	1030	103	78-130	1.37	0-20
60851-34-5	LCSD 2,3,4,6,7,8-HpCDF	1000	1010	101	70-156	0.901	0-20
67562-39-4	LCSD 1,2,3,4,6,7,8-HpCDF	1000	1060	106	82-122	0.570	0-20
55673-89-7	LCSD 1,2,3,4,7,8,9-HpCDF	1000	1000	100	78-138	1.02	0-20
39001-02-0	LCSD 1,2,3,4,6,7,8,9-OCDF	2000	1950	97.7	63-170	2.68	0-20

Hi-Res Dioxins/Furans  
Quality Control Summary  
Spike Recovery Report

SDG Number: A0E0214  
Client ID: ISM-02\_0520---After  
Processing(16561002M)  
Lab Sample ID: 12026719  
Instrument: HRP750  
Analyst: MLL

Sample Type: Matrix Spike  
Matrix: SOIL  
%Moisture: 24.5  
Analysis Date: 06/09/2020 00:12  
Dilution: 1  
Prep Batch ID:43951  
Batch ID: 43953

CAS No.	Parmname	Amount Added		Spike	Recovery %	Acceptance Limits	
		pg/g		Conc. pg/g			
1746-01-6	MS	2,3,7,8-TCDD	255	U	268	105	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	1270	JK	1400	109	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	1270	JK	1350	105	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	1270	J	1370	105	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	1270	J	1390	108	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	1270		1990	103	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	2550		11300	117	70-130
51207-31-9	MS	2,3,7,8-TCDF	255	U	233	91.7	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	1270	BJK	1260	98.8	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	1270	BJK	1380	108	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	1270	BJK	1310	103	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	1270	J	1320	103	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	1270	U	1280	100	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	1270	JK	1270	99.6	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	1270		1480	106	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	1270	J	1260	98.5	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	2550		2790	98.7	70-130

Hi-Res Dioxins/Furans  
Quality Control Summary  
Spike Recovery Report

SDG Number: A0E0214  
Client ID: ISM-02\_0520---After  
Processing(16561002M)  
Lab Sample ID: 12026720  
Instrument: HRP750  
Analyst: MLL

Sample Type: Matrix Spike Duplicate  
Matrix: SOIL  
%Moisture: 24.5  
Analysis Date: 06/09/2020 01:00  
Dilution: 1  
Prep Batch ID:43951  
Batch ID: 43953

CAS No.	Parmname	Amount Added		Spike Conc.	Recovery %	Acceptance Limits	RPD %	Acceptance Limits	
		pg/g	U						
1746-01-6	MSD	2,3,7,8-TCDD	245	U	271	110	70-130	1.00	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	1230	JK	1440	117	70-130	3.25	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	1230	JK	1360	111	70-130	1.14	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	1230	J	1400	112	70-130	2.25	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	1230	J	1420	115	70-130	1.90	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD	1230		2110	117	70-130	5.75	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD	2450		12200	159 *	70-130	7.99	0-20
51207-31-9	MSD	2,3,7,8-TCDF	245	U	233	95.2	70-130	0.0707	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	1230	BJK	1280	104	70-130	1.10	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	1230	BJK	1410	115	70-130	1.83	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	1230	BJK	1330	108	70-130	0.883	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	1230	J	1380	112	70-130	4.45	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	1230	U	1340	110	70-130	4.95	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	1230	JK	1320	107	70-130	3.59	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	1230		1500	112	70-130	1.77	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	1230	J	1300	105	70-130	2.59	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	2450		2790	103	70-130	0.00389	0-20

## Method Blank Summary

Page 1 of 1

SDG Number: A0E0214  
 Client ID: MB for batch 43902  
 Lab Sample ID: 12026685  
 Column:

Client: APEX001  
 Instrument ID: HRP750  
 Prep Date: 29-MAY-20

Matrix: SOIL  
 Data File: A01JUN20B\_3-3  
 Analyzed: 06/02/20 03:45

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 43902	12026686	A01JUN20B_3-1	06/02/20	0209
02 LCSD for batch 43902	12026687	A01JUN20B_3-2	06/02/20	0257
03 ISM-01_0520---After Processing	16561001	A03JUN20A_2-2	06/03/20	1610
04 ISM-03_0520---After Processing	16561003	A04JUN20A_2-3	06/05/20	0113
05 ISM-06_0520---After Processing	16561005	A04JUN20A_2-4	06/05/20	0202
06 ISM-07_0520---After Processing	16561006	e09jun20a-4	06/09/20	1059
07 ISM-907_0520---After Processing	16561009	e09jun20a-7	06/09/20	1211
08 ISM-04_0520---After Processing	16561004	A08JUN20C_3-8	06/09/20	2133
09 ISM-07_0520---After Processing	16561006	A08JUN20C_3-9	06/09/20	2222
10 ISM-907_0520---After Processing	16561009	A08JUN20C_3-10	06/09/20	2311
11 ISM-04_0520---After Processing	16561004	e10jun20a-4	06/10/20	0937

## Method Blank Summary

Page 1 of 1

SDG Number: A0E0214  
 Client ID: MB for batch 43951  
 Lab Sample ID: 12026716  
 Column:

Client: APEX001  
 Instrument ID: HRP750  
 Prep Date: 05-JUN-20

Matrix: SOIL  
 Data File: A08JUN20C-4  
 Analyzed: 06/08/20 18:31

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 43951	12026717	A08JUN20C-2	06/08/20	1653
02 LCSD for batch 43951	12026718	A08JUN20C-3	06/08/20	1742
03 ISM-02_0520---After Processing	16561002	A08JUN20C-10	06/08/20	2323
04 ISM-02_0520---After Processing(16561002M	12026719	A08JUN20C-11	06/09/20	0012
05 ISM-02_0520---After Processing(16561002M	12026720	A08JUN20C-12	06/09/20	0100
06 ISM-104_0520---After Processing	16561007	A08JUN20C-13	06/09/20	0149
07 ISM-204_0520---After Processing	16561008	A08JUN20C-14	06/09/20	0238



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

SDG Number: A0E0214	Client: APEX001	Project: APEX00217
Lab Sample ID: 12026685		Matrix: SOIL
Client Sample: QC for batch 43902		
Client ID: MB for batch 43902		Prep Basis: As Received
Batch ID: 43904	Method: EPA Method 1613B	
Run Date: 06/02/2020 03:45	Analyst: MLL	Instrument: HRP750
Data File: A01JUN20B_3-3		Dilution: 1
Prep Batch: 43902	Prep Method: EPA Method 1613B-3546	
Prep Date: 29-MAY-20	Prep Aliquot: 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.118	pg/g	0.118	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	0.0698	pg/g	0.0698	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.101	pg/g	0.101	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.0952	pg/g	0.0952	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.0996	pg/g	0.0996	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.136	pg/g	0.104	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	0.476	pg/g	0.278	10.0
51207-31-9	2,3,7,8-TCDF	U	0.0762	pg/g	0.0762	1.00
57117-41-6	1,2,3,7,8-PeCDF	JK	0.0760	pg/g	0.0526	5.00
57117-31-4	2,3,4,7,8-PeCDF	J	0.0820	pg/g	0.0546	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	JK	0.0720	pg/g	0.0628	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.0632	pg/g	0.0632	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.0842	pg/g	0.0842	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0630	pg/g	0.0630	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK	0.186	pg/g	0.0864	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.120	pg/g	0.120	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	0.240	pg/g	0.181	10.0
41903-57-5	Total TeCDD	U	0.118	pg/g	0.118	1.00
36088-22-9	Total PeCDD	U	0.0698	pg/g	0.0698	5.00
34465-46-8	Total HxCDD	U	0.0952	pg/g	0.0952	5.00
37871-00-4	Total HpCDD	J	0.136	pg/g	0.104	5.00
30402-14-3	Total TeCDF	U	0.0762	pg/g	0.0762	1.00
30402-15-4	Total PeCDF	JK	0.260	pg/g	0.0352	5.00
55684-94-1	Total HxCDF	JK	0.0720	pg/g	0.0628	5.00
38998-75-3	Total HpCDF	JK	0.186	pg/g	0.0864	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0375	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.161	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		148	200	pg/g	73.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		161	200	pg/g	80.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		146	200	pg/g	73.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	200	pg/g	75.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		148	200	pg/g	74.2	(23%-140%)
13C-OCDD		235	400	pg/g	58.9	(17%-157%)
13C-2,3,7,8-TCDF		166	200	pg/g	83.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		192	200	pg/g	96.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		168	200	pg/g	84.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		153	200	pg/g	76.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		154	200	pg/g	76.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		156	200	pg/g	78.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		158	200	pg/g	78.9	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 12026685		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 43902		
<b>Client ID:</b> MB for batch 43902		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/02/2020 03:45	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A01JUN20B_3-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%      Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			138	200	pg/g	68.8      (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			144	200	pg/g	72.2      (26%-138%)
37Cl-2,3,7,8-TCDD			17.1	20.0	pg/g	85.5      (35%-197%)

**Comments:**  
**J** Value is estimated  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

SDG Number: A0E0214	Client: APEX001	Project: APEX00217
Lab Sample ID: 12026686		Matrix: SOIL
Client Sample: QC for batch 43902		
Client ID: LCS for batch 43902		Prep Basis: As Received
Batch ID: 43904	Method: EPA Method 1613B	
Run Date: 06/02/2020 02:09	Analyst: MLL	Instrument: HRP750
Data File: A01JUN20B_3-1		Dilution: 1
Prep Batch: 43902	Prep Method: EPA Method 1613B-3546	
Prep Date: 29-MAY-20	Prep Aliquot: 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		20.5	pg/g	0.135	1.00
40321-76-4	1,2,3,7,8-PeCDD		108	pg/g	0.189	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		103	pg/g	0.470	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		103	pg/g	0.484	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		106	pg/g	0.486	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		93.9	pg/g	0.538	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		199	pg/g	1.23	10.0
51207-31-9	2,3,7,8-TCDF		18.0	pg/g	0.104	1.00
57117-41-6	1,2,3,7,8-PeCDF		95.5	pg/g	0.316	5.00
57117-31-4	2,3,4,7,8-PeCDF		103	pg/g	0.336	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		99.4	pg/g	0.478	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		103	pg/g	0.474	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		96.4	pg/g	0.678	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		97.0	pg/g	0.498	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		100	pg/g	0.562	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		95.9	pg/g	0.736	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		192	pg/g	0.790	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		157	200	pg/g	78.7	(20%-175%)
13C-1,2,3,7,8-PeCDD		176	200	pg/g	87.9	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		153	200	pg/g	76.7	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		164	200	pg/g	82.1	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		158	200	pg/g	78.9	(22%-166%)
13C-OCDD		246	400	pg/g	61.4	(13%-199%)
13C-2,3,7,8-TCDF		178	200	pg/g	89.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		201	200	pg/g	101	(21%-192%)
13C-2,3,4,7,8-PeCDF		181	200	pg/g	90.5	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		164	200	pg/g	82.1	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		165	200	pg/g	82.6	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		170	200	pg/g	84.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		168	200	pg/g	84.1	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		148	200	pg/g	74.1	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		155	200	pg/g	77.5	(20%-186%)
37Cl-2,3,7,8-TCDD		17.4	20.0	pg/g	86.8	(31%-191%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 12026687		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 43902		
<b>Client ID:</b> LCSD for batch 43902		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 43904	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/02/2020 02:57	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A01JUN20B_3-2		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43902	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 29-MAY-20	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		20.9	pg/g	0.144	1.00
40321-76-4	1,2,3,7,8-PeCDD		111	pg/g	0.188	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		103	pg/g	0.390	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		104	pg/g	0.384	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		108	pg/g	0.394	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		93.4	pg/g	0.418	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		193	pg/g	0.748	10.0
51207-31-9	2,3,7,8-TCDF		18.0	pg/g	0.148	1.00
57117-41-6	1,2,3,7,8-PeCDF		96.6	pg/g	0.180	5.00
57117-31-4	2,3,4,7,8-PeCDF		108	pg/g	0.199	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		101	pg/g	0.474	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		101	pg/g	0.462	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		95.7	pg/g	0.652	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		101	pg/g	0.488	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		104	pg/g	0.538	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		97.3	pg/g	0.708	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		197	pg/g	0.814	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		145	200	pg/g	72.3	(20%-175%)
13C-1,2,3,7,8-PeCDD		156	200	pg/g	77.9	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		143	200	pg/g	71.7	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		149	200	pg/g	74.6	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		147	200	pg/g	73.6	(22%-166%)
13C-OCDD		226	400	pg/g	56.6	(13%-199%)
13C-2,3,7,8-TCDF		165	200	pg/g	82.5	(22%-152%)
13C-1,2,3,7,8-PeCDF		187	200	pg/g	93.5	(21%-192%)
13C-2,3,4,7,8-PeCDF		163	200	pg/g	81.4	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		149	200	pg/g	74.4	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		150	200	pg/g	75.1	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		152	200	pg/g	76.0	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		155	200	pg/g	77.5	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		135	200	pg/g	67.3	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		142	200	pg/g	71.1	(20%-186%)
37Cl-2,3,7,8-TCDD		17.3	20.0	pg/g	86.6	(31%-191%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 12026716		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 43951		
<b>Client ID:</b> MB for batch 43951		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 43953	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/08/2020 18:31	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A08JUN20C-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43951	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 05-JUN-20	<b>Prep Aliquot:</b> 1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	1.36	pg/g	1.36	10.0
40321-76-4	1,2,3,7,8-PeCDD	U	0.646	pg/g	0.646	50.0
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.714	pg/g	0.714	50.0
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.688	pg/g	0.688	50.0
19408-74-3	1,2,3,7,8,9-HxCDD	JK	0.760	pg/g	0.712	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	JK	0.900	pg/g	0.854	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK	3.96	pg/g	1.03	100
51207-31-9	2,3,7,8-TCDF	U	0.714	pg/g	0.714	10.0
57117-41-6	1,2,3,7,8-PeCDF	J	0.660	pg/g	0.442	50.0
57117-31-4	2,3,4,7,8-PeCDF	JK	0.540	pg/g	0.452	50.0
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.960	pg/g	0.754	50.0
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.754	pg/g	0.754	50.0
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.976	pg/g	0.976	50.0
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.736	pg/g	0.736	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	1.72	pg/g	0.638	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.876	pg/g	0.876	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF	JK	2.02	pg/g	1.43	100
41903-57-5	Total TeCDD	U	1.36	pg/g	1.36	10.0
36088-22-9	Total PeCDD	U	0.646	pg/g	0.646	50.0
34465-46-8	Total HxCDD	JK	0.760	pg/g	0.688	50.0
37871-00-4	Total HpCDD	JK	0.900	pg/g	0.854	50.0
30402-14-3	Total TeCDF	U	0.714	pg/g	0.714	10.0
30402-15-4	Total PeCDF	JK	1.70	pg/g	0.278	50.0
55684-94-1	Total HxCDF	J	0.960	pg/g	0.736	50.0
38998-75-3	Total HpCDF	J	1.72	pg/g	0.638	50.0
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.382	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.62	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1440	2000	pg/g	71.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		1490	2000	pg/g	74.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1530	2000	pg/g	76.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1420	2000	pg/g	70.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1520	2000	pg/g	76.1	(23%-140%)
13C-OCDD		2470	4000	pg/g	61.7	(17%-157%)
13C-2,3,7,8-TCDF		1620	2000	pg/g	81.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		1670	2000	pg/g	83.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		1480	2000	pg/g	74.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1500	2000	pg/g	74.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1410	2000	pg/g	70.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1530	2000	pg/g	76.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1530	2000	pg/g	76.6	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 12026716		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 43951		
<b>Client ID:</b> MB for batch 43951		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 43953	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/08/2020 18:31	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP750
<b>Data File:</b> A08JUN20C-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 43951	<b>Prep Method:</b> EPA Method 1613B-3546	
<b>Prep Date:</b> 05-JUN-20	<b>Prep Aliquot:</b> 1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%      Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			1380	2000	pg/g	69.0      (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			1470	2000	pg/g	73.5      (26%-138%)
37Cl-2,3,7,8-TCDD			168	200	pg/g	83.8      (35%-197%)

**Comments:**  
**J** Value is estimated  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

SDG Number: A0E0214	Client: APEX001	Project: APEX00217
Lab Sample ID: 12026717		Matrix: SOIL
Client Sample: QC for batch 43951		
Client ID: LCS for batch 43951		Prep Basis: As Received
Batch ID: 43953	Method: EPA Method 1613B	
Run Date: 06/08/2020 16:53	Analyst: MLL	Instrument: HRP750
Data File: A08JUN20C-2		Dilution: 1
Prep Batch: 43951	Prep Method: EPA Method 1613B-3546	
Prep Date: 05-JUN-20	Prep Aliquot: 1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		207	pg/g	1.26	10.0
40321-76-4	1,2,3,7,8-PeCDD		1100	pg/g	1.40	50.0
39227-28-6	1,2,3,4,7,8-HxCDD		1050	pg/g	1.70	50.0
57653-85-7	1,2,3,6,7,8-HxCDD		1050	pg/g	1.64	50.0
19408-74-3	1,2,3,7,8,9-HxCDD		1110	pg/g	1.70	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		989	pg/g	2.30	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2070	pg/g	4.44	100
51207-31-9	2,3,7,8-TCDF		182	pg/g	1.02	10.0
57117-41-6	1,2,3,7,8-PeCDF		993	pg/g	1.45	50.0
57117-31-4	2,3,4,7,8-PeCDF		1080	pg/g	1.55	50.0
70648-26-9	1,2,3,4,7,8-HxCDF		1050	pg/g	2.70	50.0
57117-44-9	1,2,3,6,7,8-HxCDF		1020	pg/g	2.78	50.0
72918-21-9	1,2,3,7,8,9-HxCDF		1020	pg/g	3.52	50.0
60851-34-5	2,3,4,6,7,8-HxCDF		1000	pg/g	2.70	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		1050	pg/g	2.62	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF		994	pg/g	3.52	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF		2010	pg/g	3.62	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1400	2000	pg/g	69.9	(20%-175%)
13C-1,2,3,7,8-PeCDD		1450	2000	pg/g	72.6	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		1480	2000	pg/g	74.0	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		1380	2000	pg/g	68.8	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		1550	2000	pg/g	77.4	(22%-166%)
13C-OCDD		2510	4000	pg/g	62.7	(13%-199%)
13C-2,3,7,8-TCDF		1560	2000	pg/g	78.2	(22%-152%)
13C-1,2,3,7,8-PeCDF		1580	2000	pg/g	78.8	(21%-192%)
13C-2,3,4,7,8-PeCDF		1440	2000	pg/g	71.8	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		1440	2000	pg/g	71.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		1370	2000	pg/g	68.4	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		1480	2000	pg/g	73.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		1510	2000	pg/g	75.6	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		1390	2000	pg/g	69.6	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		1510	2000	pg/g	75.7	(20%-186%)
37Cl-2,3,7,8-TCDD		168	200	pg/g	83.8	(31%-191%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

SDG Number: A0E0214	Client: APEX001	Project: APEX00217
Lab Sample ID: 12026718		Matrix: SOIL
Client Sample: QC for batch 43951		
Client ID: LCSD for batch 43951		Prep Basis: As Received
Batch ID: 43953	Method: EPA Method 1613B	
Run Date: 06/08/2020 17:42	Analyst: MLL	Instrument: HRP750
Data File: A08JUN20C-3		Dilution: 1
Prep Batch: 43951	Prep Method: EPA Method 1613B-3546	
Prep Date: 05-JUN-20	Prep Aliquot: 1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		210	pg/g	1.22	10.0
40321-76-4	1,2,3,7,8-PeCDD		1110	pg/g	1.56	50.0
39227-28-6	1,2,3,4,7,8-HxCDD		1070	pg/g	1.94	50.0
57653-85-7	1,2,3,6,7,8-HxCDD		1070	pg/g	1.79	50.0
19408-74-3	1,2,3,7,8,9-HxCDD		1110	pg/g	1.89	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		975	pg/g	2.56	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2050	pg/g	3.88	100
51207-31-9	2,3,7,8-TCDF		184	pg/g	1.11	10.0
57117-41-6	1,2,3,7,8-PeCDF		991	pg/g	1.49	50.0
57117-31-4	2,3,4,7,8-PeCDF		1090	pg/g	1.55	50.0
70648-26-9	1,2,3,4,7,8-HxCDF		1030	pg/g	1.74	50.0
57117-44-9	1,2,3,6,7,8-HxCDF		1050	pg/g	1.72	50.0
72918-21-9	1,2,3,7,8,9-HxCDF		1030	pg/g	2.12	50.0
60851-34-5	2,3,4,6,7,8-HxCDF		1010	pg/g	1.70	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		1060	pg/g	2.06	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF		1000	pg/g	2.78	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF		1950	pg/g	3.84	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1460	2000	pg/g	73.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		1560	2000	pg/g	77.9	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		1560	2000	pg/g	77.8	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		1420	2000	pg/g	71.1	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		1590	2000	pg/g	79.4	(22%-166%)
13C-OCDD		2570	4000	pg/g	64.3	(13%-199%)
13C-2,3,7,8-TCDF		1600	2000	pg/g	79.9	(22%-152%)
13C-1,2,3,7,8-PeCDF		1670	2000	pg/g	83.7	(21%-192%)
13C-2,3,4,7,8-PeCDF		1530	2000	pg/g	76.7	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		1510	2000	pg/g	75.7	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		1440	2000	pg/g	71.9	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		1530	2000	pg/g	76.5	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		1580	2000	pg/g	79.0	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		1420	2000	pg/g	71.2	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		1530	2000	pg/g	76.3	(20%-186%)
37Cl-2,3,7,8-TCDD		168	200	pg/g	84.2	(31%-191%)

**Comments:**

**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

SDG Number: A0E0214	Client: APEX001	Project: APEX00217
Lab Sample ID: 12026719	Date Collected: 05/05/2020 11:30	Matrix: SOIL
Client Sample: QC for batch 43951	Date Received: 05/20/2020 10:00	%Moisture: 24.5
Client ID: ISM-02_0520---After Processing(165		Prep Basis: Dry Weight
Batch ID: 43953	Method: EPA Method 1613B	
Run Date: 06/09/2020 00:12	Analyst: MLL	Instrument: HRP750
Data File: A08JUN20C-11		Dilution: 1
Prep Batch: 43951	Prep Method: EPA Method 1613B-3546	
Prep Date: 05-JUN-20	Prep Aliquot: 1.04 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		268	pg/g	2.00	12.7
40321-76-4	1,2,3,7,8-PeCDD		1400	pg/g	3.54	63.6
39227-28-6	1,2,3,4,7,8-HxCDD		1350	pg/g	3.49	63.6
57653-85-7	1,2,3,6,7,8-HxCDD		1370	pg/g	3.36	63.6
19408-74-3	1,2,3,7,8,9-HxCDD		1390	pg/g	3.49	63.6
35822-46-9	1,2,3,4,6,7,8-HpCDD		1990	pg/g	5.78	63.6
3268-87-9	1,2,3,4,6,7,8,9-OCDD		11300	pg/g	9.95	127
51207-31-9	2,3,7,8-TCDF		233	pg/g	1.96	12.7
57117-41-6	1,2,3,7,8-PeCDF		1260	pg/g	3.11	63.6
57117-31-4	2,3,4,7,8-PeCDF		1380	pg/g	2.95	63.6
70648-26-9	1,2,3,4,7,8-HxCDF		1310	pg/g	3.74	63.6
57117-44-9	1,2,3,6,7,8-HxCDF		1320	pg/g	3.97	63.6
72918-21-9	1,2,3,7,8,9-HxCDF		1280	pg/g	4.81	63.6
60851-34-5	2,3,4,6,7,8-HxCDF		1270	pg/g	3.77	63.6
67562-39-4	1,2,3,4,6,7,8-HpCDF		1480	pg/g	3.84	63.6
55673-89-7	1,2,3,4,7,8,9-HpCDF		1260	pg/g	4.86	63.6
39001-02-0	1,2,3,4,6,7,8,9-OCDF		2790	pg/g	6.06	127

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1810	2550	pg/g	71.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		1770	2550	pg/g	69.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		2010	2550	pg/g	79.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1880	2550	pg/g	74.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		2380	2550	pg/g	93.7	(23%-140%)
13C-OCDD		4490	5090	pg/g	88.2	(17%-157%)
13C-2,3,7,8-TCDF		1990	2550	pg/g	78.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		1800	2550	pg/g	70.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		1710	2550	pg/g	67.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1870	2550	pg/g	73.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1750	2550	pg/g	68.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1930	2550	pg/g	76.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1960	2550	pg/g	76.9	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		2020	2550	pg/g	79.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		2280	2550	pg/g	89.6	(26%-138%)
37Cl-2,3,7,8-TCDD		211	255	pg/g	82.7	(35%-197%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

SDG Number: A0E0214	Client: APEX001	Project: APEX00217
Lab Sample ID: 12026720	Date Collected: 05/05/2020 11:30	Matrix: SOIL
Client Sample: QC for batch 43951	Date Received: 05/20/2020 10:00	%Moisture: 24.5
Client ID: ISM-02_0520---After Processing(165		Prep Basis: Dry Weight
Batch ID: 43953	Method: EPA Method 1613B	
Run Date: 06/09/2020 01:00	Analyst: MLL	Instrument: HRP750
Data File: A08JUN20C-12		Dilution: 1
Prep Batch: 43951	Prep Method: EPA Method 1613B-3546	
Prep Date: 05-JUN-20	Prep Aliquot: 1.08 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		271	pg/g	1.84	12.3
40321-76-4	1,2,3,7,8-PeCDD		1440	pg/g	2.97	61.3
39227-28-6	1,2,3,4,7,8-HxCDD		1360	pg/g	3.33	61.3
57653-85-7	1,2,3,6,7,8-HxCDD		1400	pg/g	3.24	61.3
19408-74-3	1,2,3,7,8,9-HxCDD		1420	pg/g	3.33	61.3
35822-46-9	1,2,3,4,6,7,8-HpCDD		2110	pg/g	6.10	61.3
3268-87-9	1,2,3,4,6,7,8,9-OCDD		12200	pg/g	8.80	123
51207-31-9	2,3,7,8-TCDF		233	pg/g	1.63	12.3
57117-41-6	1,2,3,7,8-PeCDF		1280	pg/g	2.75	61.3
57117-31-4	2,3,4,7,8-PeCDF		1410	pg/g	2.53	61.3
70648-26-9	1,2,3,4,7,8-HxCDF		1330	pg/g	3.26	61.3
57117-44-9	1,2,3,6,7,8-HxCDF		1380	pg/g	3.33	61.3
72918-21-9	1,2,3,7,8,9-HxCDF		1340	pg/g	4.27	61.3
60851-34-5	2,3,4,6,7,8-HxCDF		1320	pg/g	3.14	61.3
67562-39-4	1,2,3,4,6,7,8-HpCDF		1500	pg/g	4.00	61.3
55673-89-7	1,2,3,4,7,8,9-HpCDF		1300	pg/g	5.32	61.3
39001-02-0	1,2,3,4,6,7,8,9-OCDF		2790	pg/g	5.32	123

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1750	2450	pg/g	71.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		1880	2450	pg/g	76.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1930	2450	pg/g	78.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1770	2450	pg/g	72.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		2170	2450	pg/g	88.7	(23%-140%)
13C-OCDD		3970	4900	pg/g	81.0	(17%-157%)
13C-2,3,7,8-TCDF		1920	2450	pg/g	78.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		1930	2450	pg/g	78.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		1800	2450	pg/g	73.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1790	2450	pg/g	73.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1670	2450	pg/g	68.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1830	2450	pg/g	74.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1840	2450	pg/g	75.2	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		1870	2450	pg/g	76.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		2070	2450	pg/g	84.5	(26%-138%)
37Cl-2,3,7,8-TCDD		198	245	pg/g	80.7	(35%-197%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

July 10, 2020

Ms. Lisa Domenighini  
Apex Laboratories  
6700 SW Sandburg Street  
Portland, Oregon 97223

Re: 2018 DXN & PCB IDIQ  
Work Order: 16681  
SDG: A0E0214\_2

Dear Ms. Domenighini:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on June 16, 2020. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,



Cynde Larkins  
Project Manager

Enclosures

SUBCONTRACT ORDER

Apex Laboratories

AD 6/15/20 A0E0214

CFA WO #16681

SENDING LABORATORY:

Apex Laboratories  
6700 S.W. Sandburg Street  
Tigard, OR 97223  
Phone: (503) 718-2323  
Fax: (503) 336-0745  
Project Manager: Lisa Domenighini

RECEIVING LABORATORY:

Cape Fear Analytical, LLC  
3306 Kitty Hawk Rd Suite 120  
Wilmington, NC 28405  
Phone : (910) 795-0421  
Fax: -

Sample Name: ISM-01\_0520---After Processing Soil Sampled: 05/06/20 18:00 (A0E0214-02)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	06/01/20 17:00	11/02/20 18:00	
Containers Supplied: (B)2 oz Glass Jar			

Sample Name: ISM-02\_0520---After Processing Soil Sampled: 05/05/20 11:30 (A0E0214-04)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	06/01/20 17:00	11/01/20 11:30	
Containers Supplied: (B)2 oz Glass Jar			

Sample Name: ISM-03\_0520---After Processing Soil Sampled: 05/07/20 12:30 (A0E0214-06)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	06/01/20 17:00	11/03/20 12:30	
Containers Supplied: (B)2 oz Glass Jar			

Sample Name: ISM-04\_0520---After Processing Soil Sampled: 05/06/20 13:00 (A0E0214-08)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	06/01/20 17:00	11/02/20 13:00	
Containers Supplied: (B)2 oz Glass Jar			

Standard TAT  
See Page 2

Released By: [Signature] Date: 6/15/20 14:35 Received By: [Signature] Date: 16 JUN 20 @ 1014

Released By: Fed Ex (Shipper) Date:  Received By: Cynde Larkins Date:

Fed Ex (Shipper)



SUBCONTRACT ORDER

Apex Laboratories

COB 6/15/20 A0E0214

8

CFA NO# 1668

Sample Name: ISM-05\_0520---After Processing Soil Sampled: 05/07/20 10:00 (A0E0214-10)

Analysis Due Expires Comments

1613B Dioxins and Furans (SUB) 07/07/20 17:00 11/03/20 10:00 added 6/15/2020

Containers Supplied: (B)4 oz Glass Jar

Sample Name: ISM-06\_0520---After Processing Soil Sampled: 05/07/20 15:30 (A0E0214-12)

Analysis Due Expires Comments

1613B Dioxins and Furans (SUB) 06/01/20 17:00 11/03/20 15:30 COB 6/15/20

Containers Supplied: (B)2 oz Glass Jar

Sample Name: ISM-07\_0520---After Processing Soil Sampled: 05/05/20 14:30 (A0E0214-14)

Analysis Due Expires Comments

1613B Dioxins and Furans (SUB) 06/01/20 17:00 11/01/20 14:30 lab duplicate for 214-21

Containers Supplied: (B)2 oz Glass Jar

Sample Name: ISM-08\_0520---After Processing Soil Sampled: 05/05/20 16:30 (A0E0214-16)

Analysis Due Expires Comments

1613B Dioxins and Furans (SUB) 07/07/20 17:00 11/01/20 16:30

Containers Supplied: (B)4 oz Glass Jar

Sample Name: ISM-104\_0520---After Processing Soil Sampled: 05/06/20 18:00 (A0E0214-18)

Analysis Due Expires Comments

1613B Dioxins and Furans (SUB) 06/01/20 17:00 11/02/20 18:00 COB 6/15/20

Containers Supplied: (B)2 oz Glass Jar

Sample Name: ISM-204\_0520---After Processing Soil Sampled: 05/06/20 14:00 (A0E0214-20)

Analysis Due Expires Comments

1613B Dioxins and Furans (SUB) 06/01/20 17:00 11/02/20 14:00

Containers Supplied: (B)2 oz Glass Jar

Standard TAT

See Page 2

temp. = 4.8°C

MAJ 6/15/20 14:35

Fed Ex (Shipper)

Released By Date Received By Date

Fed Ex (Shipper)

Cynde Larkins 16 JUN 20 @ 1014

Released By Date Received By Date

SUBCONTRACT ORDER

Apex Laboratories

OB 6/15/20

A0E0214

CFA NO#16681

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) Containers Supplied: (A)2 oz Glass Jar	06/01/20 17:00	11/01/20 14:30	OB 6/15/20

Standard TAT

See Page 2

Released By	Date	Received By	Date
<i>[Signature]</i>	6/15/20 14:35	Fed Ex (Shipper)	
Released By	Date	Received By	Date
Fed Ex (Shipper)		Cynde Larkins	16 JUN 20 @ 10:14



**SAMPLE RECEIPT CHECKLIST**  
Cape Fear Analytical

Client: <u>APEX</u>	Work Order: <u>16681</u>
Shipping Company: <u>FedEx</u>	Date/Time Received: <u>16 JUN 20 1014</u>

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Samples identified as Foreign Soil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Samples < 2x background?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

\* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Air Witness: \_\_\_\_\_

#	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: seals broken    damaged container    leaking container    other(describe)
2	Custody seal/s present on cooler?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Seal intact?    Yes <u>No</u>
3	Chain of Custody documents included with shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4	Samples requiring cold preservation within 0-6°C?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preservation Method: <u>ice bags</u> blue ice    dry ice    none    other (describe)    Temperature Blank present: <u>Yes</u> No <u>4.7° + 0.1 = 4.8°C</u>
5	Aqueous samples found to have visible solids?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample IDs, containers affected:
5	Samples requiring chemical preservation at proper pH?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample IDs, containers affected and pH observed:
7	Samples requiring preservation have no residual chlorine?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If preservative added, Lot#:
8	Samples received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample IDs, tests affected:
9	Sample IDs on COC match IDs on containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample IDs, containers affected:
10	Date & time of COC match date & time on containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample IDs, containers affected:
11	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	List type and number of containers / Sample IDs, containers affected: <u>1 - 4 oz clear glass soil jar per sample</u> <u>2 total</u>
12	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>COC is 3 pages, only samples from page 2 are to be analyzed.</u>

Comments:

Checklist performed by: Initials: CJ    Date: 16 JUN 20



# **High Resolution Dioxins and Furans Analysis**

# Case Narrative

**HDOX Case Narrative  
Apex Laboratories (APEX)  
SDG A0E0214\_2  
Work Order 16681**

**Method/Analysis Information**

**Product:** Dioxins/Furans by EPA Method 1613B in Solids  
Analytical Method: EPA Method 1613B  
Extraction Method: SW846 3540C  
Analytical Batch Number: 44118, 44159  
Clean Up Batch Number: 44117, 44158  
Extraction Batch Number: 44116, 44157

**Sample Analysis**

Samples were received at 4.8°C. (16681001, 16681002). The following samples were analyzed using the analytical protocol as established in:

<b>Sample ID</b>	<b>Client ID</b>
12026877	Method Blank (MB)
12026878	Laboratory Control Sample (LCS)
12026879	Laboratory Control Sample Duplicate (LCSD)
12026880	16681001(ISM-05_0520---After Processing) Matrix Spike (MS)
12026881	16681001(ISM-05_0520---After Processing) Matrix Spike Duplicate (MSD)
12026920	Method Blank (MB)
12026921	Laboratory Control Sample (LCS)
12026922	Laboratory Control Sample Duplicate (LCSD)
12026923	16681002(ISM-08_0520---After Processing) Matrix Spike (MS)
12026924	16681002(ISM-08_0520---After Processing) Matrix Spike Duplicate (MSD)
16681001	ISM-05_0520---After Processing
16681002	ISM-08_0520---After Processing

The samples in this SDG were analyzed on a "dry weight" basis.

**SOP Reference**

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 17.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

## **Calibration Information**

### **Initial Calibration**

All initial calibration requirements have been met for this sample delivery group (SDG).

### **Continuing Calibration Verification (CCV) Requirements**

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

## **Quality Control (QC) Information**

### **Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

### **Method Blank (MB) Statement**

The MB(s) analyzed with this SDG met the acceptance criteria.

### **Surrogate Recoveries**

All surrogate recoveries were within the established acceptance criteria for this SDG.

### **Laboratory Control Sample (LCS) Recovery**

The LCS spike recoveries met the acceptance limits.

### **Laboratory Control Sample Duplicate (LCSD) Recovery**

The LCSD spike recoveries met the acceptance limits.

### **LCS/LCSD Relative Percent Difference (RPD) Statement**

The RPD(s) between the LCS and LCSD met the acceptance limits.

### **QC Sample Designation**

Sample 16681001 (ISM-05\_0520---After Processing)- Batch 44118 and 16681002 (ISM-08\_0520---After Processing)- Batch 44159 was selected for analysis as the matrix spike and matrix spike duplicate.

### **Matrix Spike/Duplicate (MS/MSD) Recovery Statement**

The MS recoveries for this SDG were not within the acceptance limits. The failures confirm in the matrix spike duplicate and are attributed to matrix interference. 12026880 (ISM-05\_0520---After Processing) and 12026881 (ISM-05\_0520---After Processing) - Batch 44118, 12026923 (ISM-08\_0520---After Processing) and 12026924 (ISM-08\_0520---After Processing) - Batch 44159.

### **MS/MSD Relative Percent Difference (RPD) Statement**

One RPD was outside the acceptance limits. Sample data is validated based on acceptable LCS/LCSD results. 16681002 (ISM-08\_0520---After Processing)- Batch 44159.

## **Technical Information**

### **Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

### **Preparation/Analytical Method Verification**

All procedures were performed as stated in the SOP.

### **Sample Dilutions**

Sample 16681002 (ISM-08\_0520---After Processing)- Batch 44159 was diluted 10x due to the presence of over-range target analytes.

### **Sample Re-extraction/Re-analysis**

The sample was re-extracted using a 1g aliquot due to high concentrations of over-range target analytes in the original extraction. 16681002 (ISM-08\_0520---After Processing) - Batch 44159.

## **Miscellaneous Information**

### **Nonconformance (NCR) Documentation**

The following NCR was generated for this SDG: 647861 Batch 44159.

### **Manual Integrations**

Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

### **Sample Preparation**

No difficulties were encountered during sample preparation.

## **Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

# Sample Data Summary

## Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

### Qualifier Definition Report for

APEX001 Apex Laboratories

Client SDG: A0E0214\_2 CFA Work Order: 16681


#### The Qualifiers in this report are defined as follows:

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a surrogate compound
- E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J Value is estimated
- K Estimated Maximum Possible Concentration
- U Analyte was analyzed for, but not detected above the specified detection limit.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

#### Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: 

Name: Erin Suhrie

Date: 09 JUL 2020

Title: Data Validator

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214_2	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16681001	<b>Date Collected:</b> 05/07/2020 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 06/16/2020 10:14	<b>%Moisture:</b> 4.5
<b>Client ID:</b> ISM-05_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 44118	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 07/01/2020 09:46	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP757
<b>Data File:</b> e01jul20a-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 44116	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 28-JUN-20	<b>Prep Aliquot:</b> 11.24 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		1.63	pg/g	0.190	0.932

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
---------------------------	------	--------	---------	-------	-----------	-------------------

**Comments:**

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214_2	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16681001	<b>Date Collected:</b> 05/07/2020 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 06/16/2020 10:14	<b>%Moisture:</b> 4.5
<b>Client ID:</b> ISM-05_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 44118	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/30/2020 11:54	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP763
<b>Data File:</b> b29jun20c_3-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 44116	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 28-JUN-20	<b>Prep Aliquot:</b> 11.24 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		2.54	pg/g	0.131	0.932
40321-76-4	1,2,3,7,8-PeCDD	J	4.22	pg/g	0.144	4.66
39227-28-6	1,2,3,4,7,8-HxCDD		8.05	pg/g	0.317	4.66
57653-85-7	1,2,3,6,7,8-HxCDD		33.4	pg/g	0.313	4.66
19408-74-3	1,2,3,7,8,9-HxCDD		16.5	pg/g	0.322	4.66
35822-46-9	1,2,3,4,6,7,8-HpCDD		745	pg/g	1.06	4.66
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	5810	pg/g	1.64	9.32
51207-31-9	2,3,7,8-TCDF		1.70	pg/g	0.190	0.932
57117-41-6	1,2,3,7,8-PeCDF	J	3.67	pg/g	0.176	4.66
57117-31-4	2,3,4,7,8-PeCDF		8.14	pg/g	0.165	4.66
70648-26-9	1,2,3,4,7,8-HxCDF		22.7	pg/g	0.205	4.66
57117-44-9	1,2,3,6,7,8-HxCDF		9.31	pg/g	0.205	4.66
60851-34-5	2,3,4,6,7,8-HxCDF		10.6	pg/g	0.211	4.66
72918-21-9	1,2,3,7,8,9-HxCDF		5.43	pg/g	0.267	4.66
67562-39-4	1,2,3,4,6,7,8-HpCDF		136	pg/g	0.371	4.66
55673-89-7	1,2,3,4,7,8,9-HpCDF		9.09	pg/g	0.501	4.66
39001-02-0	1,2,3,4,6,7,8,9-OCDF		266	pg/g	0.403	9.32
41903-57-5	Total TeCDD	J	15.2	pg/g	0.131	0.932
36088-22-9	Total PeCDD	J	31.8	pg/g	0.144	4.66
34465-46-8	Total HxCDD	J	206	pg/g	0.313	4.66
37871-00-4	Total HpCDD		1590	pg/g	1.06	4.66
30402-14-3	Total TeCDF	JK	21.7	pg/g	0.190	0.932
30402-15-4	Total PeCDF	J	106	pg/g	0.0528	4.66
55684-94-1	Total HxCDF	J	295	pg/g	0.205	4.66
38998-75-3	Total HpCDF	J	433	pg/g	0.371	4.66
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		30.8	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		30.8	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		157	186	pg/g	84.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		156	186	pg/g	83.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		157	186	pg/g	84.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		140	186	pg/g	75.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		168	186	pg/g	90.2	(23%-140%)
13C-OCDD		398	373	pg/g	107	(17%-157%)
13C-2,3,7,8-TCDF		146	186	pg/g	78.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		140	186	pg/g	75.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		148	186	pg/g	79.3	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		138	186	pg/g	73.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		131	186	pg/g	70.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		140	186	pg/g	75.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		145	186	pg/g	77.6	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214_2	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16681001	<b>Date Collected:</b> 05/07/2020 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 06/16/2020 10:14	<b>%Moisture:</b> 4.5
<b>Client ID:</b> ISM-05_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 44118	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/30/2020 11:54	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP763
<b>Data File:</b> b29jun20c_3-4		<b>Dilution:</b> 1
<b>Prep Batch:</b> 44116	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 28-JUN-20	<b>Prep Aliquot:</b> 11.24 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			141	186	pg/g	75.7 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			158	186	pg/g	84.9 (26%-138%)
37Cl-2,3,7,8-TCDD			15.7	18.6	pg/g	84.2 (35%-197%)

**Comments:**

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> A0E0214_2	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 16681002	<b>Date Collected:</b> 05/05/2020 16:30	<b>Matrix:</b> SOIL
<b>Client Sample:</b> 1613B Soil	<b>Date Received:</b> 06/16/2020 10:14	<b>%Moisture:</b> 7
<b>Client ID:</b> ISM-08_0520---After Processing		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 44159	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 07/07/2020 18:21	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP763
<b>Data File:</b> b07jul20a_2-4		<b>Dilution:</b> 10
<b>Prep Batch:</b> 44157	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 06-JUL-20	<b>Prep Aliquot:</b> 1.02 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	57.2	pg/g	23.2	105
40321-76-4	1,2,3,7,8-PeCDD	J	416	pg/g	28.7	527
39227-28-6	1,2,3,4,7,8-HxCDD		611	pg/g	72.3	527
57653-85-7	1,2,3,6,7,8-HxCDD		2570	pg/g	70.4	527
19408-74-3	1,2,3,7,8,9-HxCDD		1310	pg/g	72.5	527
35822-46-9	1,2,3,4,6,7,8-HpCDD		83500	pg/g	322	527
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	845000	pg/g	540	1050
51207-31-9	2,3,7,8-TCDF	J	52.1	pg/g	30.6	105
57117-41-6	1,2,3,7,8-PeCDF	J	160	pg/g	24.9	527
57117-31-4	2,3,4,7,8-PeCDF	J	249	pg/g	21.9	527
70648-26-9	1,2,3,4,7,8-HxCDF	J	483	pg/g	46.4	527
57117-44-9	1,2,3,6,7,8-HxCDF	J	311	pg/g	51.2	527
60851-34-5	2,3,4,6,7,8-HxCDF	J	450	pg/g	48.3	527
72918-21-9	1,2,3,7,8,9-HxCDF	J	243	pg/g	73.6	527
67562-39-4	1,2,3,4,6,7,8-HpCDF		10300	pg/g	110	527
55673-89-7	1,2,3,4,7,8,9-HpCDF		673	pg/g	145	527
39001-02-0	1,2,3,4,6,7,8,9-OCDF		37000	pg/g	152	1050
41903-57-5	Total TeCDD	JK	820	pg/g	23.2	105
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	211	pg/g	23.2	105
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	2570	pg/g	28.7	527
36088-22-9	Total PeCDD	JK	2680	pg/g	28.7	527
34465-46-8	Total HxCDD	JK	18600	pg/g	70.4	527
34465-46-8	Total Hexachlorodibenzo-p-dioxin		18100	pg/g	70.4	527
37871-00-4	Total HpCDD		188000	pg/g	322	527
37871-00-4	Total Heptachlorodibenzo-p-dioxin		188000	pg/g	322	527
30402-14-3	Total TeCDF	JK	486	pg/g	30.6	105
30402-14-3	Total Tetrachlorodibenzofuran	J	259	pg/g	30.6	105
30402-15-4	Total PeCDF	JK	4030	pg/g	11.8	527
30402-15-4	Total Pentachlorodibenzofuran	J	3910	pg/g	11.8	527
55684-94-1	Total HxCDF	J	16300	pg/g	46.4	527
55684-94-1	Total Hexachlorodibenzofuran	J	16300	pg/g	46.4	527
38998-75-3	Total Heptachlorodibenzofuran	J	39500	pg/g	110	527

**Comments:****E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range**J** Value is estimated**K** Estimated Maximum Possible Concentration

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

SDG Number: A0E0214_2	Client: APEX001	Project: APEX00217
Lab Sample ID: 16681002	Date Collected: 05/05/2020 16:30	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 06/16/2020 10:14	%Moisture: 7
Client ID: ISM-08_0520---After Processing		Prep Basis: Dry Weight
Batch ID: 44159	Method: EPA Method 1613B	Instrument: HRP763
Run Date: 07/07/2020 18:21	Analyst: MLL	Dilution: 10
Data File: b07jul20a_2-4		
Prep Batch: 44157	Prep Method: SW846 3540C	
Prep Date: 06-JUL-20	Prep Aliquot: 1.02 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38998-75-3	Total HpCDF	J	39500	pg/g	110	527
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		2360	pg/g		
3333-30-0	TEQ WHO2005 ND=0		2300	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		2360	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		2310	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1640	2110	pg/g	77.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		1680	2110	pg/g	79.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1630	2110	pg/g	77.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1920	2110	pg/g	91.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1770	2110	pg/g	83.8	(23%-140%)
13C-OCDD		3680	4220	pg/g	87.3	(17%-157%)
13C-2,3,7,8-TCDF		1580	2110	pg/g	74.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		1610	2110	pg/g	76.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		1700	2110	pg/g	80.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1710	2110	pg/g	81.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1730	2110	pg/g	82.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1800	2110	pg/g	85.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1700	2110	pg/g	80.6	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		1600	2110	pg/g	76.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		1660	2110	pg/g	78.6	(26%-138%)
37Cl-2,3,7,8-TCDD		175	211	pg/g	82.9	(35%-197%)

**Comments:****E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range**J** Value is estimated**K** Estimated Maximum Possible Concentration

# Quality Control Summary

**Hi-Res Dioxins/Furans**  
**Surrogate Recovery Report**

SDG Number: A0E0214\_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12026878	LCS for batch 44116	13C-2,3,7,8-TCDD		85.2	(20%-175%)
		13C-1,2,3,7,8-PeCDD		86.6	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		80.6	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		79.9	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		89.9	(22%-166%)
		13C-OCDD		99.6	(13%-199%)
		13C-2,3,7,8-TCDF		77.7	(22%-152%)
		13C-1,2,3,7,8-PeCDF		80.7	(21%-192%)
		13C-2,3,4,7,8-PeCDF		82.3	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		76.7	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		72.9	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		75.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		77.8	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		77.5	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		87.3	(20%-186%)
		37Cl-2,3,7,8-TCDD		93.1	(31%-191%)
12026879	LCSD for batch 44116	13C-2,3,7,8-TCDD		86.3	(20%-175%)
		13C-1,2,3,7,8-PeCDD		85.4	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		79.7	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		79.9	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		91.2	(22%-166%)
		13C-OCDD		98.4	(13%-199%)
		13C-2,3,7,8-TCDF		77.4	(22%-152%)
		13C-1,2,3,7,8-PeCDF		79.4	(21%-192%)
		13C-2,3,4,7,8-PeCDF		80.9	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		77.1	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		72.6	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		75.6	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		80.2	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		77.4	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		86.9	(20%-186%)
		37Cl-2,3,7,8-TCDD		91.8	(31%-191%)
12026877	MB for batch 44116	13C-2,3,7,8-TCDD		80.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		81.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		74.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		83.9	(23%-140%)
		13C-OCDD		90.7	(17%-157%)
		13C-2,3,7,8-TCDF		71.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		75.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		76.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		72.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		67.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		71.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		74.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		71.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		79.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		92.4	(35%-197%)
16681001	ISM-05_0520---After Processing	13C-2,3,7,8-TCDD		84.1	(25%-164%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: A0E0214\_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
16681001	ISM-05_0520---After Processing	13C-1,2,3,7,8-PeCDD		83.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		84.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		90.2	(23%-140%)
		13C-OCDD		107	(17%-157%)
		13C-2,3,7,8-TCDF		78.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		75.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		79.3	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		73.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		77.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		84.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		84.2	(35%-197%)
		12026880	ISM-05_0520---After Processing(16681001M)	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				82.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				82.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				77.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				91.6	(23%-140%)
13C-OCDD				114	(17%-157%)
13C-2,3,7,8-TCDF				76.0	(24%-169%)
13C-1,2,3,7,8-PeCDF				75.8	(24%-185%)
13C-2,3,4,7,8-PeCDF				77.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				73.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				71.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				74.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				78.7	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				76.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF				87.2	(26%-138%)
37Cl-2,3,7,8-TCDD				82.1	(35%-197%)
12026881	ISM-05_0520---After Processing(16681001M)	13C-2,3,7,8-TCDD		82.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		82.1	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		77.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		76.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		90.5	(23%-140%)
		13C-OCDD		107	(17%-157%)
		13C-2,3,7,8-TCDF		75.7	(24%-169%)
		13C-1,2,3,7,8-PeCDF		72.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		75.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		71.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		68.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		72.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		74.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		83.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		84.2	(35%-197%)
12026921	LCS for batch 44157	13C-2,3,7,8-TCDD		84.9	(20%-175%)
		13C-1,2,3,7,8-PeCDD		84.3	(21%-227%)

**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: A0E0214\_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12026921	LCS for batch 44157	13C-1,2,3,4,7,8-HxCDD		69.6	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		79.0	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		76.9	(22%-166%)
		13C-OCDD		72.5	(13%-199%)
		13C-2,3,7,8-TCDF		74.7	(22%-152%)
		13C-1,2,3,7,8-PeCDF		83.2	(21%-192%)
		13C-2,3,4,7,8-PeCDF		82.9	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		71.2	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		72.7	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		76.1	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		76.5	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		70.1	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		75.1	(20%-186%)
		37Cl-2,3,7,8-TCDD		89.4	(31%-191%)
12026922	LCSD for batch 44157	13C-2,3,7,8-TCDD		81.0	(20%-175%)
		13C-1,2,3,7,8-PeCDD		84.1	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		70.3	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		77.8	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		77.5	(22%-166%)
		13C-OCDD		65.9	(13%-199%)
		13C-2,3,7,8-TCDF		74.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		80.5	(21%-192%)
		13C-2,3,4,7,8-PeCDF		82.4	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		68.9	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		74.8	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		73.6	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		75.9	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		69.8	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		73.9	(20%-186%)		
37Cl-2,3,7,8-TCDD		89.0	(31%-191%)		
12026920	MB for batch 44157	13C-2,3,7,8-TCDD		83.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		86.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		70.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		78.5	(23%-140%)
		13C-OCDD		66.5	(17%-157%)
		13C-2,3,7,8-TCDF		75.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		81.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		72.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.0	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		70.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		72.6	(26%-138%)		
37Cl-2,3,7,8-TCDD		88.1	(35%-197%)		
16681002	ISM-08_0520---After Processing	13C-2,3,7,8-TCDD		77.8	D (25%-164%)
		13C-1,2,3,7,8-PeCDD		79.8	D (25%-181%)
		13C-1,2,3,4,7,8-HxCDD		77.5	D (32%-141%)



**Hi-Res Dioxins/Furans  
Surrogate Recovery Report**

SDG Number: A0E0214\_2

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
16681002	ISM-08_0520---After Processing	13C-1,2,3,6,7,8-HxCDD		91.2 D	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		83.8 D	(23%-140%)
		13C-OCDD		87.3 D	(17%-157%)
		13C-2,3,7,8-TCDF		74.9 D	(24%-169%)
		13C-1,2,3,7,8-PeCDF		76.6 D	(24%-185%)
		13C-2,3,4,7,8-PeCDF		80.9 D	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		81.0 D	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		82.2 D	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		85.6 D	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.6 D	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		76.1 D	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		78.6 D	(26%-138%)
		37Cl-2,3,7,8-TCDD		82.9 D	(35%-197%)
12026923	ISM-08_0520---After Processing(16681002M)	13C-2,3,7,8-TCDD		111 D	(25%-164%)
		13C-1,2,3,7,8-PeCDD		116 D	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		104 D	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		116 D	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		117 D	(23%-140%)
		13C-OCDD		130 D	(17%-157%)
		13C-2,3,7,8-TCDF		105 D	(24%-169%)
		13C-1,2,3,7,8-PeCDF		116 D	(24%-185%)
		13C-2,3,4,7,8-PeCDF		115 D	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		106 D	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		112 D	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		112 D	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		106 D	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		103 D	(28%-143%)		
13C-1,2,3,4,7,8,9-HpCDF		108 D	(26%-138%)		
37Cl-2,3,7,8-TCDD		114 D	(35%-197%)		
12026924	ISM-08_0520---After Processing(16681002M)	13C-2,3,7,8-TCDD		99.5 D	(25%-164%)
		13C-1,2,3,7,8-PeCDD		103 D	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		134 D	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		151 * D	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		143 * D	(23%-140%)
		13C-OCDD		161 * D	(17%-157%)
		13C-2,3,7,8-TCDF		92.5 D	(24%-169%)
		13C-1,2,3,7,8-PeCDF		97.9 D	(24%-185%)
		13C-2,3,4,7,8-PeCDF		102 D	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		139 D	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		139 * D	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		141 * D	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		134 D	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		134 D	(28%-143%)		
13C-1,2,3,4,7,8,9-HpCDF		129 D	(26%-138%)		
37Cl-2,3,7,8-TCDD		101 D	(35%-197%)		

\* Recovery outside Acceptance Limits

# Column to be used to flag recovery values

D Sample Diluted

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

SDG Number: A0E0214\_2

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 44116

Matrix: SOIL

Lab Sample ID: 12026878

Instrument: HRP763

Analysis Date: 06/30/2020 09:31

Dilution: 1

Analyst: MLL

Prep Batch ID:44116

Batch ID: 44118

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS 2,3,7,8-TCDD	20.0	19.0	95.2	67-158
40321-76-4	LCS 1,2,3,7,8-PeCDD	100	99.3	99.3	70-142
39227-28-6	LCS 1,2,3,4,7,8-HxCDD	100	97.5	97.5	70-164
57653-85-7	LCS 1,2,3,6,7,8-HxCDD	100	100	100	76-134
19408-74-3	LCS 1,2,3,7,8,9-HxCDD	100	104	104	64-162
35822-46-9	LCS 1,2,3,4,6,7,8-HpCDD	100	101	101	70-140
3268-87-9	LCS 1,2,3,4,6,7,8,9-OCDD	200	197	98.4	78-144
51207-31-9	LCS 2,3,7,8-TCDF	20.0	19.1	95.3	75-158
57117-41-6	LCS 1,2,3,7,8-PeCDF	100	99.4	99.4	80-134
57117-31-4	LCS 2,3,4,7,8-PeCDF	100	101	101	68-160
70648-26-9	LCS 1,2,3,4,7,8-HxCDF	100	99.2	99.2	72-134
57117-44-9	LCS 1,2,3,6,7,8-HxCDF	100	99.2	99.2	84-130
60851-34-5	LCS 2,3,4,6,7,8-HxCDF	100	100	100	70-156
72918-21-9	LCS 1,2,3,7,8,9-HxCDF	100	101	101	78-130
67562-39-4	LCS 1,2,3,4,6,7,8-HpCDF	100	102	102	82-122
55673-89-7	LCS 1,2,3,4,7,8,9-HpCDF	100	97.9	97.9	78-138
39001-02-0	LCS 1,2,3,4,6,7,8,9-OCDF	200	191	95.3	63-170

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

SDG Number: A0E0214\_2

Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 44116

Matrix: SOIL

Lab Sample ID: 12026879

Instrument: HRP763

Analysis Date: 06/30/2020 10:18

Dilution: 1

Analyst: MLL

Prep Batch ID: 44116

Batch ID: 44118

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD 2,3,7,8-TCDD	20.0	19.1	95.3	67-158	0.0840	0-20
40321-76-4	LCSD 1,2,3,7,8-PeCDD	100	98.8	98.8	70-142	0.563	0-20
39227-28-6	LCSD 1,2,3,4,7,8-HxCDD	100	97.5	97.5	70-164	0.0123	0-20
57653-85-7	LCSD 1,2,3,6,7,8-HxCDD	100	100	100	76-134	0.00400	0-20
19408-74-3	LCSD 1,2,3,7,8,9-HxCDD	100	105	105	64-162	1.09	0-20
35822-46-9	LCSD 1,2,3,4,6,7,8-HpCDD	100	101	101	70-140	0.0934	0-20
3268-87-9	LCSD 1,2,3,4,6,7,8,9-OCDD	200	196	98.1	78-144	0.313	0-20
51207-31-9	LCSD 2,3,7,8-TCDF	20.0	19.0	94.9	75-158	0.379	0-20
57117-41-6	LCSD 1,2,3,7,8-PeCDF	100	99.7	99.7	80-134	0.299	0-20
57117-31-4	LCSD 2,3,4,7,8-PeCDF	100	102	102	68-160	0.396	0-20
70648-26-9	LCSD 1,2,3,4,7,8-HxCDF	100	98.4	98.4	72-134	0.883	0-20
57117-44-9	LCSD 1,2,3,6,7,8-HxCDF	100	100	100	84-130	1.09	0-20
60851-34-5	LCSD 2,3,4,6,7,8-HxCDF	100	99.5	99.5	70-156	0.833	0-20
72918-21-9	LCSD 1,2,3,7,8,9-HxCDF	100	99.9	99.9	78-130	1.52	0-20
67562-39-4	LCSD 1,2,3,4,6,7,8-HpCDF	100	101	101	82-122	1.00	0-20
55673-89-7	LCSD 1,2,3,4,7,8,9-HpCDF	100	97.5	97.5	78-138	0.459	0-20
39001-02-0	LCSD 1,2,3,4,6,7,8,9-OCDF	200	193	96.7	63-170	1.51	0-20

**Hi-Res Dioxins/Furans  
Quality Control Summary  
Spike Recovery Report**

<p><b>SDG Number:</b> A0E0214_2</p> <p><b>Client ID:</b> ISM-05_0520---After Processing(16681001M</p> <p><b>Lab Sample ID:</b> 12026880</p> <p><b>Instrument:</b> HRP757</p> <p><b>Analyst:</b> MJC</p>	<p><b>Sample Type:</b> Matrix Spike</p> <p><b>Matrix:</b> SOIL</p> <p><b>%Moisture:</b> 4.5</p> <p><b>Analysis Date:</b> 07/01/2020 10:10</p> <p><b>Prep Batch ID:</b>44116</p> <p><b>Batch ID:</b> 44118</p> <p><b>Dilution:</b> 1</p>
---	---

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
51207-31-9	MS 2,3,7,8-TCDF	18.6	19.8	98	70-130

Hi-Res Dioxins/Furans  
 Quality Control Summary  
 Spike Recovery Report

SDG Number: A0E0214_2	Sample Type: Matrix Spike Duplicate
Client ID: ISM-05_0520---After Processing(16681001M	Matrix: SOIL
	%Moisture: 4.5
Lab Sample ID: 12026881	
Instrument: HRP757	Analysis Date: 07/01/2020 10:34 Dilution: 1
Analyst: MJC	Prep Batch ID:44116
	Batch ID: 44118

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
51207-31-9	MSD 2,3,7,8-TCDF	18.6	20.3	100	70-130	2.09	0-20

Hi-Res Dioxins/Furans  
Quality Control Summary  
Spike Recovery Report

SDG Number: A0E0214\_2  
Client ID: ISM-05\_0520---After  
Processing(16681001M)  
Lab Sample ID: 12026880  
Instrument: HRP763  
Analyst: MLL

Sample Type: Matrix Spike  
Matrix: SOIL  
%Moisture: 4.5  
Analysis Date: 06/30/2020 12:43  
Prep Batch ID:44116  
Batch ID: 44118  
Dilution: 1

CAS No.	Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	
1746-01-6	MS	2,3,7,8-TCDD		18.6	20.5	96.8	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	J	93.0	96.5	99.3	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD		93.0	99.4	98.3	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD		93.0	123	95.9	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD		93.0	119	110	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD		93.0	825	86.1	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	E	186	5800	-9.28 *	70-130
51207-31-9	MS	2,3,7,8-TCDF		18.6	19.3	94.7	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	J	93.0	94.6	97.8	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF		93.0	101	99.7	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF		93.0	117	101	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF		93.0	100	97.6	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF		93.0	101	97.4	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF		93.0	96.6	98	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF		93.0	229	99.5	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF		93.0	100	98	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF		186	436	91.4	70-130

Hi-Res Dioxins/Furans  
Quality Control Summary  
Spike Recovery Report

SDG Number: A0E0214\_2

Sample Type: Matrix Spike Duplicate

Client ID: ISM-05\_0520---After  
Processing(16681001M)

Matrix: SOIL

%Moisture: 4.5

Lab Sample ID: 12026881

Instrument: HRP763

Analysis Date: 06/30/2020 13:31

Dilution: 1

Analyst: MLL

Prep Batch ID:44116

Batch ID: 44118

CAS No.	Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	MSD 2,3,7,8-TCDD	18.6		20.2	94.8	70-130	1.92	0-20
40321-76-4	MSD 1,2,3,7,8-PeCDD	92.9	J	96.7	99.6	70-130	0.225	0-20
39227-28-6	MSD 1,2,3,4,7,8-HxCDD	92.9		99.4	98.4	70-130	0.000834	0-20
57653-85-7	MSD 1,2,3,6,7,8-HxCDD	92.9		124	97.2	70-130	0.853	0-20
19408-74-3	MSD 1,2,3,7,8,9-HxCDD	92.9		117	108	70-130	1.46	0-20
35822-46-9	MSD 1,2,3,4,6,7,8-HpCDD	92.9		834	96.8	70-130	1.19	0-20
3268-87-9	MSD 1,2,3,4,6,7,8,9-OCDD	186	E	5870	30.2 *	70-130	1.26	0-20
51207-31-9	MSD 2,3,7,8-TCDF	18.6		19.3	94.7	70-130	0.0694	0-20
57117-41-6	MSD 1,2,3,7,8-PeCDF	92.9	J	97.5	101	70-130	3.04	0-20
57117-31-4	MSD 2,3,4,7,8-PeCDF	92.9		103	102	70-130	1.88	0-20
70648-26-9	MSD 1,2,3,4,7,8-HxCDF	92.9		117	102	70-130	0.715	0-20
57117-44-9	MSD 1,2,3,6,7,8-HxCDF	92.9		99.5	97.1	70-130	0.512	0-20
60851-34-5	MSD 2,3,4,6,7,8-HxCDF	92.9		103	99.8	70-130	2.13	0-20
72918-21-9	MSD 1,2,3,7,8,9-HxCDF	92.9		96.6	98.1	70-130	0.0383	0-20
67562-39-4	MSD 1,2,3,4,6,7,8-HpCDF	92.9		231	103	70-130	1.20	0-20
55673-89-7	MSD 1,2,3,4,7,8,9-HpCDF	92.9		104	102	70-130	3.42	0-20
39001-02-0	MSD 1,2,3,4,6,7,8,9-OCDF	186		444	95.4	70-130	1.65	0-20

**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

SDG Number: A0E0214\_2

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 44157

Matrix: SOIL

Lab Sample ID: 12026921

Instrument: HRP763

Analysis Date: 07/07/2020 15:57

Dilution: 1

Analyst: MLL

Prep Batch ID:44157

Batch ID: 44159

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS 2,3,7,8-TCDD	200	191	95.3	67-158
40321-76-4	LCS 1,2,3,7,8-PeCDD	1000	993	99.3	70-142
39227-28-6	LCS 1,2,3,4,7,8-HxCDD	1000	974	97.4	70-164
57653-85-7	LCS 1,2,3,6,7,8-HxCDD	1000	1020	102	76-134
19408-74-3	LCS 1,2,3,7,8,9-HxCDD	1000	1050	105	64-162
35822-46-9	LCS 1,2,3,4,6,7,8-HpCDD	1000	1000	100	70-140
3268-87-9	LCS 1,2,3,4,6,7,8,9-OCDD	2000	1880	94.1	78-144
51207-31-9	LCS 2,3,7,8-TCDF	200	192	96.2	75-158
57117-41-6	LCS 1,2,3,7,8-PeCDF	1000	933	93.3	80-134
57117-31-4	LCS 2,3,4,7,8-PeCDF	1000	953	95.3	68-160
70648-26-9	LCS 1,2,3,4,7,8-HxCDF	1000	945	94.5	72-134
57117-44-9	LCS 1,2,3,6,7,8-HxCDF	1000	984	98.4	84-130
60851-34-5	LCS 2,3,4,6,7,8-HxCDF	1000	932	93.2	70-156
72918-21-9	LCS 1,2,3,7,8,9-HxCDF	1000	926	92.6	78-130
67562-39-4	LCS 1,2,3,4,6,7,8-HpCDF	1000	1030	103	82-122
55673-89-7	LCS 1,2,3,4,7,8,9-HpCDF	1000	1010	101	78-138
39001-02-0	LCS 1,2,3,4,6,7,8,9-OCDF	2000	1960	97.9	63-170



**Hi-Res Dioxins/Furans**  
**Quality Control Summary**  
**Spike Recovery Report**

SDG Number: A0E0214\_2

Sample Type: Laboratory Control Sample Duplicate

Client ID: LCSD for batch 44157

Matrix: SOIL

Lab Sample ID: 12026922

Instrument: HRP763

Analysis Date: 07/07/2020 16:45

Dilution: 1

Analyst: MLL

Prep Batch ID: 44157

Batch ID: 44159

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD 2,3,7,8-TCDD	200	194	97.2	67-158	2.04	0-20
40321-76-4	LCSD 1,2,3,7,8-PeCDD	1000	1030	103	70-142	3.27	0-20
39227-28-6	LCSD 1,2,3,4,7,8-HxCDD	1000	984	98.4	70-164	1.02	0-20
57653-85-7	LCSD 1,2,3,6,7,8-HxCDD	1000	1030	103	76-134	1.54	0-20
19408-74-3	LCSD 1,2,3,7,8,9-HxCDD	1000	1080	108	64-162	2.56	0-20
35822-46-9	LCSD 1,2,3,4,6,7,8-HpCDD	1000	1020	102	70-140	1.54	0-20
3268-87-9	LCSD 1,2,3,4,6,7,8,9-OCDD	2000	2110	105	78-144	11.3	0-20
51207-31-9	LCSD 2,3,7,8-TCDF	200	195	97.3	75-158	1.14	0-20
57117-41-6	LCSD 1,2,3,7,8-PeCDF	1000	946	94.6	80-134	1.38	0-20
57117-31-4	LCSD 2,3,4,7,8-PeCDF	1000	990	99	68-160	3.81	0-20
70648-26-9	LCSD 1,2,3,4,7,8-HxCDF	1000	997	99.7	72-134	5.35	0-20
57117-44-9	LCSD 1,2,3,6,7,8-HxCDF	1000	978	97.8	84-130	0.561	0-20
60851-34-5	LCSD 2,3,4,6,7,8-HxCDF	1000	955	95.5	70-156	2.49	0-20
72918-21-9	LCSD 1,2,3,7,8,9-HxCDF	1000	929	92.9	78-130	0.341	0-20
67562-39-4	LCSD 1,2,3,4,6,7,8-HpCDF	1000	1050	105	82-122	1.60	0-20
55673-89-7	LCSD 1,2,3,4,7,8,9-HpCDF	1000	1010	101	78-138	0.736	0-20
39001-02-0	LCSD 1,2,3,4,6,7,8,9-OCDF	2000	2180	109	63-170	10.6	0-20

Hi-Res Dioxins/Furans  
Quality Control Summary  
Spike Recovery Report

SDG Number: A0E0214\_2  
Client ID: ISM-08\_0520---After  
Processing(16681002M)  
Lab Sample ID: 12026923  
Instrument: HRP763  
Analyst: MLL

Sample Type: Matrix Spike  
Matrix: SOIL  
%Moisture: 7  
Analysis Date: 07/07/2020 19:09  
Prep Batch ID:44157  
Batch ID: 44159

Dilution: 10

CAS No.	Parmname	Amount Added		Spike Conc.	Recovery %	Acceptance Limits	
		pg/g					
1746-01-6	MS	2,3,7,8-TCDD	205	JK	252	95.2	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	1020	J	1560	111	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	1020		1740	110	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	1020		3750	116	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	1020		2470	113	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD	1020		80600	-279 *	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD	2050	E	798000	-2300 *	70-130
51207-31-9	MS	2,3,7,8-TCDF	205	J	271	107	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	1020	J	1130	95	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	1020	J	1350	108	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	1020	J	1570	106	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	1020	J	1400	107	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	1020	J	1480	101	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	1020	J	1300	104	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	1020		10500	13.2 *	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	1020		1720	102	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	2050		36900	-6.78 *	70-130

Hi-Res Dioxins/Furans  
Quality Control Summary  
Spike Recovery Report

SDG Number: A0E0214\_2  
Client ID: ISM-08\_0520---After  
Processing(16681002M)  
Lab Sample ID: 12026924  
Instrument: HRP763  
Analyst: MLL

Sample Type: Matrix Spike Duplicate  
Matrix: SOIL  
%Moisture: 7  
Analysis Date: 07/07/2020 19:57  
Prep Batch ID:44157  
Batch ID: 44159  
Dilution: 10

CAS No.	Parmname	Amount Added pg/g		Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	MSD 2,3,7,8-TCDD	213	JK	268	98.8	70-130	5.99	0-20
40321-76-4	MSD 1,2,3,7,8-PeCDD	1060	J	1570	109	70-130	1.10	0-20
39227-28-6	MSD 1,2,3,4,7,8-HxCDD	1060		1780	109	70-130	2.28	0-20
57653-85-7	MSD 1,2,3,6,7,8-HxCDD	1060		3740	110	70-130	0.310	0-20
19408-74-3	MSD 1,2,3,7,8,9-HxCDD	1060		2010	66.1 *	70-130	20.4 *	0-20
35822-46-9	MSD 1,2,3,4,6,7,8-HpCDD	1060		84300	74.6	70-130	4.43	0-20
3268-87-9	MSD 1,2,3,4,6,7,8,9-OCDD	2130	E	789000	-2610 *	70-130	1.08	0-20
51207-31-9	MSD 2,3,7,8-TCDF	213	J	274	104	70-130	0.937	0-20
57117-41-6	MSD 1,2,3,7,8-PeCDF	1060	J	1200	98	70-130	6.04	0-20
57117-31-4	MSD 2,3,4,7,8-PeCDF	1060	J	1320	101	70-130	1.93	0-20
70648-26-9	MSD 1,2,3,4,7,8-HxCDF	1060	J	1560	101	70-130	0.731	0-20
57117-44-9	MSD 1,2,3,6,7,8-HxCDF	1060	J	1420	104	70-130	0.892	0-20
60851-34-5	MSD 2,3,4,6,7,8-HxCDF	1060	J	1510	99.8	70-130	1.84	0-20
72918-21-9	MSD 1,2,3,7,8,9-HxCDF	1060	J	1260	95.3	70-130	3.62	0-20
67562-39-4	MSD 1,2,3,4,6,7,8-HpCDF	1060		11500	106	70-130	9.04	0-20
55673-89-7	MSD 1,2,3,4,7,8,9-HpCDF	1060		1690	95.2	70-130	2.01	0-20
39001-02-0	MSD 1,2,3,4,6,7,8,9-OCDF	2130		36400	-27.6 *	70-130	1.22	0-20

## Method Blank Summary

Page 1 of 1

SDG Number: A0E0214\_2  
 Client ID: MB for batch 44116  
 Lab Sample ID: 12026877  
 Column:

Client: APEX001  
 Instrument ID: HRP763  
 Prep Date: 28-JUN-20

Matrix: SOIL  
 Data File: b29jun20c\_3-3  
 Analyzed: 06/30/20 11:06

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 44116	12026878	b29jun20c_3-1	06/30/20	0931
02 LCSD for batch 44116	12026879	b29jun20c_3-2	06/30/20	1018
03 ISM-05_0520---After Processing	16681001	b29jun20c_3-4	06/30/20	1154
04 ISM-05_0520---After Processing(16681001M	12026880	b29jun20c_3-5	06/30/20	1243
05 ISM-05_0520---After Processing(16681001M	12026881	b29jun20c_3-6	06/30/20	1331
06 ISM-05_0520---After Processing	16681001	e01jul20a-4	07/01/20	0946
07 ISM-05_0520---After Processing(16681001M	12026880	e01jul20a-5	07/01/20	1010
08 ISM-05_0520---After Processing(16681001M	12026881	e01jul20a-6	07/01/20	1034

## Method Blank Summary

Page 1 of 1

SDG Number: A0E0214\_2  
 Client ID: MB for batch 44157  
 Lab Sample ID: 12026920  
 Column:

Client: APEX001  
 Instrument ID: HRP763  
 Prep Date: 06-JUL-20

Matrix: SOIL  
 Data File: b07jul20a\_2-3  
 Analyzed: 07/07/20 17:33

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 44157	12026921	b07jul20a_2-1	07/07/20	1557
02 LCSD for batch 44157	12026922	b07jul20a_2-2	07/07/20	1645
03 ISM-08_0520---After Processing	16681002	b07jul20a_2-4	07/07/20	1821
04 ISM-08_0520---After Processing(16681002M	12026923	b07jul20a_2-5	07/07/20	1909
05 ISM-08_0520---After Processing(16681002M	12026924	b07jul20a_2-6	07/07/20	1957

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> A0E0214_2	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 12026877		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 44116		
<b>Client ID:</b> MB for batch 44116		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 44118	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/30/2020 11:06	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP763
<b>Data File:</b> b29jun20c_3-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 44116	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 28-JUN-20	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0790	pg/g	0.0790	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	0.0924	pg/g	0.0924	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.0888	pg/g	0.0888	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.0908	pg/g	0.0908	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.0916	pg/g	0.0916	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.146	pg/g	0.0614	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK	0.332	pg/g	0.163	10.0
51207-31-9	2,3,7,8-TCDF	J	0.150	pg/g	0.111	1.00
57117-41-6	1,2,3,7,8-PeCDF	JK	0.130	pg/g	0.0630	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	0.0602	pg/g	0.0602	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.130	pg/g	0.0736	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.0860	pg/g	0.0720	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.0748	pg/g	0.0748	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.100	pg/g	0.100	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.250	pg/g	0.0566	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.0820	pg/g	0.0820	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.138	pg/g	0.138	10.0
41903-57-5	Total TeCDD	U	0.0790	pg/g	0.0790	1.00
36088-22-9	Total PeCDD	U	0.0924	pg/g	0.0924	5.00
34465-46-8	Total HxCDD	U	0.0888	pg/g	0.0888	5.00
37871-00-4	Total HpCDD	J	0.146	pg/g	0.0614	5.00
30402-14-3	Total TeCDF	J	0.150	pg/g	0.111	1.00
30402-15-4	Total PeCDF	JK	0.442	pg/g	0.0514	5.00
55684-94-1	Total HxCDF	J	0.366	pg/g	0.0720	5.00
38998-75-3	Total HpCDF	J	0.250	pg/g	0.0566	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0446	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.162	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		162	200	pg/g	80.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		162	200	pg/g	81.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		150	200	pg/g	74.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	200	pg/g	75.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		168	200	pg/g	83.9	(23%-140%)
13C-OCDD		363	400	pg/g	90.7	(17%-157%)
13C-2,3,7,8-TCDF		144	200	pg/g	71.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		152	200	pg/g	75.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		152	200	pg/g	76.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		145	200	pg/g	72.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		135	200	pg/g	67.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		142	200	pg/g	71.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		149	200	pg/g	74.3	(29%-147%)

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214_2	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 12026877		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 44116		
<b>Client ID:</b> MB for batch 44116		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 44118	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/30/2020 11:06	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP763
<b>Data File:</b> b29jun20c_3-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 44116	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 28-JUN-20	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
<b>Surrogate/Tracer recovery</b>						
		<b>Qual</b>	<b>Result</b>	<b>Nominal</b>	<b>Units</b>	<b>Recovery%</b>
						<b>Acceptable Limits</b>
13C-1,2,3,4,6,7,8-HpCDF			143	200	pg/g	71.6 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			159	200	pg/g	79.7 (26%-138%)
37Cl-2,3,7,8-TCDD			18.5	20.0	pg/g	92.4 (35%-197%)

**Comments:**  
**J** Value is estimated  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

<b>SDG Number:</b> A0E0214_2	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 12026878		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 44116		
<b>Client ID:</b> LCS for batch 44116		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 44118	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/30/2020 09:31	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP763
<b>Data File:</b> b29jun20c_3-1		<b>Dilution:</b> 1
<b>Prep Batch:</b> 44116	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 28-JUN-20	<b>Prep Aliquot:</b> 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		19.0	pg/g	0.0946	1.00
40321-76-4	1,2,3,7,8-PeCDD		99.3	pg/g	0.117	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		97.5	pg/g	0.222	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		100	pg/g	0.226	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		104	pg/g	0.228	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		101	pg/g	0.346	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		197	pg/g	0.412	10.0
51207-31-9	2,3,7,8-TCDF		19.1	pg/g	0.105	1.00
57117-41-6	1,2,3,7,8-PeCDF		99.4	pg/g	0.142	5.00
57117-31-4	2,3,4,7,8-PeCDF		101	pg/g	0.134	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		99.2	pg/g	0.220	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		99.2	pg/g	0.224	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		100	pg/g	0.222	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		101	pg/g	0.300	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		102	pg/g	0.206	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		97.9	pg/g	0.280	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		191	pg/g	0.522	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	200	pg/g	85.2	(20%-175%)
13C-1,2,3,7,8-PeCDD		173	200	pg/g	86.6	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		161	200	pg/g	80.6	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		160	200	pg/g	79.9	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		180	200	pg/g	89.9	(22%-166%)
13C-OCDD		399	400	pg/g	99.6	(13%-199%)
13C-2,3,7,8-TCDF		155	200	pg/g	77.7	(22%-152%)
13C-1,2,3,7,8-PeCDF		161	200	pg/g	80.7	(21%-192%)
13C-2,3,4,7,8-PeCDF		165	200	pg/g	82.3	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		153	200	pg/g	76.7	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		146	200	pg/g	72.9	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		152	200	pg/g	75.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		156	200	pg/g	77.8	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		155	200	pg/g	77.5	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		175	200	pg/g	87.3	(20%-186%)
37Cl-2,3,7,8-TCDD		18.6	20.0	pg/g	93.1	(31%-191%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

SDG Number: A0E0214_2	Client: APEX001	Project: APEX00217
Lab Sample ID: 12026879		Matrix: SOIL
Client Sample: QC for batch 44116		
Client ID: LCSD for batch 44116		Prep Basis: As Received
Batch ID: 44118	Method: EPA Method 1613B	
Run Date: 06/30/2020 10:18	Analyst: MLL	Instrument: HRP763
Data File: b29jun20c_3-2		Dilution: 1
Prep Batch: 44116	Prep Method: SW846 3540C	
Prep Date: 28-JUN-20	Prep Aliquot: 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		19.1	pg/g	0.0802	1.00
40321-76-4	1,2,3,7,8-PeCDD		98.8	pg/g	0.180	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		97.5	pg/g	0.238	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		100	pg/g	0.244	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		105	pg/g	0.246	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		101	pg/g	0.226	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		196	pg/g	0.584	10.0
51207-31-9	2,3,7,8-TCDF		19.0	pg/g	0.121	1.00
57117-41-6	1,2,3,7,8-PeCDF		99.7	pg/g	0.192	5.00
57117-31-4	2,3,4,7,8-PeCDF		102	pg/g	0.183	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		98.4	pg/g	0.216	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		100	pg/g	0.220	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		99.5	pg/g	0.230	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		99.9	pg/g	0.304	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		101	pg/g	0.218	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		97.5	pg/g	0.306	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		193	pg/g	0.370	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		173	200	pg/g	86.3	(20%-175%)
13C-1,2,3,7,8-PeCDD		171	200	pg/g	85.4	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		159	200	pg/g	79.7	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		160	200	pg/g	79.9	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		182	200	pg/g	91.2	(22%-166%)
13C-OCDD		394	400	pg/g	98.4	(13%-199%)
13C-2,3,7,8-TCDF		155	200	pg/g	77.4	(22%-152%)
13C-1,2,3,7,8-PeCDF		159	200	pg/g	79.4	(21%-192%)
13C-2,3,4,7,8-PeCDF		162	200	pg/g	80.9	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		154	200	pg/g	77.1	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		145	200	pg/g	72.6	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		151	200	pg/g	75.6	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		160	200	pg/g	80.2	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		155	200	pg/g	77.4	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		174	200	pg/g	86.9	(20%-186%)
37Cl-2,3,7,8-TCDD		18.4	20.0	pg/g	91.8	(31%-191%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214_2	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 12026880	<b>Date Collected:</b> 05/07/2020 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 44116	<b>Date Received:</b> 06/16/2020 10:14	<b>%Moisture:</b> 4.5
<b>Client ID:</b> ISM-05_0520---After Processing(166		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 44118	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 07/01/2020 10:10	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP757
<b>Data File:</b> e01jul20a-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 44116	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 28-JUN-20	<b>Prep Aliquot:</b> 11.27 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		19.8	pg/g	0.208	0.930

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
---------------------------	------	--------	---------	-------	-----------	-------------------

**Comments:**

- E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214_2	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 12026880	<b>Date Collected:</b> 05/07/2020 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 44116	<b>Date Received:</b> 06/16/2020 10:14	<b>%Moisture:</b> 4.5
<b>Client ID:</b> ISM-05_0520---After Processing(166		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 44118	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 06/30/2020 12:43	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP763
<b>Data File:</b> b29jun20c_3-5		<b>Dilution:</b> 1
<b>Prep Batch:</b> 44116	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 28-JUN-20	<b>Prep Aliquot:</b> 11.27 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		20.5	pg/g	0.117	0.930
40321-76-4	1,2,3,7,8-PeCDD		96.5	pg/g	0.199	4.65
39227-28-6	1,2,3,4,7,8-HxCDD		99.4	pg/g	0.363	4.65
57653-85-7	1,2,3,6,7,8-HxCDD		123	pg/g	0.366	4.65
19408-74-3	1,2,3,7,8,9-HxCDD		119	pg/g	0.372	4.65
35822-46-9	1,2,3,4,6,7,8-HpCDD		825	pg/g	1.04	4.65
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	5800	pg/g	1.77	9.30
51207-31-9	2,3,7,8-TCDF		19.3	pg/g	0.172	0.930
57117-41-6	1,2,3,7,8-PeCDF		94.6	pg/g	0.201	4.65
57117-31-4	2,3,4,7,8-PeCDF		101	pg/g	0.190	4.65
70648-26-9	1,2,3,4,7,8-HxCDF		117	pg/g	0.271	4.65
57117-44-9	1,2,3,6,7,8-HxCDF		100	pg/g	0.283	4.65
60851-34-5	2,3,4,6,7,8-HxCDF		101	pg/g	0.288	4.65
72918-21-9	1,2,3,7,8,9-HxCDF		96.6	pg/g	0.346	4.65
67562-39-4	1,2,3,4,6,7,8-HpCDF		229	pg/g	0.337	4.65
55673-89-7	1,2,3,4,7,8,9-HpCDF		100	pg/g	0.457	4.65
39001-02-0	1,2,3,4,6,7,8,9-OCDF		436	pg/g	0.459	9.30

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		151	186	pg/g	81.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		154	186	pg/g	82.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		153	186	pg/g	82.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		144	186	pg/g	77.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		170	186	pg/g	91.6	(23%-140%)
13C-OCDD		424	372	pg/g	114	(17%-157%)
13C-2,3,7,8-TCDF		141	186	pg/g	76.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		141	186	pg/g	75.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		144	186	pg/g	77.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		137	186	pg/g	73.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		133	186	pg/g	71.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		139	186	pg/g	74.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		146	186	pg/g	78.7	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		143	186	pg/g	76.9	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		162	186	pg/g	87.2	(26%-138%)
37Cl-2,3,7,8-TCDD		15.3	18.6	pg/g	82.1	(35%-197%)

**Comments:**

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

<b>SDG Number:</b> A0E0214_2	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 12026881	<b>Date Collected:</b> 05/07/2020 10:00	<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 44116	<b>Date Received:</b> 06/16/2020 10:14	<b>%Moisture:</b> 4.5
<b>Client ID:</b> ISM-05_0520---After Processing(166		<b>Prep Basis:</b> Dry Weight
<b>Batch ID:</b> 44118	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 07/01/2020 10:34	<b>Analyst:</b> MJC	<b>Instrument:</b> HRP757
<b>Data File:</b> e01jul20a-6		<b>Dilution:</b> 1
<b>Prep Batch:</b> 44116	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 28-JUN-20	<b>Prep Aliquot:</b> 11.28 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		20.3	pg/g	0.197	0.929

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
---------------------------	------	--------	---------	-------	-----------	-------------------

**Comments:**

- E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

SDG Number: A0E0214_2	Client: APEX001	Project: APEX00217
Lab Sample ID: 12026881	Date Collected: 05/07/2020 10:00	Matrix: SOIL
Client Sample: QC for batch 44116	Date Received: 06/16/2020 10:14	%Moisture: 4.5
Client ID: ISM-05_0520---After Processing(166		Prep Basis: Dry Weight
Batch ID: 44118	Method: EPA Method 1613B	
Run Date: 06/30/2020 13:31	Analyst: MLL	Instrument: HRP763
Data File: b29jun20c_3-6		Dilution: 1
Prep Batch: 44116	Prep Method: SW846 3540C	
Prep Date: 28-JUN-20	Prep Aliquot: 11.28 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		20.2	pg/g	0.102	0.929
40321-76-4	1,2,3,7,8-PeCDD		96.7	pg/g	0.217	4.64
39227-28-6	1,2,3,4,7,8-HxCDD		99.4	pg/g	0.437	4.64
57653-85-7	1,2,3,6,7,8-HxCDD		124	pg/g	0.429	4.64
19408-74-3	1,2,3,7,8,9-HxCDD		117	pg/g	0.442	4.64
35822-46-9	1,2,3,4,6,7,8-HpCDD		834	pg/g	1.06	4.64
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	5870	pg/g	1.43	9.29
51207-31-9	2,3,7,8-TCDF		19.3	pg/g	0.225	0.929
57117-41-6	1,2,3,7,8-PeCDF		97.5	pg/g	0.336	4.64
57117-31-4	2,3,4,7,8-PeCDF		103	pg/g	0.327	4.64
70648-26-9	1,2,3,4,7,8-HxCDF		117	pg/g	0.319	4.64
57117-44-9	1,2,3,6,7,8-HxCDF		99.5	pg/g	0.312	4.64
60851-34-5	2,3,4,6,7,8-HxCDF		103	pg/g	0.321	4.64
72918-21-9	1,2,3,7,8,9-HxCDF		96.6	pg/g	0.401	4.64
67562-39-4	1,2,3,4,6,7,8-HpCDF		231	pg/g	0.384	4.64
55673-89-7	1,2,3,4,7,8,9-HpCDF		104	pg/g	0.520	4.64
39001-02-0	1,2,3,4,6,7,8,9-OCDF		444	pg/g	0.483	9.29

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		152	186	pg/g	82.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		152	186	pg/g	82.1	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		145	186	pg/g	77.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		142	186	pg/g	76.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		168	186	pg/g	90.5	(23%-140%)
13C-OCDD		399	371	pg/g	107	(17%-157%)
13C-2,3,7,8-TCDF		141	186	pg/g	75.7	(24%-169%)
13C-1,2,3,7,8-PeCDF		135	186	pg/g	72.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		139	186	pg/g	75.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		132	186	pg/g	71.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		127	186	pg/g	68.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		134	186	pg/g	72.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		140	186	pg/g	75.5	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		138	186	pg/g	74.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		156	186	pg/g	83.9	(26%-138%)
37Cl-2,3,7,8-TCDD		15.6	18.6	pg/g	84.2	(35%-197%)

**Comments:**

E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 2

<b>SDG Number:</b> A0E0214_2	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 12026920		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 44157		
<b>Client ID:</b> MB for batch 44157		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 44159	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 07/07/2020 17:33	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP763
<b>Data File:</b> b07jul20a_2-3		<b>Dilution:</b> 1
<b>Prep Batch:</b> 44157	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 06-JUL-20	<b>Prep Aliquot:</b> 1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	1.02	pg/g	1.02	10.0
40321-76-4	1,2,3,7,8-PeCDD	U	1.15	pg/g	1.15	50.0
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.14	pg/g	1.14	50.0
57653-85-7	1,2,3,6,7,8-HxCDD	U	1.15	pg/g	1.15	50.0
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.16	pg/g	1.16	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	1.78	pg/g	1.75	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK	6.08	pg/g	3.24	100
51207-31-9	2,3,7,8-TCDF	J	1.84	pg/g	1.47	10.0
57117-41-6	1,2,3,7,8-PeCDF	U	1.18	pg/g	1.18	50.0
57117-31-4	2,3,4,7,8-PeCDF	U	1.14	pg/g	1.14	50.0
70648-26-9	1,2,3,4,7,8-HxCDF	J	2.28	pg/g	0.914	50.0
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.14	pg/g	0.928	50.0
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.970	pg/g	0.970	50.0
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.40	pg/g	1.40	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	5.56	pg/g	1.05	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.63	pg/g	1.63	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	3.10	pg/g	3.10	100
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	1.82	pg/g	1.02	10.0
41903-57-5	Total TeCDD	J	1.82	pg/g	1.02	10.0
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	1.15	pg/g	1.15	50.0
36088-22-9	Total PeCDD	U	1.15	pg/g	1.15	50.0
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	1.14	pg/g	1.14	50.0
34465-46-8	Total HxCDD	U	1.14	pg/g	1.14	50.0
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	1.78	pg/g	1.75	50.0
37871-00-4	Total HpCDD	J	1.78	pg/g	1.75	50.0
30402-14-3	Total Tetrachlorodibenzofuran	J	3.70	pg/g	1.47	10.0
30402-14-3	Total TeCDF	J	3.70	pg/g	1.47	10.0
30402-15-4	Total Pentachlorodibenzofuran	J	2.82	pg/g	0.686	50.0
30402-15-4	Total PeCDF	JK	5.44	pg/g	0.686	50.0
55684-94-1	Total Hexachlorodibenzofuran	J	5.88	pg/g	0.914	50.0
55684-94-1	Total HxCDF	J	5.88	pg/g	0.914	50.0
38998-75-3	Total Heptachlorodibenzofuran	J	5.56	pg/g	1.05	50.0

**Comments:**

- J** Value is estimated  
**K** Estimated Maximum Possible Concentration  
**U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 2 of 2

SDG Number: A0E0214_2	Client: APEX001	Project: APEX00217
Lab Sample ID: 12026920		Matrix: SOIL
Client Sample: QC for batch 44157		
Client ID: MB for batch 44157		Prep Basis: As Received
Batch ID: 44159	Method: EPA Method 1613B	
Run Date: 07/07/2020 17:33	Analyst: MLL	Instrument: HRP763
Data File: b07jul20a_2-3		Dilution: 1
Prep Batch: 44157	Prep Method: SW846 3540C	
Prep Date: 06-JUL-20	Prep Aliquot: 1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38998-75-3	Total HpCDF	J	5.56	pg/g	1.05	50.0
3333-30-0	TEQ WHO2005 ND=0		0.599	pg/g		
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.601	pg/g		
3333-30-1	TEQ WHO2005 ND=0.5		2.17	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		2.17	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1670	2000	pg/g	83.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		1730	2000	pg/g	86.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		1400	2000	pg/g	70.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		1590	2000	pg/g	79.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		1570	2000	pg/g	78.5	(23%-140%)
13C-OCDD		2660	4000	pg/g	66.5	(17%-157%)
13C-2,3,7,8-TCDF		1500	2000	pg/g	75.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		1670	2000	pg/g	83.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		1630	2000	pg/g	81.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		1440	2000	pg/g	72.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		1450	2000	pg/g	72.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		1510	2000	pg/g	75.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		1500	2000	pg/g	75.0	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		1410	2000	pg/g	70.4	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		1450	2000	pg/g	72.6	(26%-138%)
37Cl-2,3,7,8-TCDD		176	200	pg/g	88.1	(35%-197%)

**Comments:**

- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

<b>SDG Number:</b> A0E0214_2	<b>Client:</b> APEX001	<b>Project:</b> APEX00217
<b>Lab Sample ID:</b> 12026921		<b>Matrix:</b> SOIL
<b>Client Sample:</b> QC for batch 44157		
<b>Client ID:</b> LCS for batch 44157		<b>Prep Basis:</b> As Received
<b>Batch ID:</b> 44159	<b>Method:</b> EPA Method 1613B	
<b>Run Date:</b> 07/07/2020 15:57	<b>Analyst:</b> MLL	<b>Instrument:</b> HRP763
<b>Data File:</b> b07jul20a_2-1		<b>Dilution:</b> 1
<b>Prep Batch:</b> 44157	<b>Prep Method:</b> SW846 3540C	
<b>Prep Date:</b> 06-JUL-20	<b>Prep Aliquot:</b> 1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		191	pg/g	1.28	10.0
40321-76-4	1,2,3,7,8-PeCDD		993	pg/g	2.82	50.0
39227-28-6	1,2,3,4,7,8-HxCDD		974	pg/g	5.28	50.0
57653-85-7	1,2,3,6,7,8-HxCDD		1020	pg/g	5.28	50.0
19408-74-3	1,2,3,7,8,9-HxCDD		1050	pg/g	5.38	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		1000	pg/g	7.54	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1880	pg/g	21.2	100
51207-31-9	2,3,7,8-TCDF		192	pg/g	1.63	10.0
57117-41-6	1,2,3,7,8-PeCDF		933	pg/g	2.60	50.0
57117-31-4	2,3,4,7,8-PeCDF		953	pg/g	2.48	50.0
70648-26-9	1,2,3,4,7,8-HxCDF		945	pg/g	4.88	50.0
57117-44-9	1,2,3,6,7,8-HxCDF		984	pg/g	5.12	50.0
60851-34-5	2,3,4,6,7,8-HxCDF		932	pg/g	4.94	50.0
72918-21-9	1,2,3,7,8,9-HxCDF		926	pg/g	7.38	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		1030	pg/g	4.60	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF		1010	pg/g	7.08	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF		1960	pg/g	10.4	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1700	2000	pg/g	84.9	(20%-175%)
13C-1,2,3,7,8-PeCDD		1690	2000	pg/g	84.3	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		1390	2000	pg/g	69.6	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		1580	2000	pg/g	79.0	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		1540	2000	pg/g	76.9	(22%-166%)
13C-OCDD		2900	4000	pg/g	72.5	(13%-199%)
13C-2,3,7,8-TCDF		1490	2000	pg/g	74.7	(22%-152%)
13C-1,2,3,7,8-PeCDF		1660	2000	pg/g	83.2	(21%-192%)
13C-2,3,4,7,8-PeCDF		1660	2000	pg/g	82.9	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		1420	2000	pg/g	71.2	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		1450	2000	pg/g	72.7	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		1520	2000	pg/g	76.1	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		1530	2000	pg/g	76.5	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		1400	2000	pg/g	70.1	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		1500	2000	pg/g	75.1	(20%-186%)
37Cl-2,3,7,8-TCDD		179	200	pg/g	89.4	(31%-191%)

**Comments:**

**U** Analyte was analyzed for, but not detected above the specified detection limit.



**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

SDG Number: A0E0214_2	Client: APEX001	Project: APEX00217
Lab Sample ID: 12026922		Matrix: SOIL
Client Sample: QC for batch 44157		
Client ID: LCSD for batch 44157		Prep Basis: As Received
Batch ID: 44159	Method: EPA Method 1613B	
Run Date: 07/07/2020 16:45	Analyst: MLL	Instrument: HRP763
Data File: b07jul20a_2-2		Dilution: 1
Prep Batch: 44157	Prep Method: SW846 3540C	
Prep Date: 06-JUL-20	Prep Aliquot: 1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		194	pg/g	1.27	10.0
40321-76-4	1,2,3,7,8-PeCDD		1030	pg/g	2.30	50.0
39227-28-6	1,2,3,4,7,8-HxCDD		984	pg/g	4.30	50.0
57653-85-7	1,2,3,6,7,8-HxCDD		1030	pg/g	4.12	50.0
19408-74-3	1,2,3,7,8,9-HxCDD		1080	pg/g	4.28	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		1020	pg/g	6.14	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2110	pg/g	13.5	100
51207-31-9	2,3,7,8-TCDF		195	pg/g	1.44	10.0
57117-41-6	1,2,3,7,8-PeCDF		946	pg/g	2.46	50.0
57117-31-4	2,3,4,7,8-PeCDF		990	pg/g	2.44	50.0
70648-26-9	1,2,3,4,7,8-HxCDF		997	pg/g	4.72	50.0
57117-44-9	1,2,3,6,7,8-HxCDF		978	pg/g	4.82	50.0
60851-34-5	2,3,4,6,7,8-HxCDF		955	pg/g	4.70	50.0
72918-21-9	1,2,3,7,8,9-HxCDF		929	pg/g	6.96	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		1050	pg/g	4.88	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF		1010	pg/g	6.98	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF		2180	pg/g	11.9	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1620	2000	pg/g	81.0	(20%-175%)
13C-1,2,3,7,8-PeCDD		1680	2000	pg/g	84.1	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		1410	2000	pg/g	70.3	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		1560	2000	pg/g	77.8	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		1550	2000	pg/g	77.5	(22%-166%)
13C-OCDD		2640	4000	pg/g	65.9	(13%-199%)
13C-2,3,7,8-TCDF		1480	2000	pg/g	74.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		1610	2000	pg/g	80.5	(21%-192%)
13C-2,3,4,7,8-PeCDF		1650	2000	pg/g	82.4	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		1380	2000	pg/g	68.9	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		1500	2000	pg/g	74.8	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		1470	2000	pg/g	73.6	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		1520	2000	pg/g	75.9	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		1400	2000	pg/g	69.8	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		1480	2000	pg/g	73.9	(20%-186%)
37Cl-2,3,7,8-TCDD		178	200	pg/g	89.0	(31%-191%)

**Comments:**

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

SDG Number: A0E0214_2	Client: APEX001	Project: APEX00217
Lab Sample ID: 12026923	Date Collected: 05/05/2020 16:30	Matrix: SOIL
Client Sample: QC for batch 44157	Date Received: 06/16/2020 10:14	%Moisture: 7
Client ID: ISM-08_0520---After Processing(166		Prep Basis: Dry Weight
Batch ID: 44159	Method: EPA Method 1613B	
Run Date: 07/07/2020 19:09	Analyst: MLL	Instrument: HRP763
Data File: b07jul20a_2-5		Dilution: 10
Prep Batch: 44157	Prep Method: SW846 3540C	
Prep Date: 06-JUL-20	Prep Aliquot: 1.05 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		252	pg/g	12.1	102
40321-76-4	1,2,3,7,8-PeCDD		1560	pg/g	25.2	512
39227-28-6	1,2,3,4,7,8-HxCDD		1740	pg/g	75.8	512
57653-85-7	1,2,3,6,7,8-HxCDD		3750	pg/g	63.5	512
19408-74-3	1,2,3,7,8,9-HxCDD		2470	pg/g	70.2	512
35822-46-9	1,2,3,4,6,7,8-HpCDD		80600	pg/g	338	512
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	798000	pg/g	369	1020
51207-31-9	2,3,7,8-TCDF		271	pg/g	21.7	102
57117-41-6	1,2,3,7,8-PeCDF		1130	pg/g	21.1	512
57117-31-4	2,3,4,7,8-PeCDF		1350	pg/g	20.0	512
70648-26-9	1,2,3,4,7,8-HxCDF		1570	pg/g	33.2	512
57117-44-9	1,2,3,6,7,8-HxCDF		1400	pg/g	31.9	512
60851-34-5	2,3,4,6,7,8-HxCDF		1480	pg/g	33.4	512
72918-21-9	1,2,3,7,8,9-HxCDF		1300	pg/g	51.8	512
67562-39-4	1,2,3,4,6,7,8-HpCDF		10500	pg/g	53.4	512
55673-89-7	1,2,3,4,7,8,9-HpCDF		1720	pg/g	78.6	512
39001-02-0	1,2,3,4,6,7,8,9-OCDF		36900	pg/g	114	1020

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		2280	2050	pg/g	111	(25%-164%)
13C-1,2,3,7,8-PeCDD		2380	2050	pg/g	116	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		2120	2050	pg/g	104	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		2370	2050	pg/g	116	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		2390	2050	pg/g	117	(23%-140%)
13C-OCDD		5310	4090	pg/g	130	(17%-157%)
13C-2,3,7,8-TCDF		2140	2050	pg/g	105	(24%-169%)
13C-1,2,3,7,8-PeCDF		2370	2050	pg/g	116	(24%-185%)
13C-2,3,4,7,8-PeCDF		2350	2050	pg/g	115	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		2170	2050	pg/g	106	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		2300	2050	pg/g	112	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		2280	2050	pg/g	112	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		2180	2050	pg/g	106	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		2100	2050	pg/g	103	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		2200	2050	pg/g	108	(26%-138%)
37Cl-2,3,7,8-TCDD		233	205	pg/g	114	(35%-197%)

**Comments:**

E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans  
Certificate of Analysis  
Sample Summary**

Page 1 of 1

SDG Number: A0E0214_2	Client: APEX001	Project: APEX00217
Lab Sample ID: 12026924	Date Collected: 05/05/2020 16:30	Matrix: SOIL
Client Sample: QC for batch 44157	Date Received: 06/16/2020 10:14	%Moisture: 7
Client ID: ISM-08_0520---After Processing(166		Prep Basis: Dry Weight
Batch ID: 44159	Method: EPA Method 1613B	
Run Date: 07/07/2020 19:57	Analyst: MLL	Instrument: HRP763
Data File: b07jul20a_2-6		Dilution: 10
Prep Batch: 44157	Prep Method: SW846 3540C	
Prep Date: 06-JUL-20	Prep Aliquot: 1.01 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		268	pg/g	16.5	106
40321-76-4	1,2,3,7,8-PeCDD		1570	pg/g	23.0	532
39227-28-6	1,2,3,4,7,8-HxCDD		1780	pg/g	223	532
57653-85-7	1,2,3,6,7,8-HxCDD		3740	pg/g	221	532
19408-74-3	1,2,3,7,8,9-HxCDD		2010	pg/g	226	532
35822-46-9	1,2,3,4,6,7,8-HpCDD		84300	pg/g	226	532
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	789000	pg/g	415	1060
51207-31-9	2,3,7,8-TCDF		274	pg/g	21.7	106
57117-41-6	1,2,3,7,8-PeCDF		1200	pg/g	21.7	532
57117-31-4	2,3,4,7,8-PeCDF		1320	pg/g	20.4	532
70648-26-9	1,2,3,4,7,8-HxCDF		1560	pg/g	36.0	532
57117-44-9	1,2,3,6,7,8-HxCDF		1420	pg/g	39.0	532
60851-34-5	2,3,4,6,7,8-HxCDF		1510	pg/g	39.8	532
72918-21-9	1,2,3,7,8,9-HxCDF		1260	pg/g	52.8	532
67562-39-4	1,2,3,4,6,7,8-HpCDF		11500	pg/g	63.4	532
55673-89-7	1,2,3,4,7,8,9-HpCDF		1690	pg/g	102	532
39001-02-0	1,2,3,4,6,7,8,9-OCDF		36400	pg/g	119	1060

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		2120	2130	pg/g	99.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		2200	2130	pg/g	103	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		2850	2130	pg/g	134	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		3210	2130	pg/g	151 *	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		3040	2130	pg/g	143 *	(23%-140%)
13C-OCDD		6870	4260	pg/g	161 *	(17%-157%)
13C-2,3,7,8-TCDF		1970	2130	pg/g	92.5	(24%-169%)
13C-1,2,3,7,8-PeCDF		2080	2130	pg/g	97.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		2170	2130	pg/g	102	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		2950	2130	pg/g	139	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		2960	2130	pg/g	139 *	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		3000	2130	pg/g	141 *	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		2860	2130	pg/g	134	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		2860	2130	pg/g	134	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		2750	2130	pg/g	129	(26%-138%)
37Cl-2,3,7,8-TCDD		215	213	pg/g	101	(35%-197%)

**Comments:**

E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range

U Analyte was analyzed for, but not detected above the specified detection limit.

# Attachment D

## Data Validation Report

## QA/QC SOLUTIONS, LLC



James J. Mc Ateer, Jr., BS, MRSC  
Managing Member  
7532 Champion Hill Rd. SE  
Salem, Oregon 97306  
Telephone: 503.763.6948  
Facsimile: 503.566.2114  
Cellular: 503.881.1501  
email: jjmcateer@msn.com

August 28, 2020

Josh Bale, P.E.  
GSI Water Solutions, Inc.  
55 SW Yamhill Street, Suite 300  
Portland, OR 972014

*Sent via e-mail to jbale@gsiws.com on August 28, 2020*

Subject: JH Baxter-Eugene: May 2020 ISM Sampling Data Review Summary  
Client Project No.: 0302,.01.004  
QA/QC Solutions, LLC Project No.: 0724290.1

Dear Josh:

Pursuant to your request, *QA/QC Solutions, LLC* completed an abbreviated data review of the chemical and physical parameter analyses completed on composited soil samples using incremental sampling methodology (ISM) and one equipment blank. The samples were collected between May 5 and 7, 2020 and associated with the JH Baxter-Eugene site.

Analyses were completed for 18 polycyclic aromatic hydrocarbons (PAHs), pentachlorophenol (PCP), selected metals (i.e., arsenic, chromium, copper, and zinc), total organic carbon (TOC), total solids, and polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans (PCDD/Fs). All data were reported in sample delivery group (SDG) by Apex Laboratories located in Tigard, Oregon under work order AOE0214. The analytical methods used are specified in the SDG.

### Overall Assessment of Data Quality

Overall, the data reported are of good quality and the results for the applicable QA/QC measurements that were used by the laboratories during the analysis of the samples were generally acceptable. The data reported were reviewed to verify that applicable laboratory quality assurance and quality control (QA/QC) measurements were reported, documented, and of sufficient quality to support its intended purpose(s). No significant data quality issues were identified during the abbreviated review that would make any data unusable.

Some sample results were assigned laboratory qualifiers (see page 33 of 145 in APEX SDG for definitions). The laboratory qualifiers were assigned to provide additional information to data users regarding potential outliers and/or details for the specific result reported. Data users need to take note of all laboratory-assigned qualifiers for interpretative purposes.

### Data Validation Procedures

Data validation procedures included evaluating a summary of the sample results and applicable quality control results reported by the laboratory; this level of validation is also referred to as an abbreviated data review (equivalent to "Stage 2B" review per U.S. EPA 2009). The data review was completed to identify if there may have been significant data quality issues with regards to method blank and equipment rinseate

blank contamination and bias attributed to the method-specific accuracy, and precision quality control measurements reported

Verification and validation of 100-percent of all applicable laboratory calculations, transcriptions, review of instrument printouts, and review of bench sheets were not completed during the data validation review. There may be analytical problems that could only be identified by reviewing every instrument printouts and associated analytical quality control results. Verification of all possible factors that could result in the degradation of data quality was not completed nor should be inferred at this time. The laboratory case narratives did not indicate any significant problems with data that were not reviewed during data validation. The adequacy of the sampling procedures was not completed during the data validation.

This concludes the data review summary. Should you have any questions regarding the information presented herein, please contact me by telephone at 503.763.6948 or by e-mail at [jjmcateer@msn.com](mailto:jjmcateer@msn.com).

Cordially,



James J. Mc Ateer, Jr., BS, MRSC  
Managing Member

## **References**

U.S. EPA 2009. Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use. OSWER No. 9200.1-85. EPA 540-R-08-005. January 13, 2009. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC.

# Attachment E

## Historical Aerials



L 3837





7-20-78 12:18 124289 1-40 H-15.000 GS-VEPI





Legend

1994



2000 ft

Google Earth

Image U.S. Geological Survey





Legend

2003



2000 ft

Google Earth

Image © 2020 Maxar Technologies

