



HEMMERA ENVIROCHEM INC.  
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Date Received: 27-MAY-16  
Report Date: 13-JUL-16 14:35 (MT)  
Version: FINAL REV. 3

Client Phone: 867-456-4865

## Certificate of Analysis

Lab Work Order #: L1774699  
Project P.O. #: NOT SUBMITTED  
Job Reference: 1343-005.27  
C of C Numbers: 1, 2  
Legal Site Desc:

Comments:

13-JUL-2016 This report replaces the previous version and contains a corrected NO2 result for the Travel Blank.

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Brent Mack, B.Sc.  
Account Manager

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## ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	Description	Sampled Date	Sampled Time	Client ID	L1774699-1	L1774699-2	L1774699-3	L1774699-4	L1774699-5
					Water	Water	Water	Water	Water
		24-MAY-16	16:50	MW09-16	24-MAY-16	25-MAY-16	25-MAY-16	25-MAY-16	26-MAY-16
						08:45	17:20	10:25	11:40
					MW09-16	MW09-18	MW09-24	GSI-HA-01A	MW09-02
Grouping	Analyte								
<b>WATER</b>									
<b>Physical Tests</b>	Conductivity (uS/cm)	2060	2740	1020	823	2510			
	Hardness (as CaCO3) (mg/L)	1390	1870	661	528	1520			
	pH (pH)	7.44	7.80	8.08	8.16	7.45			
<b>Anions and Nutrients</b>	Alkalinity, Total (as CaCO3) (mg/L)	195	423	239	243	70.1			
	Ammonia, Total (as N) (mg/L)	0.0267	0.0118	0.0119	0.0384	7.35			
	Chloride (Cl) (mg/L)	<2.5 <sup>DLDS</sup>	<5.0 <sup>DLDS</sup>	<1.0 <sup>DLDS</sup>	0.97	<2.5 <sup>DLDS</sup>			
	Fluoride (F) (mg/L)	0.13	<0.20 <sup>DLDS</sup>	<0.040 <sup>DLDS</sup>	0.133	0.54			
	Nitrate (as N) (mg/L)	<0.025 <sup>DLDS</sup>	0.077	1.91	0.0123	0.153			
	Nitrite (as N) (mg/L)	<0.0050 <sup>DLDS</sup>	<0.010 <sup>DLDS</sup>	0.0020	0.0036	<0.0050 <sup>DLDS</sup>			
	Total Kjeldahl Nitrogen (mg/L)	0.167	0.108	0.539	0.566	8.08			
	Sulfate (SO4) (mg/L)	1100	1390	331	220	1440			
	Anion Sum (meq/L)	26.8	37.3	11.8	9.47	31.3			
	Cation Sum (meq/L)	28.5	38.1	13.6	11.1	34.4			
	Cation - Anion Balance (%)	3.0	1.1	7.1	8.0	4.6			
<b>Cyanides</b>	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.010			
	Cyanide, Total (mg/L)	<0.010 <sup>DLM</sup>	<0.0050	<0.0050	<0.0050	<0.020 <sup>DLM</sup>			
	Thiocyanate (SCN) (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50			
	Cyanide, Free (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.010			
<b>Organic / Inorganic Carbon</b>	Total Inorganic Carbon (mg/L)	53.2	118	59.6	60.4	17.6			
	Total Organic Carbon (mg/L)	3.78	3.20	8.88	13.6	6.42			
<b>Total Metals</b>	Aluminum (Al)-Total (mg/L)								
	Antimony (Sb)-Total (mg/L)								
	Arsenic (As)-Total (mg/L)								
	Barium (Ba)-Total (mg/L)								
	Beryllium (Be)-Total (mg/L)								
	Bismuth (Bi)-Total (mg/L)								
	Boron (B)-Total (mg/L)								
	Cadmium (Cd)-Total (mg/L)								
	Calcium (Ca)-Total (mg/L)								
	Chromium (Cr)-Total (mg/L)								
	Cobalt (Co)-Total (mg/L)								
	Copper (Cu)-Total (mg/L)								
	Iron (Fe)-Total (mg/L)								
	Lead (Pb)-Total (mg/L)								
	Lithium (Li)-Total (mg/L)								
Magnesium (Mg)-Total (mg/L)									

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.

## ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1774699-6 Water 26-MAY-16 12:40 MW09-03	L1774699-7 Water 26-MAY-16 13:40 MW09-04	L1774699-8 Water 26-MAY-16 08:20 MP09-05	L1774699-9 Water 26-MAY-16 11:30 MW09-06	L1774699-10 Water 26-MAY-16 10:10 MW09-23	
Grouping	Analyte					
<b>WATER</b>						
<b>Physical Tests</b>	Conductivity (uS/cm)	2610	2570	1990	1960	1590
	Hardness (as CaCO3) (mg/L)	1650	1600	1150	1220	955
	pH (pH)	8.08	8.13	7.51	8.08	8.02
<b>Anions and Nutrients</b>	Alkalinity, Total (as CaCO3) (mg/L)	111	116	252	189	395
	Ammonia, Total (as N) (mg/L)	6.18	7.04	8.39	0.300	2.69
	Chloride (Cl) (mg/L)	<5.0 <sup>DLDS</sup>	<5.0 <sup>DLDS</sup>	<2.5 <sup>DLDS</sup>	<2.5 <sup>DLDS</sup>	<2.5 <sup>DLDS</sup>
	Fluoride (F) (mg/L)	0.30	0.32	<0.10	0.23	0.12
	Nitrate (as N) (mg/L)	0.452	0.050	0.050	0.703	<0.025 <sup>DLDS</sup>
	Nitrite (as N) (mg/L)	0.075	0.027	<0.0050 <sup>DLDS</sup>	0.0496	<0.0050 <sup>DLDS</sup>
	Total Kjeldahl Nitrogen (mg/L)	5.66	7.04	9.48	0.870	3.38
	Sulfate (SO4) (mg/L)	1450	1340	949	996	592
	Anion Sum (meq/L)	32.6	30.2	24.8	24.6	20.2
	Cation Sum (meq/L)	35.9	34.8	28.6	25.7	21.7
	Cation - Anion Balance (%)	4.9	7.2	7.1	2.3	3.6
<b>Cyanides</b>	Cyanide, Weak Acid Diss (mg/L)	0.0054	<0.0050	0.0051	<0.0050	<0.0050
	Cyanide, Total (mg/L)	0.0142	<0.0050	0.0078	<0.0050	0.114
	Thiocyanate (SCN) (mg/L)	<0.50	<0.50	0.70	<0.50	0.54
	Cyanide, Free (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
<b>Organic / Inorganic Carbon</b>	Total Inorganic Carbon (mg/L)	23.4	24.6	72.1	47.2	101
	Total Organic Carbon (mg/L)	6.41	5.95	22.4	6.12	19.7
<b>Total Metals</b>	Aluminum (Al)-Total (mg/L)					
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)					
	Barium (Ba)-Total (mg/L)					
	Beryllium (Be)-Total (mg/L)					
	Bismuth (Bi)-Total (mg/L)					
	Boron (B)-Total (mg/L)					
	Cadmium (Cd)-Total (mg/L)					
	Calcium (Ca)-Total (mg/L)					
	Chromium (Cr)-Total (mg/L)					
	Cobalt (Co)-Total (mg/L)					
	Copper (Cu)-Total (mg/L)					
	Iron (Fe)-Total (mg/L)					
	Lead (Pb)-Total (mg/L)					
	Lithium (Li)-Total (mg/L)					
Magnesium (Mg)-Total (mg/L)						

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## ALS ENVIRONMENTAL ANALYTICAL REPORT

13-JUL-16 14:35 (MT)

Version: FINAL REV. 3

		Sample ID	L1774699-11	L1774699-12	L1774699-13	L1774699-14	L1774699-15
		Description	Water	Water	Water	Water	Water
		Sampled Date	26-MAY-16	26-MAY-16	26-MAY-16	25-MAY-16	26-MAY-16
		Sampled Time	15:10	08:50	09:45	17:20	08:20
		Client ID	CH-P-13-03/50	MP09-04	MW09-08	DUP-1	DUP-2
Grouping	Analyte						
<b>WATER</b>							
<b>Physical Tests</b>	Conductivity (uS/cm)		3300	1240	487	1010	1990
	Hardness (as CaCO3) (mg/L)			755	245	612	1150
	pH (pH)		7.98	8.06	6.77	8.15	7.41
<b>Anions and Nutrients</b>	Alkalinity, Total (as CaCO3) (mg/L)		374	167	171	248	252
	Ammonia, Total (as N) (mg/L)			<0.0050	2.64	0.0164	9.33
	Chloride (Cl) (mg/L)		30.2	<1.0 <sup>DLDS</sup>	<0.50	<1.0 <sup>DLDS</sup>	<2.5 <sup>DLDS</sup>
	Fluoride (F) (mg/L)		<0.20 <sup>DLDS</sup>	<0.040 <sup>DLDS</sup>	0.124	<0.040 <sup>DLDS</sup>	<0.10 <sup>DLDS</sup>
	Nitrate (as N) (mg/L)		0.964	0.797	<0.0050	1.97	0.059
	Nitrite (as N) (mg/L)		0.016	<0.0020 <sup>DLDS</sup>	<0.0010	<0.0020 <sup>DLDS</sup>	<0.0050 <sup>DLDS</sup>
	Total Kjeldahl Nitrogen (mg/L)			0.229	3.02	0.468	9.38
	Sulfate (SO4) (mg/L)		1550	541	91.9	330	940
	Anion Sum (meq/L)			14.7	5.33	12.0	24.6
	Cation Sum (meq/L)			15.5	9.78	12.6	28.7
	Cation - Anion Balance (%)			2.7	29.5	2.6	7.7
	<b>Cyanides</b>	Cyanide, Weak Acid Diss (mg/L)			<0.0050	<0.0050	<0.0050
Cyanide, Total (mg/L)				0.0084	<0.0050	<0.0050	0.0098
Thiocyanate (SCN) (mg/L)				<0.50	0.72	<0.50	0.86
Cyanide, Free (mg/L)				<0.0050	<0.0050	<0.0050	0.0063
<b>Organic / Inorganic Carbon</b>	Total Inorganic Carbon (mg/L)			42.5	59.9	58.1	72.8
	Total Organic Carbon (mg/L)			5.83	18.3	9.54	23.9
<b>Total Metals</b>	Aluminum (Al)-Total (mg/L)						
	Antimony (Sb)-Total (mg/L)						
	Arsenic (As)-Total (mg/L)						
	Barium (Ba)-Total (mg/L)						
	Beryllium (Be)-Total (mg/L)						
	Bismuth (Bi)-Total (mg/L)						
	Boron (B)-Total (mg/L)						
	Cadmium (Cd)-Total (mg/L)						
	Calcium (Ca)-Total (mg/L)						
	Chromium (Cr)-Total (mg/L)						
	Cobalt (Co)-Total (mg/L)						
	Copper (Cu)-Total (mg/L)						
	Iron (Fe)-Total (mg/L)						
	Lead (Pb)-Total (mg/L)						
	Lithium (Li)-Total (mg/L)						
	Magnesium (Mg)-Total (mg/L)						

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# ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1774699-16 Water 24-MAY-16 16:50 FB-1	L1774699-17 Water 25-MAY-16 18:10 FB-2	L1774699-18 Water 26-MAY-16 17:00 FB-3	L1774699-19 Water 26-MAY-16 TRAVEL BLANK-1	L1774699-20 Water 25-MAY-16 17:20 CH-P-13-03/50
Grouping	Analyte					
<b>WATER</b>						
<b>Physical Tests</b>	Conductivity (uS/cm)	<2.0	<2.0	<2.0	<2.0	
	Hardness (as CaCO3) (mg/L)	<0.50	<0.50	<0.50	<0.50	1760
	pH (pH)	5.47	5.28	5.34	5.34	
<b>Anions and Nutrients</b>	Alkalinity, Total (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	
	Ammonia, Total (as N) (mg/L)	<0.0050	<0.0050	<0.0050	0.0354 <sup>RRV</sup>	
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<0.50	
	Fluoride (F) (mg/L)	<0.020	<0.020	<0.020	<0.020	
	Nitrate (as N) (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	
	Total Kjeldahl Nitrogen (mg/L)	<0.050	<0.050	<0.050	0.064	
	Sulfate (SO4) (mg/L)	<0.30	<0.30	<0.30	<0.30	
	Anion Sum (meq/L)	<0.10	<0.10	<0.10	<0.10	
	Cation Sum (meq/L)	<0.10	<0.10	<0.10	<0.10	
	Cation - Anion Balance (%)	0.0	0.0	0.0	0.0	
<b>Cyanides</b>	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	
	Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	
	Thiocyanate (SCN) (mg/L)	<0.50	<0.50	<0.50	<0.50	
	Cyanide, Free (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	
<b>Organic / Inorganic Carbon</b>	Total Inorganic Carbon (mg/L)	<0.50	<0.50	<0.50	<0.50	
	Total Organic Carbon (mg/L)	<0.50	<0.50	<0.50	<0.50	
<b>Total Metals</b>	Aluminum (Al)-Total (mg/L)				<0.0030	
	Antimony (Sb)-Total (mg/L)				<0.00010	
	Arsenic (As)-Total (mg/L)				<0.00010	
	Barium (Ba)-Total (mg/L)				<0.000050	
	Beryllium (Be)-Total (mg/L)				<0.000020	
	Bismuth (Bi)-Total (mg/L)				<0.000050	
	Boron (B)-Total (mg/L)				<0.010	
	Cadmium (Cd)-Total (mg/L)				<0.000050	
	Calcium (Ca)-Total (mg/L)				<0.050	
	Chromium (Cr)-Total (mg/L)				<0.00010	
	Cobalt (Co)-Total (mg/L)				<0.00010	
	Copper (Cu)-Total (mg/L)				<0.00050	
	Iron (Fe)-Total (mg/L)				<0.010	
	Lead (Pb)-Total (mg/L)				<0.000050	
	Lithium (Li)-Total (mg/L)				<0.0010	
	Magnesium (Mg)-Total (mg/L)				<0.10	

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# ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1774699-1 Water 24-MAY-16 16:50 MW09-16	L1774699-2 Water 25-MAY-16 08:45 MW09-18	L1774699-3 Water 25-MAY-16 17:20 MW09-24	L1774699-4 Water 25-MAY-16 10:25 GSI-HA-01A	L1774699-5 Water 26-MAY-16 11:40 MW09-02
Grouping	Analyte					
<b>WATER</b>						
<b>Total Metals</b>	Manganese (Mn)-Total (mg/L)					
	Mercury (Hg)-Total (mg/L)					
	Molybdenum (Mo)-Total (mg/L)					
	Nickel (Ni)-Total (mg/L)					
	Phosphorus (P)-Total (mg/L)					
	Potassium (K)-Total (mg/L)					
	Selenium (Se)-Total (mg/L)					
	Silicon (Si)-Total (mg/L)					
	Silver (Ag)-Total (mg/L)					
	Sodium (Na)-Total (mg/L)					
	Strontium (Sr)-Total (mg/L)					
	Sulfur (S)-Total (mg/L)					
	Thallium (Tl)-Total (mg/L)					
	Tin (Sn)-Total (mg/L)					
	Titanium (Ti)-Total (mg/L)					
	Uranium (U)-Total (mg/L)					
	Vanadium (V)-Total (mg/L)					
	Zinc (Zn)-Total (mg/L)					
	Zirconium (Zr)-Total (mg/L)					
<b>Dissolved Metals</b>	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	<0.0020 <sup>DLA</sup>	<0.0020 <sup>DLA</sup>	0.0271	0.0030	<0.0050 <sup>DLA</sup>
	Antimony (Sb)-Dissolved (mg/L)	0.0891	0.00035	0.00019	0.00015	0.00401
	Arsenic (As)-Dissolved (mg/L)	0.0244	0.0490	0.00135	0.00534	8.95
	Barium (Ba)-Dissolved (mg/L)	0.0149	0.00851	0.0928	0.126	0.00462
	Beryllium (Be)-Dissolved (mg/L)	<0.000040 <sup>DLA</sup>	<0.000040 <sup>DLA</sup>	<0.000020	<0.000020	<0.00010 <sup>DLA</sup>
	Bismuth (Bi)-Dissolved (mg/L)	<0.00010 <sup>DLA</sup>	<0.00010 <sup>DLA</sup>	<0.000050	<0.000050	<0.00025 <sup>DLA</sup>
	Boron (B)-Dissolved (mg/L)	0.051	<0.020 <sup>DLA</sup>	0.014	<0.010	0.058
	Cadmium (Cd)-Dissolved (mg/L)	0.0503	0.000048	0.0000653	0.0000066	0.000917
	Calcium (Ca)-Dissolved (mg/L)	320	332 <sup>DLA</sup>	194	136	477 <sup>DLA</sup>
	Chromium (Cr)-Dissolved (mg/L)	<0.00020 <sup>DLA</sup>	<0.00020 <sup>DLA</sup>	0.00033	0.00438	<0.00050 <sup>DLA</sup>
	Cobalt (Co)-Dissolved (mg/L)	0.00402	<0.00020 <sup>DLA</sup>	0.00012	0.00022	0.00995 <sup>DLA</sup>
	Copper (Cu)-Dissolved (mg/L)	0.00575	<0.00040 <sup>DLA</sup>	0.00579	0.00044	<0.0010 <sup>DLA</sup>
	Iron (Fe)-Dissolved (mg/L)	0.023	0.014 <sup>DLA</sup>	<0.010	5.07	15.4 <sup>DLA</sup>
	Lead (Pb)-Dissolved (mg/L)	0.00502	<0.00010 <sup>DLA</sup>	<0.000050	0.000095	<0.00025 <sup>DLA</sup>
	Lithium (Li)-Dissolved (mg/L)	0.0099	0.0228	0.0011	0.0061	0.0120
	Magnesium (Mg)-Dissolved (mg/L)	143	254	42.9	45.9	79.0

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# ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1774699-6	L1774699-7	L1774699-8	L1774699-9	L1774699-10
		Water 26-MAY-16 12:40 MW09-03	Water 26-MAY-16 13:40 MW09-04	Water 26-MAY-16 08:20 MP09-05	Water 26-MAY-16 11:30 MW09-06	Water 26-MAY-16 10:10 MW09-23
Grouping	Analyte					
<b>WATER</b>						
<b>Total Metals</b>	Manganese (Mn)-Total (mg/L)					
	Mercury (Hg)-Total (mg/L)					
	Molybdenum (Mo)-Total (mg/L)					
	Nickel (Ni)-Total (mg/L)					
	Phosphorus (P)-Total (mg/L)					
	Potassium (K)-Total (mg/L)					
	Selenium (Se)-Total (mg/L)					
	Silicon (Si)-Total (mg/L)					
	Silver (Ag)-Total (mg/L)					
	Sodium (Na)-Total (mg/L)					
	Strontium (Sr)-Total (mg/L)					
	Sulfur (S)-Total (mg/L)					
	Thallium (Tl)-Total (mg/L)					
	Tin (Sn)-Total (mg/L)					
	Titanium (Ti)-Total (mg/L)					
	Uranium (U)-Total (mg/L)					
	Vanadium (V)-Total (mg/L)					
	Zinc (Zn)-Total (mg/L)					
	Zirconium (Zr)-Total (mg/L)					
<b>Dissolved Metals</b>	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	<0.0050 <sup>DLA</sup>	0.0027	0.0243	<0.0020 <sup>DLA</sup>	0.0230 <sup>DLA</sup>
	Antimony (Sb)-Dissolved (mg/L)	0.401	0.339	0.00031	0.201	<0.00050 <sup>DLA</sup>
	Arsenic (As)-Dissolved (mg/L)	2.08	3.55	0.0230	0.108	0.0283
	Barium (Ba)-Dissolved (mg/L)	0.0176	0.00857	0.0410	0.00531	0.0490
	Beryllium (Be)-Dissolved (mg/L)	<0.00010 <sup>DLA</sup>	<0.000040 <sup>DLA</sup>	<0.000040 <sup>DLA</sup>	<0.000040 <sup>DLA</sup>	<0.00010 <sup>DLA</sup>
	Bismuth (Bi)-Dissolved (mg/L)	<0.00025 <sup>DLA</sup>	<0.00010 <sup>DLA</sup>	<0.00010 <sup>DLA</sup>	<0.00010 <sup>DLA</sup>	<0.00025 <sup>DLA</sup>
	Boron (B)-Dissolved (mg/L)	0.172	0.204	0.052	0.100	0.062 <sup>DLA</sup>
	Cadmium (Cd)-Dissolved (mg/L)	0.00181	0.000023	0.000149	0.00720	<0.000025 <sup>DLA</sup>
	Calcium (Ca)-Dissolved (mg/L)	493	482 <sup>DLA</sup>	330	389 <sup>DLA</sup>	252 <sup>DLA</sup>
	Chromium (Cr)-Dissolved (mg/L)	<0.00050 <sup>DLA</sup>	<0.00020 <sup>DLA</sup>	0.00048	<0.00020 <sup>DLA</sup>	<0.00050 <sup>DLA</sup>
	Cobalt (Co)-Dissolved (mg/L)	0.00156	0.00086 <sup>DLA</sup>	0.0153	0.00191	0.0130 <sup>DLA</sup>
	Copper (Cu)-Dissolved (mg/L)	0.0047	<0.00040 <sup>DLA</sup>	0.00099	0.0104	<0.0010 <sup>DLA</sup>
	Iron (Fe)-Dissolved (mg/L)	0.036	<0.010	50.9	<0.010	18.0 <sup>DLA</sup>
	Lead (Pb)-Dissolved (mg/L)	0.00061 <sup>DLA</sup>	0.00045	<0.00010 <sup>DLA</sup>	0.00036	<0.00025 <sup>DLA</sup>
	Lithium (Li)-Dissolved (mg/L)	<0.0050 <sup>DLA</sup>	0.0120	<0.0020 <sup>DLA</sup>	0.0123	<0.0050 <sup>DLA</sup>
	Magnesium (Mg)-Dissolved (mg/L)	101	95.6	78.1	59.0	79.2

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1774699-11 Water 26-MAY-16 15:10 CH-P-13-03/50	L1774699-12 Water 26-MAY-16 08:50 MP09-04	L1774699-13 Water 26-MAY-16 09:45 MW09-08	L1774699-14 Water 25-MAY-16 17:20 DUP-1	L1774699-15 Water 26-MAY-16 08:20 DUP-2
Grouping	Analyte					
<b>WATER</b>						
<b>Total Metals</b>	Manganese (Mn)-Total (mg/L)					
	Mercury (Hg)-Total (mg/L)					
	Molybdenum (Mo)-Total (mg/L)					
	Nickel (Ni)-Total (mg/L)					
	Phosphorus (P)-Total (mg/L)					
	Potassium (K)-Total (mg/L)					
	Selenium (Se)-Total (mg/L)					
	Silicon (Si)-Total (mg/L)					
	Silver (Ag)-Total (mg/L)					
	Sodium (Na)-Total (mg/L)					
	Strontium (Sr)-Total (mg/L)					
	Sulfur (S)-Total (mg/L)					
	Thallium (Tl)-Total (mg/L)					
	Tin (Sn)-Total (mg/L)					
	Titanium (Ti)-Total (mg/L)					
	Uranium (U)-Total (mg/L)					
	Vanadium (V)-Total (mg/L)					
	Zinc (Zn)-Total (mg/L)					
	Zirconium (Zr)-Total (mg/L)					
<b>Dissolved Metals</b>	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)		0.0024	0.0607	0.0021	0.0238
	Antimony (Sb)-Dissolved (mg/L)		0.00138	0.00024	0.00018	0.00029
	Arsenic (As)-Dissolved (mg/L)		0.00061	0.208	0.00136	0.0226
	Barium (Ba)-Dissolved (mg/L)		0.0735	0.238	0.0902	0.0408
	Beryllium (Be)-Dissolved (mg/L)		<0.000020	0.000021	<0.000020	<0.000040 <sup>DLA</sup>
	Bismuth (Bi)-Dissolved (mg/L)		<0.000050	<0.000050	<0.000050	<0.00010 <sup>DLA</sup>
	Boron (B)-Dissolved (mg/L)		0.012	<0.010	<0.010	0.046
	Cadmium (Cd)-Dissolved (mg/L)		0.0000462	0.0000053	0.0000545	0.000136
	Calcium (Ca)-Dissolved (mg/L)		180	73.7	176	333
	Chromium (Cr)-Dissolved (mg/L)		0.00024	0.00070	0.00017	0.00030
	Cobalt (Co)-Dissolved (mg/L)		0.00043	0.00161	0.00011	0.0151
	Copper (Cu)-Dissolved (mg/L)		0.00250	<0.00020	0.00542	0.00091
	Iron (Fe)-Dissolved (mg/L)		<0.010	80.0	<0.010	52.5
	Lead (Pb)-Dissolved (mg/L)		<0.000050	0.000086	<0.000050	<0.00010 <sup>DLA</sup>
	Lithium (Li)-Dissolved (mg/L)		<0.0010	<0.0010	0.0012	<0.0020 <sup>DLA</sup>
	Magnesium (Mg)-Dissolved (mg/L)		74.1	14.7	42.1	76.6

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.



## ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1774699-16	L1774699-17	L1774699-18	L1774699-19	L1774699-20
		Description	Water	Water	Water	Water	Water
		Sampled Date	24-MAY-16	25-MAY-16	26-MAY-16	26-MAY-16	25-MAY-16
		Sampled Time	16:50	18:10	17:00		17:20
		Client ID	FB-1	FB-2	FB-3	TRAVEL BLANK-1	CH-P-13-03/50
Grouping	Analyte						
<b>WATER</b>							
<b>Total Metals</b>	Manganese (Mn)-Total (mg/L)					<0.00010	
	Mercury (Hg)-Total (mg/L)					<0.0000050	
	Molybdenum (Mo)-Total (mg/L)					<0.000050	
	Nickel (Ni)-Total (mg/L)					<0.00050	
	Phosphorus (P)-Total (mg/L)					<0.050	
	Potassium (K)-Total (mg/L)					<0.10	
	Selenium (Se)-Total (mg/L)					<0.000050	
	Silicon (Si)-Total (mg/L)					<0.050	
	Silver (Ag)-Total (mg/L)					<0.000010	
	Sodium (Na)-Total (mg/L)					<0.050	
	Strontium (Sr)-Total (mg/L)					<0.00020	
	Sulfur (S)-Total (mg/L)					<0.50	
	Thallium (Tl)-Total (mg/L)					<0.000010	
	Tin (Sn)-Total (mg/L)					<0.00010	
	Titanium (Ti)-Total (mg/L)					<0.00030	
	Uranium (U)-Total (mg/L)					<0.000010	
	Vanadium (V)-Total (mg/L)					<0.00050	
	Zinc (Zn)-Total (mg/L)					<0.0030	
	Zirconium (Zr)-Total (mg/L)					<0.00030	
<b>Dissolved Metals</b>	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD		
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD		FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0038 <sup>RRV</sup>	<0.0010	<0.0010	<0.0010		0.0051
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010		0.00032
	Arsenic (As)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010		0.00079
	Barium (Ba)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050		0.0443
	Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.000020	<0.000020	<0.000020		<0.000040 <sup>DLA</sup>
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050		<0.00010 <sup>DLA</sup>
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010		0.026
	Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050		0.000256
	Calcium (Ca)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050		438
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010		<0.00020 <sup>DLA</sup>
	Cobalt (Co)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010		0.00067
	Copper (Cu)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020		0.00197
	Iron (Fe)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010		0.011
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050		<0.00010 <sup>DLA</sup>
	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010		0.0029
	Magnesium (Mg)-Dissolved (mg/L)	<0.10	<0.10	<0.10	<0.10		163

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1774699-1	L1774699-2	L1774699-3	L1774699-4	L1774699-5
Description	Water	Water	Water	Water	Water	Water
Sampled Date	24-MAY-16	25-MAY-16	25-MAY-16	25-MAY-16	25-MAY-16	26-MAY-16
Sampled Time	16:50	08:45	08:45	17:20	10:25	11:40
Client ID	MW09-16	MW09-18	MW09-18	MW09-24	GSI-HA-01A	MW09-02
Grouping	Analyte					
<b>WATER</b>						
<b>Dissolved Metals</b>	Manganese (Mn)-Dissolved (mg/L)	0.943	0.352	0.0275	0.118	19.8
	Mercury (Hg)-Dissolved (mg/L)	0.0000053	<0.0000050 <sup>DLA</sup>	<0.0000050	<0.0000050	<0.0000050
	Molybdenum (Mo)-Dissolved (mg/L)	0.00024	<0.00010 <sup>DLA</sup>	0.000270	0.000456	0.00684 <sup>DLA</sup>
	Nickel (Ni)-Dissolved (mg/L)	0.0061	<0.0010 <sup>DLA</sup>	<0.00050	0.00360	<0.0025 <sup>DLA</sup>
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	6.59	7.81	1.90	3.53	32.4
	Selenium (Se)-Dissolved (mg/L)	<0.00010 <sup>DLA</sup>	0.00084	0.000840	<0.000050	<0.00025 <sup>DLA</sup>
	Silicon (Si)-Dissolved (mg/L)	4.34	4.65 <sup>DLA</sup>	7.38	6.24	7.24 <sup>DLA</sup>
	Silver (Ag)-Dissolved (mg/L)	0.000064	<0.000020 <sup>DLA</sup>	<0.000010	<0.000010	<0.000050 <sup>DLA</sup>
	Sodium (Na)-Dissolved (mg/L)	7.08	11.4	7.63	4.53	27.3
	Strontium (Sr)-Dissolved (mg/L)	0.706	1.03	0.623	0.315	0.848
	Sulfur (S)-Dissolved (mg/L)	389	466	122	88.7	517
	Thallium (Tl)-Dissolved (mg/L)	0.000423	0.000290	<0.000010	<0.000010	0.000199
	Tin (Sn)-Dissolved (mg/L)	<0.00020 <sup>DLA</sup>	<0.00020 <sup>DLA</sup>	<0.00010	<0.00010	<0.00050 <sup>DLA</sup>
	Titanium (Ti)-Dissolved (mg/L)	<0.00060 <sup>DLA</sup>	<0.00060 <sup>DLA</sup>	<0.00030	0.00034	<0.0015 <sup>DLA</sup>
	Uranium (U)-Dissolved (mg/L)	0.00261	0.00702	0.00259	0.000043	0.00109
	Vanadium (V)-Dissolved (mg/L)	<0.0010 <sup>DLA</sup>	<0.0010 <sup>DLA</sup>	<0.00050	<0.00050	<0.0025 <sup>DLA</sup>
	Zinc (Zn)-Dissolved (mg/L)	6.94	0.0023	0.0055	0.0033	0.213
	Zirconium (Zr)-Dissolved (mg/L)	<0.00060 <sup>DLA</sup>	<0.00060 <sup>DLA</sup>	<0.00030	<0.00030	<0.0015 <sup>DLA</sup>

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.

# ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1774699-6	L1774699-7	L1774699-8	L1774699-9	L1774699-10
Description	Water	Water	Water	Water	Water	Water
Sampled Date	26-MAY-16	26-MAY-16	26-MAY-16	26-MAY-16	26-MAY-16	26-MAY-16
Sampled Time	12:40	13:40	08:20	11:30	10:10	10:10
Client ID	MW09-03	MW09-04	MP09-05	MW09-06	MW09-23	MW09-23
Grouping	Analyte					
<b>WATER</b>						
<b>Dissolved Metals</b>	Manganese (Mn)-Dissolved (mg/L)	19.5	7.76	10.1	3.04	22.4
	Mercury (Hg)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	0.0000167	<0.000050
	Molybdenum (Mo)-Dissolved (mg/L)	0.00554	0.00384	0.00067	0.00163	0.00221
	Nickel (Ni)-Dissolved (mg/L)	<0.0025 <sup>DLA</sup>	<0.0010 <sup>DLA</sup>	0.0052	0.0033	<0.0025 <sup>DLA</sup>
	Phosphorus (P)-Dissolved (mg/L)	0.060	0.082	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	29.6	42.2	8.70	19.3	6.83
	Selenium (Se)-Dissolved (mg/L)	<0.00025 <sup>DLA</sup>	<0.00010 <sup>DLA</sup>	0.00017	0.00022	<0.00025 <sup>DLA</sup>
	Silicon (Si)-Dissolved (mg/L)	12.8	15.6	5.49	8.35	6.56
	Silver (Ag)-Dissolved (mg/L)	<0.000050 <sup>DLA</sup>	0.000054	<0.000020 <sup>DLA</sup>	0.000120	<0.000050 <sup>DLA</sup>
	Sodium (Na)-Dissolved (mg/L)	24.8	24.3	41.2	18.6	11.5
	Strontium (Sr)-Dissolved (mg/L)	1.35	1.23	1.01	0.880	0.621
	Sulfur (S)-Dissolved (mg/L)	531	512	328	348	202
	Thallium (Tl)-Dissolved (mg/L)	0.000085	0.000116	<0.000020 <sup>DLA</sup>	0.000240	<0.000050 <sup>DLA</sup>
	Tin (Sn)-Dissolved (mg/L)	<0.00050 <sup>DLA</sup>	<0.00020 <sup>DLA</sup>	<0.00020 <sup>DLA</sup>	<0.00020 <sup>DLA</sup>	<0.00050 <sup>DLA</sup>
	Titanium (Ti)-Dissolved (mg/L)	<0.0015 <sup>DLA</sup>	<0.00060 <sup>DLA</sup>	0.00094	<0.00060 <sup>DLA</sup>	<0.0015 <sup>DLA</sup>
	Uranium (U)-Dissolved (mg/L)	0.00127	0.000303	0.00167	0.00176	0.00285
	Vanadium (V)-Dissolved (mg/L)	<0.0025 <sup>DLA</sup>	<0.0010 <sup>DLA</sup>	0.0017	<0.0010 <sup>DLA</sup>	<0.0025 <sup>DLA</sup>
	Zinc (Zn)-Dissolved (mg/L)	0.0062	0.630	0.0156	0.383	0.0289
	Zirconium (Zr)-Dissolved (mg/L)	<0.0015 <sup>DLA</sup>	<0.00060 <sup>DLA</sup>	0.00079	<0.00060 <sup>DLA</sup>	<0.0015 <sup>DLA</sup>

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.

## ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1774699-11	L1774699-12	L1774699-13	L1774699-14	L1774699-15
Description	Water	Water	Water	Water	Water
Sampled Date	26-MAY-16	26-MAY-16	26-MAY-16	25-MAY-16	26-MAY-16
Sampled Time	15:10	08:50	09:45	17:20	08:20
Client ID	CH-P-13-03/50	MP09-04	MW09-08	DUP-1	DUP-2
Grouping	Analyte				
<b>WATER</b>					
<b>Dissolved Metals</b>	Manganese (Mn)-Dissolved (mg/L)	0.00046	6.89	0.0224	9.84
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Molybdenum (Mo)-Dissolved (mg/L)	0.000212	0.000107	0.000238	0.00064
	Nickel (Ni)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	0.0053
	Phosphorus (P)-Dissolved (mg/L)	<0.050	0.110	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	1.89	1.92	1.96	8.59
	Selenium (Se)-Dissolved (mg/L)	0.000181	0.000096	0.000692	0.00018
	Silicon (Si)-Dissolved (mg/L)	5.68	10.7	7.19	5.46 <sup>DLA</sup>
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000020 <sup>DLA</sup>
	Sodium (Na)-Dissolved (mg/L)	8.02	2.36	7.36	40.4
	Strontium (Sr)-Dissolved (mg/L)	0.594	0.319	0.614	0.991
	Sulfur (S)-Dissolved (mg/L)	187	32.0	121	323
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000020 <sup>DLA</sup>
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00020 <sup>DLA</sup>
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	0.00275	<0.00030	0.00116
	Uranium (U)-Dissolved (mg/L)	0.00214	0.000067	0.00256	0.00164
	Vanadium (V)-Dissolved (mg/L)	<0.00050	0.00238	<0.00050	0.0016
	Zinc (Zn)-Dissolved (mg/L)	0.0024	0.0038	0.0012	0.0153
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	0.00064	<0.00030	0.00077

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.

## ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	Description	Sampled Date	Sampled Time	Client ID	L1774699-16	L1774699-17	L1774699-18	L1774699-19	L1774699-20
					Water	Water	Water	Water	Water
		24-MAY-16	16:50	FB-1	24-MAY-16	25-MAY-16	26-MAY-16	26-MAY-16	25-MAY-16
					FB-1	FB-2	FB-3	TRAVEL BLANK-1	CH-P-13-03/50
Grouping	Analyte								
<b>WATER</b>									
<b>Dissolved Metals</b>	Manganese (Mn)-Dissolved (mg/L)				0.00023 <sup>RRV</sup>	<0.00010	<0.00010		0.318
	Mercury (Hg)-Dissolved (mg/L)				<0.0000050	<0.0000050	<0.0000050		
	Molybdenum (Mo)-Dissolved (mg/L)				<0.000050	<0.000050	<0.000050		0.00069
	Nickel (Ni)-Dissolved (mg/L)				<0.00050	<0.00050	<0.00050		0.0199
	Phosphorus (P)-Dissolved (mg/L)				<0.050	<0.050	<0.050		<0.050
	Potassium (K)-Dissolved (mg/L)				<0.10	<0.10	<0.10		11.8
	Selenium (Se)-Dissolved (mg/L)				<0.000050	<0.000050	<0.000050		0.00717
	Silicon (Si)-Dissolved (mg/L)				<0.050	<0.050	<0.050		6.10 <sup>DLA</sup>
	Silver (Ag)-Dissolved (mg/L)				<0.000010	<0.000010	<0.000010		<0.000020 <sup>DLA</sup>
	Sodium (Na)-Dissolved (mg/L)				<0.050	<0.050	<0.050		203
	Strontium (Sr)-Dissolved (mg/L)				0.00023 <sup>RRV</sup>	<0.00020	<0.00020		1.24
	Sulfur (S)-Dissolved (mg/L)				<0.50	<0.50	<0.50		554
	Thallium (Tl)-Dissolved (mg/L)				<0.000010	<0.000010	<0.000010		0.000087
	Tin (Sn)-Dissolved (mg/L)				<0.00010	<0.00010	<0.00010		0.00281
	Titanium (Ti)-Dissolved (mg/L)				<0.00030	<0.00030	<0.00030		<0.00060 <sup>DLA</sup>
	Uranium (U)-Dissolved (mg/L)				<0.000010	<0.000010	<0.000010		0.0124 <sup>DLA</sup>
	Vanadium (V)-Dissolved (mg/L)				<0.00050	<0.00050	<0.00050		<0.0010 <sup>DLA</sup>
	Zinc (Zn)-Dissolved (mg/L)				<0.0010	<0.0010	<0.0010		0.0159 <sup>DLA</sup>
	Zirconium (Zr)-Dissolved (mg/L)				<0.00030	<0.00030	<0.00030		<0.00060 <sup>DLA</sup>

\* Please refer to the Reference Information section for an explanation of any qualifiers detected.

## Reference Information

## QC Samples with Qualifiers &amp; Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Alkalinity, Total (as CaCO3)	B	L1774699-10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -3, -4, -5, -6, -7, -8, -9
Duplicate	Beryllium (Be)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Aluminum (Al)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Antimony (Sb)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Chromium (Cr)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Lead (Pb)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Selenium (Se)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Silver (Ag)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Thallium (Tl)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Tin (Sn)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Titanium (Ti)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Vanadium (V)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Zirconium (Zr)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Beryllium (Be)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Aluminum (Al)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Boron (B)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Chromium (Cr)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Cobalt (Co)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Copper (Cu)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Lead (Pb)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Molybdenum (Mo)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Nickel (Ni)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Silver (Ag)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Tin (Sn)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Titanium (Ti)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Vanadium (V)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Zirconium (Zr)-Dissolved	DLA	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Thiocyanate (SCN)	DLM	L1774699-19
Duplicate	Cadmium (Cd)-Dissolved	DLM	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Duplicate	Cyanide, Weak Acid Diss	HTP	L1774699-1, -14, -16, -17, -2, -3, -4
Matrix Spike	Sulfate (SO4)	MS-B	L1774699-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -3, -4, -5, -6, -7, -8, -9

## Reference Information

	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Iron (Fe)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Barium (Ba)-Total	MS-B	L1774699-19
Matrix Spike	Selenium (Se)-Total	MS-B	L1774699-19
Matrix Spike	Strontium (Sr)-Total	MS-B	L1774699-19
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Total Inorganic Carbon	MS-B	L1774699-10, -12, -13, -14, -15, -8, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Total Organic Carbon	MS-B	L1774699-12, -14, -16, -17, -18, -19, -4, -5, -6, -7, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Antimony (Sb)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Total Inorganic Carbon	MS-B	L1774699-16, -17, -18, -19
Matrix Spike	Arsenic (As)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Molybdenum (Mo)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20, -3, -4, -5, -6, -7, -8, -9
	Strontium (Sr)-Dissolved		L1774699-1, -10, -12, -13, -14, -15, -16, -17, -18, -2, -20,

## Reference Information

Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	MS-B	-3, -4, -5, -6, -7, -8, -9

**Qualifiers for Individual Parameters Listed:**

Qualifier	Description
B	Method Blank exceeds ALS DQO. All associated sample results are at least 5 times greater than blank levels and are considered reliable.
DLA	Detection Limit adjusted for required dilution
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
HTP	Sample preparation or preservation hold time was exceeded.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis

**Test Method References:**

ALS Test Code	Matrix	Test Description	Method Reference**
<b>ALK-TITR-VA</b>	Water	Alkalinity Species by Titration	APHA 2320 Alkalinity
This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.			
<b>BE-D-L-CCMS-VA</b>	Water	Diss. Be (low) in Water by CRC ICPMS	APHA 3030B/6020A (mod)
Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
<b>BE-T-L-CCMS-VA</b>	Water	Total Be (Low) in Water by CRC ICPMS	EPA 200.2/6020A (mod)
Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
<b>CARBONS-TIC-VA</b>	Water	Total inorganic carbon by CO2 purge	APHA 5310B TOTAL ORGANIC CARBON (TOC)
This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)".			
<b>CARBONS-TOC-VA</b>	Water	Total organic carbon by combustion	APHA 5310B TOTAL ORGANIC CARBON (TOC)
This analysis is carried out using procedures adapted from APHA Method 5310 "Total Organic Carbon (TOC)".			
<b>CL-IC-N-WR</b>	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
<b>CN-FREE-CFA-VA</b>	Water	Free Cyanide in water by CFA	ASTM 7237
This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis.			
<b>CN-SCN-VA</b>	Water	Thiocyanate by Colour	APHA 4500-CN CYANIDE
This analysis is carried out using procedures adapted from APHA Method 4500-CN- M "Thiocyanate" Thiocyanate is determined by the ferric nitrate colourimetric method.			
<b>CN-T-CFA-VA</b>	Water	Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
<b>CN-WAD-CFA-VA</b>	Water	Weak Acid Diss. Cyanide in water by CFA	APHA 4500-CN CYANIDE
This analysis is carried out using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.			
<b>EC-PCT-VA</b>	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
<b>F-IC-N-WR</b>	Water	Fluoride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			



## Reference Information

<b>HARDNESS-CALC-VA</b>	Water	Hardness	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
<b>HG-D-CVAA-VA</b>	Water	Diss. Mercury in Water by CVAAS or CVAFS	APHA 3030B/EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.			
<b>HG-T-CVAA-VA</b>	Water	Total Mercury in Water by CVAAS or CVAFS	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.			
<b>IONBALANCE-VA</b>	Water	Ion Balance Calculation	APHA 1030E
Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.			
Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:			
Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]			
<b>MET-D-CCMS-VA</b>	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)
Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
<b>MET-DIS-LOW-ICP-VA</b>	Water	Dissolved Metals in Water by ICPOES	EPA 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
<b>MET-T-CCMS-VA</b>	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)
Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
<b>MET-TOT-LOW-ICP-VA</b>	Water	Total Metals in Water by ICPOES	EPA 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
<b>NH3-F-VA</b>	Water	Ammonia in Water by Fluorescence	APHA 4500 NH3-NITROGEN (AMMONIA)
This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.			
<b>NH3-F-VA</b>	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.			
<b>NO2-L-IC-N-WR</b>	Water	Nitrite in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
<b>NO3-L-IC-N-WR</b>	Water	Nitrate in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
<b>PH-PCT-VA</b>	Water	pH by Meter (Automated)	APHA 4500-H "pH Value"
This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode			
It is recommended that this analysis be conducted in the field.			
<b>PH-PCT-VA</b>	Water	pH by Meter (Automated)	APHA 4500-H pH Value
This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH			

## Reference Information

electrode

It is recommended that this analysis be conducted in the field.

**S-DIS-ICP-VA**                      Water              Dissolved Sulfur in Water by ICPOES                      EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

**S-TOT-ICP-VA**                      Water              Total Sulfur in Water by ICPOES                      EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

**SO4-IC-N-WR**                      Water              Sulfate in Water by IC                      EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

**TKN-F-VA**                      Water              TKN in Water by Fluorescence                      APHA 4500-NORG D.

This analysis is carried out using procedures adapted from APHA Method 4500-Norg D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection.

\*\* ALS test methods may incorporate modifications from specified reference methods to improve performance.

*The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:*

Laboratory Definition Code	Laboratory Location
WR	ALS ENVIRONMENTAL - WHITEHORSE, YUKON, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

**Chain of Custody Numbers:**

1    2

**GLOSSARY OF REPORT TERMS**

*Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.*

- mg/kg - milligrams per kilogram based on dry weight of sample.*
- mg/kg wwt - milligrams per kilogram based on wet weight of sample.*
- mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.*
- mg/L - milligrams per litre.*
- < - Less than.*

*D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).*  
*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*  
**UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.**  
*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*



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<b>Report To</b>		<b>Report For</b> .....			w (Rush Turnaround Time (TAT) is not available for all tests)													
Company: Hemmera Environchem Inc.		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL)			R <input checked="" type="checkbox"/> Regular (Standard TAT if received by 3 pm - business days)													
Contact: Natasha Sandys		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			P <input type="checkbox"/> Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT													
Address: 230 - 2237 2nd Avenue Whitehorse, YT		Criteria on Report - provide details below if box checked			E <input type="checkbox"/> Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT													
Phone: 867-456-4865		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			E2 <input type="checkbox"/> Same day or weekend emergency - contact ALS to confirm TAT and surcharge													
		Email 1 or Fax nsandys@hemmera.com			Specify Date Required for E2, E or P:													
		Email 2 chris@elr.ca			<b>Analysis Request</b>													
<b>Invoice To</b> Same as Report To <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>Invoice Distribution</b>			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below													
Copy of Invoice with Report <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX																
Company: Hemmera Environchem Inc.		Email 1 or Fax nsandys@hemmera.com																
Contact: Natasha Sandys		Email 2 chris@elr.ca																
<b>Project Information</b>		Oil and Gas Required Fields (client use)																
ALS Quote #: Q56042		Approver ID: [REDACTED] Cost Center: [REDACTED]																
Job #: 1343-005.27		GL Account: [REDACTED] Routing Code: [REDACTED]																
PO / AFE:		Activity Code: [REDACTED]																
LSD:		Location: [REDACTED]																
ALS Lab Work Order # (lab use only)		ALS Contact:			Sampler:			JC,MM,NB,KB										
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)			Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Dissolved Metals, Hardness	Dissolved Mercury	Nitrate, Nitrite, Total Kjeldahl N (TKN)	Cl, F, Sulfate, conductivity, pH, alkalinity	Anion Sum, Cation Sum, Calcium/Anion Balance	Cyanide - Weak Acid Diss., Total, Free	Ammonia N (total), Total Organic Carbon	Thiocyanate (SCN)	Total Inorganic Carbon	Number of Containers		
MW09-16				24-May-16	18:50	Water	R	R	R	R	R	R	R	R	R		7	
MW09-18				25-May-16	8:45	Water	R	R	R	R	R	R	R	R	R		7	
MW09-24				25-May-16	17:20	Water	R	R	R	R	R	R	R	R	R		7	
GSI-HA-01A				25-May-16	10:25	Water	R	R	R	R	R	R	R	R	R		7	
MW09-02				26-May-16	11:40	Water	R	R	R	R	R	R	R	R	R		7	
MW09-03				26-May-16	12:40	Water	R	R	R	R	R	R	R	R	R		7	
MW09-04				28-May-16	13:40	Water	R	R	R	R	R	R	R	R	R		7	
MP09-05				28-May-16	8:20	Water	R	R	R	R	R	R	R	R	R		7	
MW09-06				26-May-16	11:30	Water	R	R	R	R	R	R	R	R	R		7	
MW09-23				26-May-16	10:10	Water	R	R	R	R	R	R	R	R	R	7		
CH-P-13-03/50				26-May-16	15:10	Water		R	R	R	R					2		
MP09-04				26-May-16	8:50	Water	R	R	R	R	R	R	R	R	R	7		
<b>Drinking Water (DW) Samples<sup>1</sup> (client use)</b>		<b>Special Instructions / Specify Criteria to add on report (client Use)</b>			<b>SAMPLE CONDITION AS RECEIVED (lab use only)</b>													
Are samples taken from a Regulated DW System? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		- Please send ELR EQWin EDD file with regular results report.			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>													
Are samples for human drinking water use? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					Ice packs Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>													
<b>SHIPMENT RELEASE (client use)</b>		<b>INITIAL SHIPMENT RECEPTION (lab use only)</b>			<b>FINAL SHIPMENT RECEPTION (lab use only)</b>													
Released by: <i>GMK</i>		Date: 27 May 16	Time: 11:45	Received by: <i>[Signature]</i>	Date: 27 May 16	Time: 11:45	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:



L1774699-COFC

Report To			Report Format / D.				(Rush Turnaround Time (TAT) is not available for all tests)																																									
Company: Hemmera Environchem Inc.			Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL)				R <input checked="" type="checkbox"/> Regular (Standard TAT if received by 3 pm - business days)																																									
Contact: Natasha Sandys			Quality Control (QC) Report with Report <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				P <input type="checkbox"/> Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT																																									
Address: 230 - 2237 2nd Avenue Whitehorse, YT			<input type="checkbox"/> Criteria on Report - provide details below if box checked				E <input type="checkbox"/> Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT																																									
Phone: 867-456-4865			Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX				E2 <input type="checkbox"/> Same day or weekend emergency - contact ALS to confirm TAT and surcharge																																									
			Email 1 or Fax nsandys@hemmera.com				Specify Date Required for E2,E or P:																																									
			Email 2 chris@elr.ca																																													
Invoice To Same as Report To <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Invoice Distribution				Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																									
Copy of Invoice with Report <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX				F/P F/P																																									
Company: Hemmera Environchem Inc.			Email 1 or Fax nsandys@hemmera.com				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Dissolved Metals, Hardness</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Dissolved Mercury</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Nitrate, Nitrite, Total Kjeldahl N (TKN)</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Cl, F, Sulfate, conductivity, pH, alkalinity</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Anion Sum, Cation Sum, Cation/Anion Balance</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Cyanide - Weak Acid Diss., Total, Free</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Ammonia N (total), Total Organic Carbon</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Thiocyanate (SCN)</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Inorganic Carbon</td> <td colspan="4"></td> <td colspan="4"></td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Number of Containers</td> </tr> <tr> <td>P</td><td>P</td><td>P</td><td></td><td>P</td><td>P</td><td>P</td><td></td><td>P</td><td>P</td><td>P</td><td></td> </tr> </table>												Dissolved Metals, Hardness	Dissolved Mercury	Nitrate, Nitrite, Total Kjeldahl N (TKN)	Cl, F, Sulfate, conductivity, pH, alkalinity	Anion Sum, Cation Sum, Cation/Anion Balance	Cyanide - Weak Acid Diss., Total, Free	Ammonia N (total), Total Organic Carbon	Thiocyanate (SCN)	Total Inorganic Carbon									Number of Containers	P	P	P		P	P	P		P	P	P	
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	MW09-08		26-May-16	9:45	Water	R	R	R	R	R	R	R	R	R						7																												
	Dup-1		25-May-16	17:20	Water	R	R	R	R	R	R	R	R	R						7																												
	Dup-2		26-May-16	8:20	Water	R	R	R	R	R	R	R	R	R						7																												
	FB-1		24-May-16	16:50	Water	R	R	R	R	R	R	R	R	R						7																												
	FB-2		25-May-16	18:10	Water	R	R	R	R	R	R	R	R	R						7																												
	FB-3		26-May-16	17:00	Water	R	R	R	R	R	R	R	R	R						7																												
	Travel Blank - 1		26-May-16	-	Water	R	R	R	R	R	R	R	R	R						9																												
	CH-P-13-03/50		25-May-16	17:20	Water	R														1																												
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							Cooling Initiated <input type="checkbox"/>																																									
							INITIAL COOLER TEMPERATURES °C																																									
							FINAL COOLER TEMPERATURES °C																																									
							4.3 4.6																																									
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Released by:		Date:	Time:	Received by:		Date:	Time:	Received by:				Date:	Time:																																			
		27 May 16		Shayan		May 28	1235																																									

**Short Holding Time**

**Rush Processing**