



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
ENVIRONMENTAL LABORATORY

P.O. Box 30270  
Lansing, MI 48909  
TEL: (517) 335-9800  
FAX: (517) 335-9600

29 July 2015

Work Order: 1507117

Price: \$4,735.00

Amy Keranen

MDEQ-RRD-UP

1504 W. Washington St.

Marquette, MI 49855

RE: ABANDONED MINING WASTES-TAMARACK CITY

I certify that the analyses performed by the MDEQ Environmental Laboratory were conducted by methods approved by the U.S. Environmental Protection Agency and other appropriate regulatory agencies .

Sincerely,

George Krisztian  
Laboratory Director



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MDEQ-RRD-UP  
1504 W. Washington St.  
Marquette MI, 49855

Project: ABANDONED MINING WASTES-TAMARACK CITY Ops  
Site Code: 31000098  
Project Manager: Amy Keranen

**Reported:**  
07/29/2015

**Analytical Report for Samples**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Qualifier
CHTC - SD - 01 - 0"-6"	1507117-01	Soil/Sediment	07/07/2015	07/13/2015	
CHTC - SD - 01 - 1'-2.66'	1507117-02	Soil/Sediment	07/07/2015	07/13/2015	
CHTC - SD - 02 - 0"-6"	1507117-03	Soil/Sediment	07/07/2015	07/13/2015	
CHTC - SD - 02 - 1'-3'	1507117-04	Soil/Sediment	07/07/2015	07/13/2015	
CHTC - SD - 02 - 3'-3.33'	1507117-05	Soil/Sediment	07/07/2015	07/13/2015	
CHTC - SD - 03 - 0"-6"	1507117-06	Soil/Sediment	07/07/2015	07/13/2015	
CHTC - SD - 03 - 1'-3'	1507117-07	Soil/Sediment	07/07/2015	07/13/2015	
CHTC - SD - 03 - 3'-4.66'	1507117-08	Soil/Sediment	07/07/2015	07/13/2015	
CHTC - SD - 04 - 0"-6"	1507117-09	Soil/Sediment	07/08/2015	07/13/2015	
CHTC - SD - 04 - 1'-3'	1507117-10	Soil/Sediment	07/08/2015	07/13/2015	
CHTC - SD - 04 - 3'-4.25'	1507117-11	Soil/Sediment	07/08/2015	07/13/2015	
CHTC - SD - 04 - 1'-3' DUP	1507117-12	Soil/Sediment	07/08/2015	07/13/2015	
CHTC - SD - 09 - 0"-6"	1507117-13	Soil/Sediment	07/08/2015	07/13/2015	
CHTC - SD - 09 - 1'-3'	1507117-14	Soil/Sediment	07/08/2015	07/13/2015	
CHTC - SD - 09 - 3'-5'	1507117-15	Soil/Sediment	07/08/2015	07/13/2015	

**Notes and Definitions**

- Y20 Reporting Limits (RL) raised due to matrix.
- X3 Spike recovery is not applicable due to large target analyte concentration in the source sample.
- A09 Result is estimated due to high recovery of batch quality control.
- A07 Result(s) and reporting limit(s) are estimated due to poor precision.
- A04 Result is estimated due to high matrix spike recovery.
- A02 Result is estimated due to high surrogate recovery.
- ND Indicates compound analyzed for but not detected
- RL Reporting Limit
- NA Not Applicable
- dry Sample results reported on a dry weight basis



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Client ID: CHTC - SD - 01 - 0"-6"

Lab ID: 1507117-01

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-PCBs as Aroclors</b>									
12674-11-2	Aroclor 1016	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11104-28-2	Aroclor 1221	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11141-16-5	Aroclor 1232	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
53469-21-9	Aroclor 1242	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
12672-29-6	Aroclor 1248	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11097-69-1	Aroclor 1254	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11096-82-5	Aroclor 1260	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
37324-23-5	Aroclor 1262	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11100-14-4	Aroclor 1268	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			80.1 %	30-150		07/22/15	B5G1612	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			75.6 %	30-150		07/22/15	B5G1612	8081/8082	
<b>Inorganics-General Chemistry</b>									
TS	% Total Solids	78.4	0.1	%	1	07/14/15	B5G1324	2540 B	
57-12-5	Total Cyanide	ND	0.13	mg/kg dry	1	07/22/15	B5G2013	ASTM D7284	
<b>Inorganics-Metals</b>									
7429-90-5	Aluminium	18000	100	mg/kg dry	1000	07/22/15	B5G1701	6020/200.8	
7440-36-0	Antimony	ND	0.3	mg/kg dry	10	07/23/15	B5G2111	6020/200.8	
7440-38-2	Arsenic	2.3	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-39-3	Barium	10	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-41-7	Beryllium	0.3	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-43-9	Cadmium	ND	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-47-3	Chromium	30	2.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7440-48-4	Cobalt	20	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7440-50-8	Copper	2000	100	mg/kg dry	1000	07/22/15	B5G1701	6020/200.8	
7439-89-6	Iron	27000	5.0	mg/kg dry	10	07/28/15	B5G1701	6010/200.7	
7439-92-1	Lead	3.0	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7439-93-2	Lithium	8.7	0.2	mg/kg dry	1	07/28/15	B5G1701	6010/200.7	
7439-95-4	Magnesium	20000	50	mg/kg dry	10	07/28/15	B5G1701	6010/200.7	
7439-96-5	Manganese	350	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7439-97-6	Mercury	ND	0.06	mg/kg dry	1	07/16/15	B5G1420	7471/245.5	
7440-02-0	Nickel	34	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7782-49-2	Selenium	ND	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-22-4	Silver	2.7	0.1	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-28-0	Thallium	ND	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-66-6	Zinc	85	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	



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Client ID: CHTC - SD - 01 - 1'-2.66'  
 Lab ID: 1507117-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Semivolatiles</b>									
<b>See note Y20</b>									
91-57-6	2-Methylnaphthalene	ND	2000	ug/kg dry	1	07/18/15	B5G1421	8270	
83-32-9	Acenaphthene	ND	780	ug/kg dry	1	07/18/15	B5G1421	8270	
208-96-8	Acenaphthylene	ND	780	ug/kg dry	1	07/18/15	B5G1421	8270	
120-12-7	Anthracene	ND	780	ug/kg dry	1	07/18/15	B5G1421	8270	
56-55-3	Benz[a]anthracene	ND	780	ug/kg dry	1	07/18/15	B5G1421	8270	
50-32-8	Benzo[a]pyrene	ND	1600	ug/kg dry	1	07/18/15	B5G1421	8270	
205-99-2	Benzo[b]fluoranthene	ND	1600	ug/kg dry	1	07/18/15	B5G1421	8270	
191-24-2	Benzo[g,h,i]perylene	ND	1600	ug/kg dry	1	07/18/15	B5G1421	8270	
207-08-9	Benzo[k]fluoranthene	ND	1600	ug/kg dry	1	07/18/15	B5G1421	8270	
218-01-9	Chrysene	ND	780	ug/kg dry	1	07/18/15	B5G1421	8270	
53-70-3	Dibenz[a,h]anthracene	ND	1600	ug/kg dry	1	07/18/15	B5G1421	8270	
206-44-0	Fluoranthene	ND	780	ug/kg dry	1	07/18/15	B5G1421	8270	
86-73-7	Fluorene	ND	780	ug/kg dry	1	07/18/15	B5G1421	8270	
193-39-5	Indeno(1,2,3-c,d)pyrene	ND	1600	ug/kg dry	1	07/18/15	B5G1421	8270	
91-20-3	Naphthalene	ND	780	ug/kg dry	1	07/18/15	B5G1421	8270	
85-01-8	Phenanthrene	ND	780	ug/kg dry	1	07/18/15	B5G1421	8270	
129-00-0	Pyrene	ND	780	ug/kg dry	1	07/18/15	B5G1421	8270	
<i>Surrogate: 2-Fluorobiphenyl</i>			73.2 %	32.9-115		07/18/15	B5G1421	8270	
<i>Surrogate: Nitrobenzene-d5</i>			58.8 %	31.8-115		07/18/15	B5G1421	8270	
<i>Surrogate: p-Terphenyl-d14</i>			75.6 %	38.5-115		07/18/15	B5G1421	8270	
<b>Organics-PCBs as Aroclors</b>									
<b>See note Y20</b>									
12674-11-2	Aroclor 1016	ND	310	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11104-28-2	Aroclor 1221	ND	310	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11141-16-5	Aroclor 1232	ND	310	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
53469-21-9	Aroclor 1242	ND	310	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
12672-29-6	Aroclor 1248	ND	310	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11097-69-1	Aroclor 1254	ND	310	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11096-82-5	Aroclor 1260	ND	310	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
37324-23-5	Aroclor 1262	ND	310	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11100-14-4	Aroclor 1268	ND	310	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			77.8 %	30-150		07/22/15	B5G1612	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			75.4 %	30-150		07/22/15	B5G1612	8081/8082	



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Client ID: CHTC - SD - 01 - 1'-2.66'

Lab ID: 1507117-02

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Inorganics-General Chemistry</b>									
TS	% Total Solids	64.0	0.1	%	1	07/14/15	B5G1324	2540 B	



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**Client ID: CHTC - SD - 02 - 0''-6''**

**Lab ID: 1507117-03**

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-PCBs as Aroclors</b>									
12674-11-2	Aroclor 1016	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11104-28-2	Aroclor 1221	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11141-16-5	Aroclor 1232	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
53469-21-9	Aroclor 1242	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
12672-29-6	Aroclor 1248	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11097-69-1	Aroclor 1254	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11096-82-5	Aroclor 1260	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
37324-23-5	Aroclor 1262	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11100-14-4	Aroclor 1268	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			85.6 %	30-150		07/22/15	B5G1612	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			75.2 %	30-150		07/22/15	B5G1612	8081/8082	
<b>Inorganics-General Chemistry</b>									
TS	<b>% Total Solids</b>	<b>79.2</b>	0.1	%	1	07/14/15	B5G1324	2540 B	



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**Client ID: CHTC - SD - 02 - 1'-3'**

**Lab ID: 1507117-04**

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-PCBs as Aroclors</b>									
12674-11-2	Aroclor 1016	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11104-28-2	Aroclor 1221	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11141-16-5	Aroclor 1232	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
53469-21-9	Aroclor 1242	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
12672-29-6	Aroclor 1248	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11097-69-1	Aroclor 1254	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11096-82-5	Aroclor 1260	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
37324-23-5	Aroclor 1262	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11100-14-4	Aroclor 1268	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			90.6 %	30-150		07/22/15	B5G1612	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			68.7 %	30-150		07/22/15	B5G1612	8081/8082	
<b>Inorganics-General Chemistry</b>									
TS	<b>% Total Solids</b>	<b>77.4</b>	0.1	%	1	07/14/15	B5G1324	2540 B	



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**Client ID: CHTC - SD - 02 - 3'-3.33'**

**Lab ID: 1507117-05**

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-PCBs as Aroclors</b>									
12674-11-2	Aroclor 1016	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11104-28-2	Aroclor 1221	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11141-16-5	Aroclor 1232	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
53469-21-9	Aroclor 1242	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
12672-29-6	Aroclor 1248	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11097-69-1	Aroclor 1254	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11096-82-5	Aroclor 1260	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
37324-23-5	Aroclor 1262	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11100-14-4	Aroclor 1268	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			115 %	30-150		07/22/15	B5G1612	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			99.2 %	30-150		07/22/15	B5G1612	8081/8082	
<b>Inorganics-General Chemistry</b>									
TS	<b>% Total Solids</b>	<b>77.0</b>	0.1	%	1	07/14/15	B5G1324	2540 B	





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Client ID: CHTC - SD - 03 - 0"-6"

Lab ID: 1507117-06

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-PCBs as Aroclors</b>									
<b>See note Y20</b>									
12674-11-2	Aroclor 1016	ND	400	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11104-28-2	Aroclor 1221	ND	400	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11141-16-5	Aroclor 1232	ND	400	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
53469-21-9	Aroclor 1242	ND	400	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
12672-29-6	Aroclor 1248	ND	400	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11097-69-1	Aroclor 1254	ND	400	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11096-82-5	Aroclor 1260	ND	400	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
37324-23-5	Aroclor 1262	ND	400	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11100-14-4	Aroclor 1268	ND	400	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			91.5 %	30-150		07/22/15	B5G1612	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			81.1 %	30-150		07/22/15	B5G1612	8081/8082	
<b>Inorganics-General Chemistry</b>									
TS	% Total Solids	50.5	0.1	%	1	07/14/15	B5G1324	2540 B	
57-12-5	Total Cyanide	ND	0.20	mg/kg dry	1	07/22/15	B5G2013	ASTM D7284	
<b>Inorganics-Metals</b>									
7429-90-5	Aluminium	12000	100	mg/kg dry	1000	07/22/15	B5G1701	6020/200.8	
7440-36-0	Antimony	ND	0.3	mg/kg dry	10	07/23/15	B5G2111	6020/200.8	
7440-38-2	Arsenic	5.4	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-39-3	Barium	78	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-41-7	Beryllium	0.7	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-43-9	Cadmium	0.2	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-47-3	Chromium	32	2.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7440-48-4	Cobalt	13	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7440-50-8	Copper	1400	100	mg/kg dry	1000	07/22/15	B5G1701	6020/200.8	
7439-89-6	Iron	19000	5.0	mg/kg dry	10	07/28/15	B5G1701	6010/200.7	
7439-92-1	Lead	20	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7439-93-2	Lithium	6.7	0.2	mg/kg dry	1	07/28/15	B5G1701	6010/200.7	
7439-95-4	Magnesium	9400	50	mg/kg dry	10	07/28/15	B5G1701	6010/200.7	
7439-96-5	Manganese	520	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7439-97-6	Mercury	ND	0.1	mg/kg dry	1	07/16/15	B5G1420	7471/245.5	
7440-02-0	Nickel	36	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7782-49-2	Selenium	ND	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-22-4	Silver	1.5	0.1	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-28-0	Thallium	ND	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-66-6	Zinc	75	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	



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Client ID: CHTC - SD - 03 - 1'-3'

Lab ID: 1507117-07

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Semivolatiles</b>									
									<b>See note Y20</b>
91-57-6	2-Methylnaphthalene	ND	660	ug/kg dry	1	07/18/15	B5G1421	8270	
83-32-9	Acenaphthene	ND	260	ug/kg dry	1	07/18/15	B5G1421	8270	
208-96-8	Acenaphthylene	ND	260	ug/kg dry	1	07/18/15	B5G1421	8270	
120-12-7	Anthracene	ND	260	ug/kg dry	1	07/18/15	B5G1421	8270	
56-55-3	Benz[a]anthracene	ND	260	ug/kg dry	1	07/18/15	B5G1421	8270	
50-32-8	Benzo[a]pyrene	ND	530	ug/kg dry	1	07/18/15	B5G1421	8270	
205-99-2	Benzo[b]fluoranthene	ND	530	ug/kg dry	1	07/18/15	B5G1421	8270	
191-24-2	Benzo[g,h,i]perylene	ND	530	ug/kg dry	1	07/18/15	B5G1421	8270	
207-08-9	Benzo[k]fluoranthene	ND	530	ug/kg dry	1	07/18/15	B5G1421	8270	
218-01-9	Chrysene	ND	260	ug/kg dry	1	07/18/15	B5G1421	8270	
53-70-3	Dibenz[a,h]anthracene	ND	530	ug/kg dry	1	07/18/15	B5G1421	8270	
206-44-0	Fluoranthene	ND	260	ug/kg dry	1	07/18/15	B5G1421	8270	
86-73-7	Fluorene	ND	260	ug/kg dry	1	07/18/15	B5G1421	8270	
193-39-5	Indeno(1,2,3-c,d)pyrene	ND	530	ug/kg dry	1	07/18/15	B5G1421	8270	
91-20-3	Naphthalene	ND	260	ug/kg dry	1	07/18/15	B5G1421	8270	
85-01-8	Phenanthrene	ND	260	ug/kg dry	1	07/18/15	B5G1421	8270	
129-00-0	Pyrene	ND	260	ug/kg dry	1	07/18/15	B5G1421	8270	
<i>Surrogate: 2-Fluorobiphenyl</i>			73.1 %	32.9-115		07/18/15	B5G1421	8270	
<i>Surrogate: Nitrobenzene-d5</i>			59.5 %	31.8-115		07/18/15	B5G1421	8270	
<i>Surrogate: p-Terphenyl-d14</i>			68.8 %	38.5-115		07/18/15	B5G1421	8270	
<b>Organics-PCBs as Aroclors</b>									
12674-11-2	Aroclor 1016	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11104-28-2	Aroclor 1221	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11141-16-5	Aroclor 1232	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
53469-21-9	Aroclor 1242	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
12672-29-6	Aroclor 1248	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11097-69-1	Aroclor 1254	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11096-82-5	Aroclor 1260	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
37324-23-5	Aroclor 1262	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11100-14-4	Aroclor 1268	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			89.6 %	30-150		07/22/15	B5G1612	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			82.5 %	30-150		07/22/15	B5G1612	8081/8082	



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**Client ID: CHTC - SD - 03 - 1'-3'**

**Lab ID: 1507117-07**

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Inorganics-General Chemistry</b>									
TS	% Total Solids	75.7	0.1	%	1	07/14/15	B5G1324	2540 B	



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**Client ID: CHTC - SD - 03 - 3'-4.66'**

**Lab ID: 1507117-08**

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-PCBs as Aroclors</b>									
12674-11-2	Aroclor 1016	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11104-28-2	Aroclor 1221	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11141-16-5	Aroclor 1232	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
53469-21-9	Aroclor 1242	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
12672-29-6	Aroclor 1248	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11097-69-1	Aroclor 1254	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11096-82-5	Aroclor 1260	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
37324-23-5	Aroclor 1262	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11100-14-4	Aroclor 1268	ND	130	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			87.0 %	30-150		07/22/15	B5G1612	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			77.5 %	30-150		07/22/15	B5G1612	8081/8082	
<b>Inorganics-General Chemistry</b>									
TS	<b>% Total Solids</b>	<b>78.4</b>	0.1	%	1	07/14/15	B5G1324	2540 B	



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Client ID: CHTC - SD - 04 - 0"-6"

Lab ID: 1507117-09

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Semivolatiles</b>									
									<b>See note Y20</b>
91-57-6	2-Methylnaphthalene	ND	2100	ug/kg dry	1	07/22/15	B5G1518	8270	
83-32-9	Acenaphthene	ND	840	ug/kg dry	1	07/22/15	B5G1518	8270	
208-96-8	Acenaphthylene	ND	840	ug/kg dry	1	07/22/15	B5G1518	8270	
120-12-7	Anthracene	ND	840	ug/kg dry	1	07/22/15	B5G1518	8270	
56-55-3	Benz[a]anthracene	ND	840	ug/kg dry	1	07/22/15	B5G1518	8270	
50-32-8	Benzo[a]pyrene	ND	1700	ug/kg dry	1	07/22/15	B5G1518	8270	
205-99-2	Benzo[b]fluoranthene	ND	1700	ug/kg dry	1	07/22/15	B5G1518	8270	
191-24-2	Benzo[g,h,i]perylene	ND	1700	ug/kg dry	1	07/22/15	B5G1518	8270	
207-08-9	Benzo[k]fluoranthene	ND	1700	ug/kg dry	1	07/22/15	B5G1518	8270	
218-01-9	Chrysene	ND	840	ug/kg dry	1	07/22/15	B5G1518	8270	
53-70-3	Dibenz[a,h]anthracene	ND	1700	ug/kg dry	1	07/22/15	B5G1518	8270	
206-44-0	Fluoranthene	ND	840	ug/kg dry	1	07/22/15	B5G1518	8270	
86-73-7	Fluorene	ND	840	ug/kg dry	1	07/22/15	B5G1518	8270	
193-39-5	Indeno(1,2,3-c,d)pyrene	ND	1700	ug/kg dry	1	07/22/15	B5G1518	8270	
91-20-3	Naphthalene	ND	840	ug/kg dry	1	07/22/15	B5G1518	8270	
85-01-8	Phenanthrene	ND	840	ug/kg dry	1	07/22/15	B5G1518	8270	
129-00-0	Pyrene	ND	840	ug/kg dry	1	07/22/15	B5G1518	8270	
<i>Surrogate: 2-Fluorobiphenyl</i>			65.9 %	32.9-115		07/22/15	B5G1518	8270	
<i>Surrogate: Nitrobenzene-d5</i>			56.5 %	31.8-115		07/22/15	B5G1518	8270	
<i>Surrogate: p-Terphenyl-d14</i>			105 %	38.5-115		07/22/15	B5G1518	8270	
<b>Organics-PCBs as Aroclors</b>									
									<b>See note Y20</b>
12674-11-2	Aroclor 1016	ND	340	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11104-28-2	Aroclor 1221	ND	340	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11141-16-5	Aroclor 1232	ND	340	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
53469-21-9	Aroclor 1242	ND	340	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
12672-29-6	Aroclor 1248	ND	340	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11097-69-1	Aroclor 1254	ND	340	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11096-82-5	Aroclor 1260	ND	340	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
37324-23-5	Aroclor 1262	ND	340	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11100-14-4	Aroclor 1268	ND	340	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			79.1 %	30-150		07/22/15	B5G1612	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			75.4 %	30-150		07/22/15	B5G1612	8081/8082	



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Client ID: CHTC - SD - 04 - 0"-6"

Lab ID: 1507117-09

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Inorganics-General Chemistry</b>									
TS	<b>% Total Solids</b>	<b>59.6</b>	0.1	%	1	07/14/15	B5G1324	2540 B	
57-12-5	Total Cyanide	ND	0.17	mg/kg dry	1	07/22/15	B5G2013	ASTM D7284	
<b>Inorganics-Metals</b>									
7429-90-5	<b>Aluminium</b>	<b>12000</b>	100	mg/kg dry	1000	07/22/15	B5G1701	6020/200.8	
7440-36-0	Antimony	ND	0.3	mg/kg dry	10	07/23/15	B5G2111	6020/200.8	
7440-38-2	<b>Arsenic</b>	<b>4.8</b>	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-39-3	<b>Barium</b>	<b>86</b>	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-41-7	<b>Beryllium</b>	<b>0.8</b>	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-43-9	<b>Cadmium</b>	<b>0.2</b>	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-47-3	<b>Chromium</b>	<b>36</b>	2.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7440-48-4	<b>Cobalt</b>	<b>14</b>	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7440-50-8	<b>Copper</b>	<b>1900</b>	100	mg/kg dry	1000	07/22/15	B5G1701	6020/200.8	
7439-89-6	<b>Iron</b>	<b>22000</b>	5.0	mg/kg dry	10	07/28/15	B5G1701	6010/200.7	
7439-92-1	<b>Lead</b>	<b>19</b>	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7439-93-2	<b>Lithium</b>	<b>8.5</b>	0.2	mg/kg dry	1	07/28/15	B5G1701	6010/200.7	
7439-95-4	<b>Magnesium</b>	<b>10000</b>	50	mg/kg dry	10	07/28/15	B5G1701	6010/200.7	
7439-96-5	<b>Manganese</b>	<b>350</b>	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7439-97-6	Mercury	ND	0.08	mg/kg dry	1	07/16/15	B5G1420	7471/245.5	
7440-02-0	<b>Nickel</b>	<b>41</b>	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7782-49-2	Selenium	ND	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-22-4	<b>Silver</b>	<b>1.4</b>	0.1	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-28-0	Thallium	ND	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-66-6	<b>Zinc</b>	<b>81</b>	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	



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Client ID: CHTC - SD - 04 - 1'-3'

Lab ID: 1507117-10

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Semivolatiles</b>									
									<b>See note Y20</b>
91-57-6	2-Methylnaphthalene	ND	680	ug/kg dry	1	07/21/15	B5G1518	8270	
83-32-9	Acenaphthene	ND	270	ug/kg dry	1	07/21/15	B5G1518	8270	
208-96-8	Acenaphthylene	ND	270	ug/kg dry	1	07/21/15	B5G1518	8270	
120-12-7	Anthracene	ND	270	ug/kg dry	1	07/21/15	B5G1518	8270	
56-55-3	Benz[a]anthracene	ND	270	ug/kg dry	1	07/21/15	B5G1518	8270	
50-32-8	Benzo[a]pyrene	ND	540	ug/kg dry	1	07/21/15	B5G1518	8270	
205-99-2	Benzo[b]fluoranthene	ND	540	ug/kg dry	1	07/21/15	B5G1518	8270	
191-24-2	Benzo[g,h,i]perylene	ND	540	ug/kg dry	1	07/21/15	B5G1518	8270	
207-08-9	Benzo[k]fluoranthene	ND	540	ug/kg dry	1	07/21/15	B5G1518	8270	
218-01-9	Chrysene	ND	270	ug/kg dry	1	07/21/15	B5G1518	8270	
53-70-3	Dibenz[a,h]anthracene	ND	540	ug/kg dry	1	07/21/15	B5G1518	8270	
206-44-0	Fluoranthene	ND	270	ug/kg dry	1	07/21/15	B5G1518	8270	
86-73-7	Fluorene	ND	270	ug/kg dry	1	07/21/15	B5G1518	8270	
193-39-5	Indeno(1,2,3-c,d)pyrene	ND	540	ug/kg dry	1	07/21/15	B5G1518	8270	
91-20-3	Naphthalene	ND	270	ug/kg dry	1	07/21/15	B5G1518	8270	
85-01-8	Phenanthrene	ND	270	ug/kg dry	1	07/21/15	B5G1518	8270	
129-00-0	Pyrene	ND	270	ug/kg dry	1	07/21/15	B5G1518	8270	
<i>Surrogate: 2-Fluorobiphenyl</i>			39.9 %	32.9-115		07/21/15	B5G1518	8270	
<i>Surrogate: Nitrobenzene-d5</i>			61.9 %	31.8-115		07/21/15	B5G1518	8270	
<i>Surrogate: p-Terphenyl-d14</i>			112 %	38.5-115		07/21/15	B5G1518	8270	
<b>Organics-PCBs as Aroclors</b>									
									<b>See note Y20</b>
12674-11-2	Aroclor 1016	ND	270	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11104-28-2	Aroclor 1221	ND	270	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11141-16-5	Aroclor 1232	ND	270	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
53469-21-9	Aroclor 1242	ND	270	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
12672-29-6	Aroclor 1248	ND	270	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11097-69-1	Aroclor 1254	ND	270	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11096-82-5	Aroclor 1260	ND	270	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
37324-23-5	Aroclor 1262	ND	270	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
11100-14-4	Aroclor 1268	ND	270	ug/kg dry	1	07/22/15	B5G1612	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			82.3 %	30-150		07/22/15	B5G1612	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			77.2 %	30-150		07/22/15	B5G1612	8081/8082	



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Client ID: CHTC - SD - 04 - 1'-3'

Lab ID: 1507117-10

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Inorganics-General Chemistry</b>									
TS	% Total Solids	73.6	0.1	%	1	07/14/15	B5G1324	2540 B	
57-12-5	Total Cyanide	ND	0.14	mg/kg dry	1	07/22/15	B5G2013	ASTM D7284	
<b>Inorganics-Metals</b>									
7429-90-5	Aluminium	7700	10	mg/kg dry	100	07/22/15	B5G1701	6020/200.8	
7440-36-0	Antimony	ND	0.3	mg/kg dry	10	07/23/15	B5G2111	6020/200.8	
7440-38-2	Arsenic	2.1	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-39-3	Barium	73	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-41-7	Beryllium	0.9	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-43-9	Cadmium	ND	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-47-3	Chromium	39	2.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7440-48-4	Cobalt	15	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7440-50-8	Copper	1400	10	mg/kg dry	100	07/22/15	B5G1701	6020/200.8	
7439-89-6	Iron	22000	5.0	mg/kg dry	10	07/28/15	B5G1701	6010/200.7	
7439-92-1	Lead	3.3	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7439-93-2	Lithium	8.6	0.2	mg/kg dry	1	07/28/15	B5G1701	6010/200.7	
7439-95-4	Magnesium	12000	50	mg/kg dry	10	07/28/15	B5G1701	6010/200.7	
7439-96-5	Manganese	340	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7439-97-6	Mercury	ND	0.07	mg/kg dry	1	07/16/15	B5G1420	7471/245.5	
7440-02-0	Nickel	39	10	mg/kg dry	100	07/22/15	B5G1701	6020/200.8	
7782-49-2	Selenium	ND	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-22-4	Silver	1.2	0.1	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-28-0	Thallium	ND	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-66-6	Zinc	70	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	





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P.O. Box 30270  
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Client ID: CHTC - SD - 04 - 3'-4.25'

Lab ID: 1507117-11

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Semivolatiles</b>									
									<b>See note Y20</b>
91-57-6	2-Methylnaphthalene	ND	1800	ug/kg dry	1	07/21/15	B5G1518	8270	
83-32-9	Acenaphthene	ND	710	ug/kg dry	1	07/21/15	B5G1518	8270	
208-96-8	Acenaphthylene	ND	710	ug/kg dry	1	07/21/15	B5G1518	8270	
120-12-7	Anthracene	ND	710	ug/kg dry	1	07/21/15	B5G1518	8270	
56-55-3	Benz[a]anthracene	ND	710	ug/kg dry	1	07/21/15	B5G1518	8270	
50-32-8	Benzo[a]pyrene	ND	1400	ug/kg dry	1	07/21/15	B5G1518	8270	
205-99-2	Benzo[b]fluoranthene	ND	1400	ug/kg dry	1	07/21/15	B5G1518	8270	
191-24-2	Benzo[g,h,i]perylene	ND	1400	ug/kg dry	1	07/21/15	B5G1518	8270	
207-08-9	Benzo[k]fluoranthene	ND	1400	ug/kg dry	1	07/21/15	B5G1518	8270	
218-01-9	Chrysene	ND	710	ug/kg dry	1	07/21/15	B5G1518	8270	
53-70-3	Dibenz[a,h]anthracene	ND	1400	ug/kg dry	1	07/21/15	B5G1518	8270	
206-44-0	Fluoranthene	ND	710	ug/kg dry	1	07/21/15	B5G1518	8270	
86-73-7	Fluorene	ND	710	ug/kg dry	1	07/21/15	B5G1518	8270	
193-39-5	Indeno(1,2,3-c,d)pyrene	ND	1400	ug/kg dry	1	07/21/15	B5G1518	8270	
91-20-3	Naphthalene	ND	710	ug/kg dry	1	07/21/15	B5G1518	8270	
85-01-8	Phenanthrene	ND	710	ug/kg dry	1	07/21/15	B5G1518	8270	
129-00-0	Pyrene	ND	710	ug/kg dry	1	07/21/15	B5G1518	8270	
<i>Surrogate: 2-Fluorobiphenyl</i>			38.3 %	32.9-115		07/21/15	B5G1518	8270	
<i>Surrogate: Nitrobenzene-d5</i>			57.2 %	31.8-115		07/21/15	B5G1518	8270	
<i>Surrogate: p-Terphenyl-d14</i>			146 %	38.5-115		07/21/15	B5G1518	8270	A02
<b>Organics-PCBs as Aroclors</b>									
									<b>See note Y20</b>
12674-11-2	Aroclor 1016	ND	290	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11104-28-2	Aroclor 1221	ND	290	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11141-16-5	Aroclor 1232	ND	290	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
53469-21-9	Aroclor 1242	ND	290	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
12672-29-6	Aroclor 1248	ND	290	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11097-69-1	Aroclor 1254	ND	290	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11096-82-5	Aroclor 1260	ND	290	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
37324-23-5	Aroclor 1262	ND	290	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11100-14-4	Aroclor 1268	ND	290	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			74.2 %	30-150		07/25/15	B5G2020	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			73.7 %	30-150		07/25/15	B5G2020	8081/8082	



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Client ID: CHTC - SD - 04 - 3'-4.25'

Lab ID: 1507117-11

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Inorganics-General Chemistry</b>									
TS	<b>% Total Solids</b>	<b>69.9</b>	0.1	%	1	07/14/15	B5G1324	2540 B	
57-12-5	Total Cyanide	ND	0.14	mg/kg dry	1	07/22/15	B5G2013	ASTM D7284	
<b>Inorganics-Metals</b>									
7429-90-5	<b>Aluminium</b>	<b>22000</b>	10	mg/kg dry	100	07/22/15	B5G1701	6020/200.8	
7440-36-0	Antimony	ND	0.3	mg/kg dry	10	07/23/15	B5G2111	6020/200.8	
7440-38-2	<b>Arsenic</b>	<b>2.5</b>	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-39-3	<b>Barium</b>	<b>58</b>	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-41-7	<b>Beryllium</b>	<b>0.6</b>	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-43-9	Cadmium	ND	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-47-3	<b>Chromium</b>	<b>48</b>	2.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7440-48-4	<b>Cobalt</b>	<b>26</b>	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7440-50-8	<b>Copper</b>	<b>1200</b>	10	mg/kg dry	100	07/22/15	B5G1701	6020/200.8	
7439-89-6	<b>Iron</b>	<b>37000</b>	5.0	mg/kg dry	10	07/28/15	B5G1701	6010/200.7	
7439-92-1	<b>Lead</b>	<b>6.5</b>	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7439-93-2	<b>Lithium</b>	<b>12</b>	0.2	mg/kg dry	1	07/28/15	B5G1701	6010/200.7	
7439-95-4	<b>Magnesium</b>	<b>22000</b>	50	mg/kg dry	10	07/28/15	B5G1701	6010/200.7	
7439-96-5	<b>Manganese</b>	<b>440</b>	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	A09
7439-97-6	Mercury	ND	0.07	mg/kg dry	1	07/16/15	B5G1420	7471/245.5	
7440-02-0	<b>Nickel</b>	<b>92</b>	10	mg/kg dry	100	07/22/15	B5G1701	6020/200.8	
7782-49-2	Selenium	ND	0.2	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-22-4	<b>Silver</b>	<b>1.1</b>	0.1	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-28-0	Thallium	ND	0.5	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	
7440-66-6	<b>Zinc</b>	<b>93</b>	1.0	mg/kg dry	10	07/20/15	B5G1701	6020/200.8	



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Client ID: CHTC - SD - 04 - 1'-3' DUP

Lab ID: 1507117-12

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-Semivolatiles</b>									
									<b>See note Y20</b>
91-57-6	2-Methylnaphthalene	ND	1700	ug/kg dry	1	07/23/15	B5G1730	8270	
83-32-9	Acenaphthene	ND	670	ug/kg dry	1	07/23/15	B5G1730	8270	
208-96-8	Acenaphthylene	ND	670	ug/kg dry	1	07/23/15	B5G1730	8270	
120-12-7	Anthracene	ND	670	ug/kg dry	1	07/23/15	B5G1730	8270	
56-55-3	Benz[a]anthracene	ND	670	ug/kg dry	1	07/23/15	B5G1730	8270	
50-32-8	Benzo[a]pyrene	ND	1300	ug/kg dry	1	07/23/15	B5G1730	8270	
205-99-2	Benzo[b]fluoranthene	ND	1300	ug/kg dry	1	07/23/15	B5G1730	8270	
191-24-2	Benzo[g,h,i]perylene	ND	1300	ug/kg dry	1	07/23/15	B5G1730	8270	
207-08-9	Benzo[k]fluoranthene	ND	1300	ug/kg dry	1	07/23/15	B5G1730	8270	
218-01-9	Chrysene	ND	670	ug/kg dry	1	07/23/15	B5G1730	8270	
53-70-3	Dibenz[a,h]anthracene	ND	1300	ug/kg dry	1	07/23/15	B5G1730	8270	
206-44-0	Fluoranthene	ND	670	ug/kg dry	1	07/23/15	B5G1730	8270	
86-73-7	Fluorene	ND	670	ug/kg dry	1	07/23/15	B5G1730	8270	
193-39-5	Indeno(1,2,3-c,d)pyrene	ND	1300	ug/kg dry	1	07/23/15	B5G1730	8270	
91-20-3	Naphthalene	ND	670	ug/kg dry	1	07/23/15	B5G1730	8270	
85-01-8	Phenanthrene	ND	670	ug/kg dry	1	07/23/15	B5G1730	8270	
129-00-0	Pyrene	ND	670	ug/kg dry	1	07/23/15	B5G1730	8270	
<i>Surrogate: 2-Fluorobiphenyl</i>			76.4 %	32.9-115		07/23/15	B5G1730	8270	
<i>Surrogate: Nitrobenzene-d5</i>			70.9 %	31.8-115		07/23/15	B5G1730	8270	
<i>Surrogate: p-Terphenyl-d14</i>			77.2 %	38.5-115		07/23/15	B5G1730	8270	
<b>Organics-PCBs as Aroclors</b>									
									<b>See note Y20</b>
12674-11-2	Aroclor 1016	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11104-28-2	Aroclor 1221	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11141-16-5	Aroclor 1232	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
53469-21-9	Aroclor 1242	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
12672-29-6	Aroclor 1248	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11097-69-1	Aroclor 1254	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11096-82-5	Aroclor 1260	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
37324-23-5	Aroclor 1262	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11100-14-4	Aroclor 1268	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			74.2 %	30-150		07/25/15	B5G2020	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			70.3 %	30-150		07/25/15	B5G2020	8081/8082	



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Client ID: CHTC - SD - 04 - 1'-3' DUP

Lab ID: 1507117-12

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Inorganics-General Chemistry</b>									
TS	% Total Solids	74.5	0.1	%	1	07/14/15	B5G1414	2540 B	



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Client ID: CHTC - SD - 09 - 0"-6"

Lab ID: 1507117-13

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-PCBs as Aroclors</b>									
<b>See note Y20</b>									
12674-11-2	Aroclor 1016	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11104-28-2	Aroclor 1221	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11141-16-5	Aroclor 1232	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
53469-21-9	Aroclor 1242	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
12672-29-6	Aroclor 1248	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11097-69-1	Aroclor 1254	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11096-82-5	Aroclor 1260	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
37324-23-5	Aroclor 1262	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11100-14-4	Aroclor 1268	ND	270	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			91.1 %	30-150		07/25/15	B5G2020	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			63.0 %	30-150		07/25/15	B5G2020	8081/8082	
<b>Inorganics-General Chemistry</b>									
TS	% Total Solids	75.2	0.1	%	1	07/14/15	B5G1414	2540 B	



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Client ID: CHTC - SD - 09 - 1'-3'

Lab ID: 1507117-14

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-PCBs as Aroclors</b>									<b>See note Y20</b>
12674-11-2	Aroclor 1016	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11104-28-2	Aroclor 1221	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11141-16-5	Aroclor 1232	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
53469-21-9	Aroclor 1242	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
12672-29-6	Aroclor 1248	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11097-69-1	Aroclor 1254	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11096-82-5	Aroclor 1260	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
37324-23-5	Aroclor 1262	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11100-14-4	Aroclor 1268	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			95.5 %	30-150		07/25/15	B5G2020	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			65.9 %	30-150		07/25/15	B5G2020	8081/8082	
<b>Inorganics-General Chemistry</b>									
TS	<b>% Total Solids</b>	<b>76.6</b>	0.1	%	1	07/14/15	B5G1414	2540 B	



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Client ID: CHTC - SD - 09 - 3'-5'

Lab ID: 1507117-15

CAS #	Analyte	Result	RL	Units	Dilution	Analyzed Date	QC Batch	Method	Qualifier
<b>Organics-PCBs as Aroclors</b>									<b>See note Y20</b>
12674-11-2	Aroclor 1016	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11104-28-2	Aroclor 1221	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11141-16-5	Aroclor 1232	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
53469-21-9	Aroclor 1242	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
12672-29-6	Aroclor 1248	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11097-69-1	Aroclor 1254	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11096-82-5	Aroclor 1260	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
37324-23-5	Aroclor 1262	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
11100-14-4	Aroclor 1268	ND	260	ug/kg dry	1	07/25/15	B5G2020	8081/8082	
<i>Surrogate: Decachlorobiphenyl</i>			71.7 %	30-150		07/25/15	B5G2020	8081/8082	
<i>Surrogate: Tetrachloro-m-xylene</i>			63.4 %	30-150		07/25/15	B5G2020	8081/8082	
<b>Inorganics-General Chemistry</b>									
TS	<b>% Total Solids</b>	<b>76.2</b>	0.1	%	1	07/14/15	B5G1414	2540 B	



# Analysis Request Sheet

Lab Work Order Number <b>1507117</b>	Project Name <b>Abandoned Mining Wastes - Torch Lake PCB C&amp;M Tamarack City Ops</b>	Matrix <b>SEDIMENT</b>
Site Code/Project Number <b>31000098</b>	AY <b>13</b>	CC Email 1 <b>j.binkley@westonsolutions.com</b>
Dept/Division/District <b>DEQ-RRD-UP District</b>	Index <b>44251</b>	CC Email 2 <b>daniel.liebau@westonsolutions.com</b>
State Project Manager <b>Amy Keranen</b>	PCA <b>30872</b>	CC Email 3 <b>pincumbef@michigan.gov</b>
State Project Manager Email <b>keranena@michigan.gov</b>	Project <b>456990</b>	Overflow Lab Choice 1
State Project Manager Phone <b>906-337-0389</b>	Phase <b>00</b>	Overflow Lab Choice 2
		Accept Analysis hold time codes <b>no</b>
		Sample Collector <b>AK/JP/AB-DEQ-RRD</b>
		Sample Collector Phone <b>906-337-0389</b>
		Contract Firm <b>Weston Solutions</b>
		Contract Firm Primary Contact <b>Jeff Binkley</b>
		Primary Contact Phone <b>906-523-5457</b>

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1 01	CHTC-SD-01-0'-6"	7/7/15	1220	1	
2 02	CHTC-SD-01- <del>0'-6"</del> - 1'-2.66'	}	1230	1	
3 03	CHTC-SD-02-0'-6"		1340	1	
4 04	CHTC-SD-02-1'-3'		1350	1	
5 05	CHTC-SD-02-3'-3.33'		1400	1	
6 06	CHTC-SD-03-0'-6"		1515	1	
7 07	CHTC-SD-03-1'-3'		1535	1	
8 08	CHTC-SD-03-3'-4.66'		1540	1	
9 09	CHTC-SD-04-0'-6"	7/8/15	1500	1	
10 10	CHTC-SD-04-1'-3'	7/8/15	1505	1	

ORGANIC CHEMISTRY	METALS CHEMISTRY PACKAGES	MS - TOTAL METALS	GENERAL CHEMISTRY
<b>VOA - Volatile Organic Acidic</b> Volatiles - Full List 1 2 3 4 5 6 7 8 9 10 BTEX/MTBE/TMB only 1 2 3 4 5 6 7 8 9 10 Chlorinated only 1 2 3 4 5 6 7 8 9 10 GRO 1 2 3 4 5 6 7 8 9 10 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10  <b>OS - Pesticides, PCBs</b> Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10 Pesticides only 1 2 3 4 5 6 7 8 9 10 PCBs only 1 2 3 4 5 6 7 8 9 10 Toxaphene 1 2 3 4 5 6 7 8 9 10  <b>BNA - Base Neutral Acids</b> BHAs 1 2 3 4 5 6 7 8 9 10 PNAs only 1 2 3 4 5 6 7 8 9 10 BHs only 1 2 3 4 5 6 7 8 9 10  <b>Organic Specialty Requests</b> Library search - Volatiles 1 2 3 4 5 6 7 8 9 10 Library search - SemiVols 1 2 3 4 5 6 7 8 9 10 Finger Print 1 2 3 4 5 6 7 8 9 10 DRO/ORO 1 2 3 4 5 6 7 8 9 10	<b>OpMemo2 - Total</b> 1 2 3 4 5 6 7 8 9 10 (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Ti,V,Zn) <b>Michigan10 - Total</b> 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	<b>Silver - Ag</b> 1 2 3 4 5 6 7 8 9 10 <b>Aluminum - Al</b> 1 2 3 4 5 6 7 8 9 10 <b>Arsenic - As</b> 1 2 3 4 5 6 7 8 9 10 <b>Barium - Ba</b> 1 2 3 4 5 6 7 8 9 10 <b>Beryllium - Be</b> 1 2 3 4 5 6 7 8 9 10 <b>Cadmium - Cd</b> 1 2 3 4 5 6 7 8 9 10 <b>Cobalt - Co</b> 1 2 3 4 5 6 7 8 9 10 <b>Chromium - Cr</b> 1 2 3 4 5 6 7 8 9 10 <b>Copper - Cu</b> 1 2 3 4 5 6 7 8 9 10 <b>Iron - Fe</b> 1 2 3 4 5 6 7 8 9 10 <b>Mercury - Hg</b> 1 2 3 4 5 6 7 8 9 10 <b>Lithium - Li</b> 1 2 3 4 5 6 7 8 9 10 <b>Manganese - Mn</b> 1 2 3 4 5 6 7 8 9 10 <b>Molybdenum - Mo</b> 1 2 3 4 5 6 7 8 9 10 <b>Nickel - Ni</b> 1 2 3 4 5 6 7 8 9 10 <b>Lead - Pb</b> 1 2 3 4 5 6 7 8 9 10 <b>Antimony - Sb</b> 1 2 3 4 5 6 7 8 9 10 <b>Selenium - Se</b> 1 2 3 4 5 6 7 8 9 10 <b>Strontium - Sr</b> 1 2 3 4 5 6 7 8 9 10 <b>Titanium - Ti</b> 1 2 3 4 5 6 7 8 9 10 <b>Thallium - Tl</b> 1 2 3 4 5 6 7 8 9 10 <b>Uranium - U</b> 1 2 3 4 5 6 7 8 9 10 <b>Vanadium - V</b> 1 2 3 4 5 6 7 8 9 10 <b>Zinc - Zn</b> 1 2 3 4 5 6 7 8 9 10 <b>Calcium - Ca</b> 1 2 3 4 5 6 7 8 9 10 <b>Potassium - K</b> 1 2 3 4 5 6 7 8 9 10 <b>Magnesium - Mg</b> 1 2 3 4 5 6 7 8 9 10 <b>Sodium - Na</b> 1 2 3 4 5 6 7 8 9 10	<b>GS - General Chemistry</b> <b>Total Cyanide - CN</b> 1 2 3 4 5 6 7 8 9 10 <b>Available Cyanide - CN</b> 1 2 3 4 5 6 7 8 9 10 <b>Chem Oxyg Dem - COD</b> 1 2 3 4 5 6 7 8 9 10 <b>Total Org Carbon - TOC</b> 1 2 3 4 5 6 7 8 9 10 <b>Kjeldahl Nitrogen - KN</b> 1 2 3 4 5 6 7 8 9 10 <b>Total Phosphorus - TP</b> 1 2 3 4 5 6 7 8 9 10

Chain of Custody	Relinquished by	Received By	Date / Time	
	Print Name & Org. <b>Dan Peabody, DEQ</b> Signature: <i>[Signature]</i>	Print Name & Org. <b>Amy Keranen, DEQ</b> Signature: <i>[Signature]</i>	<b>7/10/15 1400</b> <b>7/9/15 1:30p</b>	
	Print Name & Org. <b>UPS</b> Signature: <b>J236 145 5783</b>	Print Name & Org. <b>Joshua Perry, MDEQ</b> Signature: <i>[Signature]</i>	<b>7/13/15 916</b>	



Lab Work Order Number <b>150717</b>	Project Name <b>Abandoned Mining Wastes - Torch Lake PCB C&amp;H Tamarack City Ops</b>	Matrix <b>SEDIMENT</b>
Site Code/Project Number <b>31000098</b>	AT <b>13</b>	CC Email 1 <b>jblinkley@westonsolutions.com</b>
Dept/Division/District <b>DEQ-RRD-UP District</b>	Index <b>44251</b>	CC Email 2 <b>daniel.liebau@westonsolutions.com</b>
State Project Manager <b>Amy Keranen</b>	PCA <b>30872</b>	CC Email 3 <b>plncumbel@michigan.gov</b>
State Project Manager Email <b>keranena@michigan.gov</b>	Project <b>456990</b>	Overflow Lab Choice 1
State Project Manager Phone <b>906-337-0389</b>	Phase <b>00</b>	Overflow Lab Choice 2
		Project Due Date
		Sample Collector <b>AK/JP/AB-DEQ-RRD</b> <b>(DP)</b>
		Sample Collector Phone <b>906-337-0389</b>
		Contract Firm <b>Weston Solutions</b>
		Contract Firm Primary Contact <b>Jeff Binkley</b>
		Primary Contact Phone <b>906-523-5457</b>
		Accept Analysis hold time codes <b>no</b>

Lab Use Only	Field Sample Identification	Collection Date	Collection Time	Container Count	Comments
1	CHTC-SD-04-3'-4.25'	7/8/15	1510	1	
2	CHTC-SD-04-1'-3' dup	7/8/15	1505	1	
3	CHTC-SD-04-0"-6"	7/8/15	1720	1	
4	CHTC-SD-04-1'-3'	↓	1725	1	
5	CHTC-SD-04-3'-5'	↓	1730	1	
6	CHTC-SD-				
7	CHTC-SD-				
8	CHTC-SD-				
9	CHTC-SD-				
10	CHTC-SD-				

ORGANIC CHEMISTRY	METALS CHEMISTRY PACKAGES	MS - TOTAL METALS	GENERAL CHEMISTRY
<b>VOA - Volatile Organic Acidic</b> Volatiles - Full List 1 2 3 4 5 6 7 8 9 10 BTEX/MTBE/TMB only 1 2 3 4 5 6 7 8 9 10 Chlorinated only 1 2 3 4 5 6 7 8 9 10 GRO 1 2 3 4 5 6 7 8 9 10 1,4 Dioxane 1 2 3 4 5 6 7 8 9 10  <b>OS - Pesticides, PCBs</b> Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10 Pesticides only 1 2 3 4 5 6 7 8 9 10 PCBs only 00000 6 7 8 9 10 Toxaphene 1 2 3 4 5 6 7 8 9 10  <b>BNA - Base Neutral Acids</b> BNAs 1 2 3 4 5 6 7 8 9 10 PNAs only 1 2 3 4 5 6 7 8 9 10 BNAs only 1 2 3 4 5 6 7 8 9 10  <b>Organic Specialty Requests</b> Library search - Volatiles 1 2 3 4 5 6 7 8 9 10 Library search - SemiVolts 1 2 3 4 5 6 7 8 9 10 Finger Print 1 2 3 4 5 6 7 8 9 10 DRO/ORO 1 2 3 4 5 6 7 8 9 10	<b>OpMemo2 - Total</b> 1 2 3 4 5 6 7 8 9 10 (Sb,As,Ba,Be,Cd,Cr,Cu,Co,Fe,Pb,Mn,Hg,Mo,Ni,Se,Ag,Tl,V,Zn) <b>Michigan10 - Total</b> 1 2 3 4 5 6 7 8 9 10 (As,Ba,Cd,Cr,Cu,Pb,Hg,Se,Ag,Zn)	<b>Silver - Ag</b> 1 2 3 4 5 6 7 8 9 10 <b>Aluminum - Al</b> 1 2 3 4 5 6 7 8 9 10 <b>Arsenic - As</b> 1 2 3 4 5 6 7 8 9 10 <b>Barium - Ba</b> 1 2 3 4 5 6 7 8 9 10 <b>Beryllium - Be</b> 1 2 3 4 5 6 7 8 9 10 <b>Cadmium - Cd</b> 1 2 3 4 5 6 7 8 9 10 <b>Cobalt - Co</b> 1 2 3 4 5 6 7 8 9 10 <b>Chromium - Cr</b> 1 2 3 4 5 6 7 8 9 10 <b>Copper - Cu</b> 1 2 3 4 5 6 7 8 9 10 <b>Iron - Fe</b> 1 2 3 4 5 6 7 8 9 10 <b>Mercury - Hg</b> 1 2 3 4 5 6 7 8 9 10 <b>Lithium - Li</b> 1 2 3 4 5 6 7 8 9 10 <b>Manganese - Mn</b> 1 2 3 4 5 6 7 8 9 10 <b>Molybdenum - Mo</b> 1 2 3 4 5 6 7 8 9 10 <b>Nickel - Ni</b> 1 2 3 4 5 6 7 8 9 10 <b>Lead - Pb</b> 1 2 3 4 5 6 7 8 9 10 <b>Antimony - Sb</b> 1 2 3 4 5 6 7 8 9 10 <b>Selenium - Se</b> 1 2 3 4 5 6 7 8 9 10 <b>Strontium - Sr</b> 1 2 3 4 5 6 7 8 9 10 <b>Titanium - Ti</b> 1 2 3 4 5 6 7 8 9 10 <b>Thallium - Tl</b> 1 2 3 4 5 6 7 8 9 10 <b>Uranium - U</b> 1 2 3 4 5 6 7 8 9 10 <b>Vanadium - V</b> 1 2 3 4 5 6 7 8 9 10 <b>Zinc - Zn</b> 1 2 3 4 5 6 7 8 9 10 <b>Calcium - Ca</b> 1 2 3 4 5 6 7 8 9 10 <b>Potassium - K</b> 1 2 3 4 5 6 7 8 9 10 <b>Magnesium - Mg</b> 1 2 3 4 5 6 7 8 9 10 <b>Sodium - Na</b> 1 2 3 4 5 6 7 8 9 10	<b>GS - General Chemistry</b> <b>Total Cyanide - CN</b> 1 2 3 4 5 6 7 8 9 10 <b>Available Cyanide - CN</b> 1 2 3 4 5 6 7 8 9 10 <b>Chem Oxyg Dem - COD</b> 1 2 3 4 5 6 7 8 9 10 <b>Total Org Carbon - TOC</b> 1 2 3 4 5 6 7 8 9 10 <b>Kjeldahl Nitrogen - KN</b> 1 2 3 4 5 6 7 8 9 10 <b>Total Phosphorus - TP</b> 1 2 3 4 5 6 7 8 9 10

Chain of Custody	Relinquished by	Received By	Date / Time
	Print Name & Org. <b>Dan Peabody, DEQ</b>	 <b>DANIEL LIEBAU</b>	<b>7/10/15 1400</b>
	Signature: 	<b>WESTON TO UPS</b>	
	Print Name & Org. <b>UPS</b>	 <b>JOSHUA PUNG MPE U</b>	<b>7/13/15 916</b>
Signature: <b>J236 145 5783</b>			
Print Name & Org. <b>N410 612 9553</b>			
Signature:			