Appendix G.9

Fifteen Mile Stream Project - Results of Analyses of Sediment, Maxxam Analytics

Maxxam
A Bureau Veritas Group Company

Your Project #: Fifteen Mile Stream
Your C.O.C. #: 686781-01-01, 686781-02-01

Attention: Ryan Gardiner

McCallum Environmental
2 Bluewater Rd., Suite 135
Bedford, NS
CANADA B4B 1G7

Report Date: 2018/10/30
Report #: R5462224
Version: 3 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8Q6840
Received: 2018/10/09, 16:01

Sample Matrix: SEDIMENT
Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Metals Solids Acid Extr. ICPMS	6	2018/10/15	2018/10/16	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	6	2018/10/16	2018/10/16	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	1	2018/10/16	2018/10/17	ATL SOP 00058	EPA 6020A R1 m
Particle size in solids (pipette&sieve) (2)	5	N/A	2018/10/26	ATL SOP 00012	MSAMS'78/WREP-125R3m
Particle size in solids (pipette&sieve) (2)	8	N/A	2018/10/27	ATL SOP 00012	MSAMS'78/WREP-125R3m
Total Organic Carbon in Soil (1)	13	N/A	2018/10/16	CAM SOP-00468	BCMOE TOC Aug 2014

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Analytics Mississauga
(2) Note: Graphical representation of larger fractions (PHI-4, PHI -3 and PHI -2) not applicable unless these optional parameters are specifically requested.

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Your Project #: Fifteen Mile Stream
Your C.O.C. #: 686781-01-01, 686781-02-01

Attention: Ryan Gardiner

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2 Bluewater Rd., Suite 135
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Report Date: 2018/10/30
Report #: R5462224
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CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8Q6840
Received: 2018/10/09, 16:01

Encryption Key

Maxxam
30 Oct 2018 10:10:52

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Maryann Comeau, Project Manager
Email: MComeau@maxxam.ca
Phone# (902) 420-0203
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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B8Q6840
Report Date: 2018/10/30

McCallum Environmental
Client Project #: Fifteen Mile Stream

RESULTS OF ANALYSES OF SEDIMENT

Maxxam ID		HZD397	HZD398	HZD399	HZD400	HZD425		HZD425	
Sampling Date		2018/10/05 15:40	2018/10/05 15:15	2018/10/05 15:00	2018/10/05 14:30	2018/10/05 14:00		2018/10/05 14:00	
COC Number		686781-01-01	686781-01-01	686781-01-01	686781-01-01	686781-02-01		686781-02-01	
	UNITS	FIA 1.1	FIA 1.2	FIA 1.3	FIA 2.1	FIA 2.2	RDL	FIA 2.2 Lab-Dup	RDL
Inorganics									
Total Organic Carbon	mg/kg	11000	8800	2600	15000	7600	500		
< -1 Phi (2 mm)	%	100 (1)	11	100 (1)	100	78	0.10	79	0.10
< 0 Phi (1 mm)	%	100	6.6 (1)	100 (1)	100 (1)	74 (1)	0.10	74 (1)	0.10
< +1 Phi (0.5 mm)	%	97 (1)	4.8 (1)	97 (1)	86 (1)	65 (1)	0.10	65 (1)	0.10
< +2 Phi (0.25 mm)	%	58 (1)	2.0	61 (1)	17 (1)	38 (1)	0.10	36	0.10
< +3 Phi (0.12 mm)	%	22	0.93	20 (1)	6.1 (1)	13	0.10	13	0.10
< +4 Phi (0.062 mm)	%	14	0.68	5.2	4.7	7.4	0.10	6.6	0.10
< +5 Phi (0.031 mm)	%	11	0.55	3.2	4.2	6.0	0.10	6.5	0.10
< +6 Phi (0.016 mm)	%	8.3	0.34	2.3	3.8	4.9	0.10	5.0	0.10
< +7 Phi (0.0078 mm)	%	5.7	0.18	1.5	2.5	3.4	0.10	3.3	0.10
< +8 Phi (0.0039 mm)	%	5.0	0.19	1.3	2.1	3.0	0.10	2.8	0.10
< +9 Phi (0.0020 mm)	%	4.4	0.13	1.2	1.7	2.2	0.10	2.1	0.10
Gravel	%	<0.10	89	<0.10	<0.10	22	0.10	21	0.10
Sand	%	86	10	95	95	70	0.10	72	0.10
Silt	%	8.9	0.49	3.9	2.6	4.5	0.10	3.7	0.10
Clay	%	5.0	0.19	1.3	2.1	3.0	0.10	2.8	0.10

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
(1) PSA sample observation comment: Fraction contained organic matter

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Maxxam Job #: B8Q6840
Report Date: 2018/10/30

McCallum Environmental
Client Project #: Fifteen Mile Stream

RESULTS OF ANALYSES OF SEDIMENT

Maxxam ID		HZD426	HZD427	HZD428	HZD429	HZD430	HZD431	HZD432	
Sampling Date		2018/10/05 13:35	2018/10/05 12:40	2018/10/05 12:15	2018/10/05 11:50	2018/10/05 11:00	2018/10/05 10:30	2018/10/05 10:00	
COC Number		686781-02-01	686781-02-01	686781-02-01	686781-02-01	686781-02-01	686781-02-01	686781-02-01	
	UNITS	FIA 2.3	FIA 3.1	FIA 3.2	FIA 3.3	FIA 4.1	FIA 4.2	FIA 4.3	RDL
Inorganics									
Total Organic Carbon	mg/kg	13000	160000	19000	11000	380000	450000	160000	500
< -1 Phi (2 mm)	%	98 (1)	93	35	24 (1)	91 (1)	89 (1)	100	0.10
< 0 Phi (1 mm)	%	98 (1)	85 (1)	21 (1)	15 (1)	88 (1)	81 (1)	99 (1)	0.10
< +1 Phi (0.5 mm)	%	97 (1)	78 (1)	14 (1)	12 (1)	84	74 (1)	92 (1)	0.10
< +2 Phi (0.25 mm)	%	83 (1)	65 (1)	10 (1)	8.8 (1)	75 (1)	64 (1)	82 (1)	0.10
< +3 Phi (0.12 mm)	%	37	45 (1)	6.5 (1)	5.8	69 (1)	58	71	0.10
< +4 Phi (0.062 mm)	%	15	38	4.5	4.0	64	54	63	0.10
< +5 Phi (0.031 mm)	%	11	33	3.2	3.1	63	52	56	0.10
< +6 Phi (0.016 mm)	%	8.5	31	2.0	1.8	57	48	42	0.10
< +7 Phi (0.0078 mm)	%	6.1	25	0.59	0.57	49	42	25	0.10
< +8 Phi (0.0039 mm)	%	5.1	24	0.54	0.47	47	40	23	0.10
< +9 Phi (0.0020 mm)	%	4.0	24	0.30	0.44	40	39	22	0.10
Gravel	%	1.6	6.9	65	76	9.0	11	<0.10	0.10
Sand	%	83	55	30	20	27	35	37	0.10
Silt	%	9.9	13	4.0	3.5	17	14	40	0.10
Clay	%	5.1	24	0.54	0.47	47	40	23	0.10

RDL = Reportable Detection Limit
(1) PSA sample observation comment: Fraction contained organic matter

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Maxxam Job #: B8Q6840
Report Date: 2018/10/30

McCallum Environmental
Client Project #: Fifteen Mile Stream

RESULTS OF ANALYSES OF SEDIMENT

Maxxam ID		HZD433	
Sampling Date		2018/10/05 15:00	
COC Number		686781-02-01	
	UNITS	Duplicate	RDL
Inorganics			
Total Organic Carbon	mg/kg	2600	500
< -1 Phi (2 mm)	%	100	0.10
< 0 Phi (1 mm)	%	100 (1)	0.10
< +1 Phi (0.5 mm)	%	97 (1)	0.10
< +2 Phi (0.25 mm)	%	60 (1)	0.10
< +3 Phi (0.12 mm)	%	20	0.10
< +4 Phi (0.062 mm)	%	4.6	0.10
< +5 Phi (0.031 mm)	%	4.1	0.10
< +6 Phi (0.016 mm)	%	3.0	0.10
< +7 Phi (0.0078 mm)	%	2.0	0.10
< +8 Phi (0.0039 mm)	%	1.9	0.10
< +9 Phi (0.0020 mm)	%	1.8	0.10
Gravel	%	<0.10	0.10
Sand	%	95	0.10
Silt	%	2.7	0.10
Clay	%	1.9	0.10

RDL = Reportable Detection Limit

(1) PSA sample observation comment: Fraction contained organic matter

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Maxxam Job #: B8Q6840
Report Date: 2018/10/30

McCallum Environmental
Client Project #: Fifteen Mile Stream

ELEMENTS BY ATOMIC SPECTROSCOPY (SEDIMENT)

Maxxam ID		HZD397	HZD398		HZD399		HZD400		HZD425	
Sampling Date		2018/10/05 15:40	2018/10/05 15:15		2018/10/05 15:00		2018/10/05 14:30		2018/10/05 14:00	
COC Number		686781-01-01	686781-01-01		686781-01-01		686781-01-01		686781-02-01	
	UNITS	**FIA 1.1**	**FIA 1.2**	**RDL**	**FIA 1.3**	**RDL**	**FIA 2.1**	**RDL**	**FIA 2.2**	**RDL**
Metals										
Acid Extractable Aluminum (Al)	mg/kg	7300	7300	10	6900	10	6300	10	4300	10
Acid Extractable Antimony (Sb)	mg/kg	2.2	<2.0	2.0	5.2	2.0	<2.0	2.0	69	2.0
Acid Extractable Arsenic (As)	mg/kg	2900	1100	20	8600	200	2900	20	120000	2000
Acid Extractable Barium (Ba)	mg/kg	13	14	5.0	7.4	5.0	10	5.0	26	5.0
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	18	2.0
Acid Extractable Boron (B)	mg/kg	<50	<50	50	<50	50	<50	50	<50	50
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	0.30	<0.30	0.30	<0.30	0.30	0.36	0.30
Acid Extractable Chromium (Cr)	mg/kg	9.6	9.7	2.0	9.1	2.0	8.6	2.0	5.4	2.0
Acid Extractable Cobalt (Co)	mg/kg	9.8	13	1.0	29	1.0	7.2	1.0	340	1.0
Acid Extractable Copper (Cu)	mg/kg	22	2.8	2.0	31	2.0	9.2	2.0	72	2.0
Acid Extractable Iron (Fe)	mg/kg	19000	20000	50	36000	50	22000	50	160000	500
Acid Extractable Lead (Pb)	mg/kg	24	11	0.50	28	0.50	18	0.50	430	0.50
Acid Extractable Lithium (Li)	mg/kg	16	15	2.0	16	2.0	14	2.0	8.4	2.0
Acid Extractable Manganese (Mn)	mg/kg	200	2000	2.0	160	2.0	170	2.0	130	2.0
Acid Extractable Mercury (Hg)	mg/kg	3.9	1.5	0.10	5.1	0.10	3.9	0.10	61	1.0
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	2.9	2.0
Acid Extractable Nickel (Ni)	mg/kg	14	5.9	2.0	47	2.0	13	2.0	350	2.0
Acid Extractable Rubidium (Rb)	mg/kg	5.2	4.9	2.0	4.8	2.0	5.5	2.0	5.1	2.0
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	4.2	1.0
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	0.50	<0.50	0.50	<0.50	0.50	6.5	0.50
Acid Extractable Strontium (Sr)	mg/kg	<5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0	<5.0	5.0
Acid Extractable Thallium (Tl)	mg/kg	<0.10	0.12	0.10	0.21	0.10	0.14	0.10	0.80	0.10
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0	<2.0	2.0
Acid Extractable Uranium (U)	mg/kg	0.37	0.34	0.10	0.32	0.10	0.29	0.10	0.35	0.10
Acid Extractable Vanadium (V)	mg/kg	11	11	2.0	9.2	2.0	8.5	2.0	6.0	2.0
Acid Extractable Zinc (Zn)	mg/kg	32	29	5.0	47	5.0	26	5.0	28	5.0

RDL = Reportable Detection Limit

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Maxxam Job #: B8Q6840
Report Date: 2018/10/30

McCallum Environmental
Client Project #: Fifteen Mile Stream

ELEMENTS BY ATOMIC SPECTROSCOPY (SEDIMENT)

Maxxam ID		HZD426	HZD427		HZD428	HZD429	HZD430	HZD431	
Sampling Date		2018/10/05 13:35	2018/10/05 12:40		2018/10/05 12:15	2018/10/05 11:50	2018/10/05 11:00	2018/10/05 10:30	
COC Number		686781-02-01	686781-02-01		686781-02-01	686781-02-01	686781-02-01	686781-02-01	
	UNITS	FIA 2.3	FIA 3.1	RDL	FIA 3.2	FIA 3.3	FIA 4.1	FIA 4.2	RDL
Metals									
Acid Extractable Aluminum (Al)	mg/kg	8100	9900	10	14000	13000	5600	12000	10
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0
Acid Extractable Arsenic (As)	mg/kg	560	1900	20	140	24	61	160	2.0
Acid Extractable Barium (Ba)	mg/kg	11	46	5.0	63	73	43	50	5.0
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0
Acid Extractable Boron (B)	mg/kg	<50	<50	50	<50	<50	<50	<50	50
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	0.67	0.30	<0.30	<0.30	0.62	0.53	0.30
Acid Extractable Chromium (Cr)	mg/kg	10	11	2.0	22	22	4.1	10	2.0
Acid Extractable Cobalt (Co)	mg/kg	4.9	20	1.0	40	43	4.0	3.5	1.0
Acid Extractable Copper (Cu)	mg/kg	13	10	2.0	7.3	8.5	14	28	2.0
Acid Extractable Iron (Fe)	mg/kg	16000	15000	50	37000	30000	6300	4900	50
Acid Extractable Lead (Pb)	mg/kg	29	41	0.50	25	17	39	27	0.50
Acid Extractable Lithium (Li)	mg/kg	18	12	2.0	32	33	<2.0	2.1	2.0
Acid Extractable Manganese (Mn)	mg/kg	290	1200	2.0	6700	4000	220	200	2.0
Acid Extractable Mercury (Hg)	mg/kg	6.4	1.2	0.10	0.11	<0.10	0.47	0.50	0.10
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0
Acid Extractable Nickel (Ni)	mg/kg	4.5	15	2.0	21	20	5.3	6.4	2.0
Acid Extractable Rubidium (Rb)	mg/kg	5.1	7.3	2.0	25	22	2.8	2.0	2.0
Acid Extractable Selenium (Se)	mg/kg	<1.0	1.6	1.0	<1.0	<1.0	1.8	3.4	1.0
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	0.50	<0.50	<0.50	<0.50	<0.50	0.50
Acid Extractable Strontium (Sr)	mg/kg	<5.0	12	5.0	5.3	5.7	27	35	5.0
Acid Extractable Thallium (Tl)	mg/kg	<0.10	0.19	0.10	0.67	0.48	<0.10	<0.10	0.10
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	2.0
Acid Extractable Uranium (U)	mg/kg	0.39	1.3	0.10	0.68	0.69	0.87	4.6	0.10
Acid Extractable Vanadium (V)	mg/kg	11	18	2.0	32	27	13	7.7	2.0
Acid Extractable Zinc (Zn)	mg/kg	30	36	5.0	54	53	20	25	5.0
RDL = Reportable Detection Limit									

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Maxxam Job #: B8Q6840
Report Date: 2018/10/30

McCallum Environmental
Client Project #: Fifteen Mile Stream

ELEMENTS BY ATOMIC SPECTROSCOPY (SEDIMENT)

Maxxam ID		HZD432		HZD433	
Sampling Date		2018/10/05 10:00		2018/10/05 15:00	
COC Number		686781-02-01		686781-02-01	
	UNITS	FIA 4.3	RDL	Duplicate	RDL
Metals					
Acid Extractable Aluminum (Al)	mg/kg	22000	10	6800	10
Acid Extractable Antimony (Sb)	mg/kg	<2.0	2.0	3.2	2.0
Acid Extractable Arsenic (As)	mg/kg	89	2.0	5000	200
Acid Extractable Barium (Ba)	mg/kg	22	5.0	8.6	5.0
Acid Extractable Beryllium (Be)	mg/kg	<2.0	2.0	<2.0	2.0
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	2.0	<2.0	2.0
Acid Extractable Boron (B)	mg/kg	<50	50	<50	50
Acid Extractable Cadmium (Cd)	mg/kg	0.32	0.30	<0.30	0.30
Acid Extractable Chromium (Cr)	mg/kg	25	2.0	9.4	2.0
Acid Extractable Cobalt (Co)	mg/kg	6.4	1.0	17	1.0
Acid Extractable Copper (Cu)	mg/kg	28	2.0	23	2.0
Acid Extractable Iron (Fe)	mg/kg	16000	50	27000	50
Acid Extractable Lead (Pb)	mg/kg	15	0.50	20	0.50
Acid Extractable Lithium (Li)	mg/kg	17	2.0	16	2.0
Acid Extractable Manganese (Mn)	mg/kg	230	2.0	180	2.0
Acid Extractable Mercury (Hg)	mg/kg	0.21	0.10	4.4	0.10
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	2.0	<2.0	2.0
Acid Extractable Nickel (Ni)	mg/kg	18	2.0	29	2.0
Acid Extractable Rubidium (Rb)	mg/kg	4.8	2.0	5.3	2.0
Acid Extractable Selenium (Se)	mg/kg	3.6	1.0	<1.0	1.0
Acid Extractable Silver (Ag)	mg/kg	<0.50	0.50	0.87	0.50
Acid Extractable Strontium (Sr)	mg/kg	10	5.0	<5.0	5.0
Acid Extractable Thallium (Tl)	mg/kg	<0.10	0.10	0.13	0.10
Acid Extractable Tin (Sn)	mg/kg	<2.0	2.0	<2.0	2.0
Acid Extractable Uranium (U)	mg/kg	5.9	0.10	0.34	0.10
Acid Extractable Vanadium (V)	mg/kg	16	2.0	9.8	2.0
Acid Extractable Zinc (Zn)	mg/kg	42	5.0	34	5.0
RDL = Reportable Detection Limit					

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	11.3°C

Average temperature upon receipt >10°C for TOC testing.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B8Q6840
Report Date: 2018/10/30

McCallum Environmental
Client Project #: Fifteen Mile Stream

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Cristina Carriere, Scientific Service Specialist

Eric Dearman, Scientific Specialist

Gina Thompson, Inorganics General Chemistry Supervisor

Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam
A Bureau Veritas Group Company

Your Project #: FMS
Your C.O.C. #: D37585

Attention: Ryan Gardiner

McCallum Environmental
2 Bluewater Rd., Suite 135
Bedford, NS
CANADA B4B 1G7

Report Date: 2018/11/16
Report #: R5486964
Version: 3 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8S6568
Received: 2018/10/29, 16:19

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Mercury (CVAA)	6	2018/11/01	2018/11/02	ATL SOP 00026	EPA 245.5 m
Metals Solids Acid Extr. ICPMS	5	2018/10/31	2018/11/01	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	1	2018/11/02	2018/11/03	ATL SOP 00058	EPA 6020A R1 m
Particle size in solids (pipette&sieve) (2)	6	N/A	2018/11/09	ATL SOP 00012	MSAMS'78/WREP-125R3m
Total Organic Carbon in Soil (1)	5	N/A	2018/11/02	CAM SOP-00468	BCMOE TOC Aug 2014
Total Organic Carbon in Soil (1)	1	N/A	2018/11/05	CAM SOP-00468	BCMOE TOC Aug 2014

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Analytics Mississauga
(2) Note: Graphical representation of larger fractions (PHI-4, PHI -3 and PHI -2) not applicable unless these optional parameters are specifically requested.

Your Project #: FMS
Your C.O.C. #: D37585

Attention: Ryan Gardiner

McCallum Environmental
2 Bluewater Rd., Suite 135
Bedford, NS
CANADA B4B 1G7

Report Date: 2018/11/16
Report #: R5486964
Version: 3 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8S6568
Received: 2018/10/29, 16:19

Encryption Key

Maxxam
16 Nov 2018 10:29:27

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Maryann Comeau, Project Manager
Email: MComeau@maxxam.ca
Phone# (902) 420-0203
==========

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Maxxam Job #: B8S6568
Report Date: 2018/11/16

McCallum Environmental
Client Project #: FMS

RESULTS OF ANALYSES OF SOIL

Maxxam ID		IDL925	IDL926	IDL927	IDL928	IDL929	IDL930	
Sampling Date		2018/10/22 09:45	2018/10/26 09:50	2018/10/26 10:10	2018/10/22 11:15	2018/10/26 10:20	2018/10/26 10:40	
COC Number		D37585	D37585	D37585	D37585	D37585	D37585	
	UNITS	ANTIDAM 1	ANTIDAM 2	ANTIDAM 3	ANTIDAM 4	ANTIDAM 5	ANTIDAM 6	RDL
Inorganics								
Total Organic Carbon	mg/kg	250000	210000	300000	300000	22000	15000	500
< -1 Phi (2 mm)	%	100	100 (1)	100	100	97 (1)	54 (1)	0.10
< 0 Phi (1 mm)	%	100	100 (1)	100	98	97 (1)	53 (1)	0.10
< +1 Phi (0.5 mm)	%	94	95 (1)	89	86	95 (1)	50 (1)	0.10
< +2 Phi (0.25 mm)	%	92	93 (1)	84	83	91 (1)	43 (1)	0.10
< +3 Phi (0.12 mm)	%	90	90 (1)	80	80	75	32	0.10
< +4 Phi (0.062 mm)	%	89	85	77	77	57	22	0.10
< +5 Phi (0.031 mm)	%	86	77	74	71	43	16	0.10
< +6 Phi (0.016 mm)	%	78	65	65	62	31	10	0.10
< +7 Phi (0.0078 mm)	%	62	48	49	43	20	5.4	0.10
< +8 Phi (0.0039 mm)	%	54	43	44	39	17	4.2	0.10
< +9 Phi (0.0020 mm)	%	44	36	44	36	13	2.8	0.10
Gravel	%	<0.10	0.29	0.17	0.25	2.7	46	0.10
Sand	%	11	14	23	23	41	32	0.10
Silt	%	35	42	32	38	40	18	0.10
Clay	%	54	43	44	39	17	4.2	0.10

RDL = Reportable Detection Limit
(1) PSA sample observation comment: Fraction contained organic matter

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Maxxam Job #: B8S6568
Report Date: 2018/11/16

McCallum Environmental
Client Project #: FMS

MERCURY BY COLD VAPOUR AA (SOIL)

Maxxam ID		IDL925	IDL926	IDL927	IDL928	IDL929	IDL930	
Sampling Date		2018/10/22 09:45	2018/10/26 09:50	2018/10/26 10:10	2018/10/22 11:15	2018/10/26 10:20	2018/10/26 10:40	
COC Number		D37585	D37585	D37585	D37585	D37585	D37585	
	UNITS	ANTIDAM 1	ANTIDAM 2	ANTIDAM 3	ANTIDAM 4	ANTIDAM 5	ANTIDAM 6	RDL
Metals								
Mercury (Hg)	mg/kg	0.31	0.27	0.22	0.25	0.11	0.087	0.010

RDL = Reportable Detection Limit

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McCallum Environmental
Client Project #: FMS

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		IDL925	IDL926	IDL927	IDL928	IDL929	IDL930	
Sampling Date		2018/10/22 09:45	2018/10/26 09:50	2018/10/26 10:10	2018/10/22 11:15	2018/10/26 10:20	2018/10/26 10:40	
COC Number		D37585	D37585	D37585	D37585	D37585	D37585	
	UNITS	ANTIDAM 1	ANTIDAM 2	ANTIDAM 3	ANTIDAM 4	ANTIDAM 5	ANTIDAM 6	RDL
Metals								
Acid Extractable Aluminum (Al)	mg/kg	15000	17000	12000	10000	11000	9800	10
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0
Acid Extractable Arsenic (As)	mg/kg	32	35	17	19	45	38	2.0
Acid Extractable Barium (Ba)	mg/kg	63	62	63	61	20	29	5.0
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	<50	50
Acid Extractable Cadmium (Cd)	mg/kg	0.61	0.33	0.57	0.39	<0.30	<0.30	0.30
Acid Extractable Chromium (Cr)	mg/kg	11	15	7.5	7.6	12	13	2.0
Acid Extractable Cobalt (Co)	mg/kg	3.9	4.5	3.0	3.7	4.3	4.9	1.0
Acid Extractable Copper (Cu)	mg/kg	18	13	12	16	5.7	6.8	2.0
Acid Extractable Iron (Fe)	mg/kg	8100	9600	5800	9700	28000	17000	50
Acid Extractable Lead (Pb)	mg/kg	28	27	15	16	9.4	9.7	0.50
Acid Extractable Lithium (Li)	mg/kg	11	11	7.7	5.5	9.2	15	2.0
Acid Extractable Manganese (Mn)	mg/kg	270	350	190	280	400	230	2.0
Acid Extractable Mercury (Hg)	mg/kg	0.50	0.41	0.29	0.35	0.11	0.22	0.10
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0
Acid Extractable Nickel (Ni)	mg/kg	9.0	9.0	7.7	8.1	6.2	9.8	2.0
Acid Extractable Rubidium (Rb)	mg/kg	6.3	7.7	4.2	4.4	5.0	7.5	2.0
Acid Extractable Selenium (Se)	mg/kg	2.5	2.7	2.6	2.1	<1.0	<1.0	1.0
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50
Acid Extractable Strontium (Sr)	mg/kg	19	20	33	23	<5.0	6.6	5.0
Acid Extractable Thallium (Tl)	mg/kg	0.14	0.13	<0.10	<0.10	<0.10	<0.10	0.10
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0
Acid Extractable Uranium (U)	mg/kg	2.1	3.3	3.3	2.0	0.53	0.43	0.10
Acid Extractable Vanadium (V)	mg/kg	15	13	7.0	8.0	41	18	2.0
Acid Extractable Zinc (Zn)	mg/kg	35	33	34	29	24	30	5.0
RDL = Reportable Detection Limit								

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.7°C

Results relate only to the items tested.

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Maxxam Job #: B8S6568
Report Date: 2018/11/16

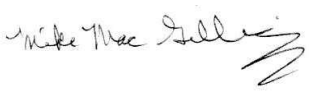
McCallum Environmental
Client Project #: FMS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Gina Thompson, Inorganics General Chemistry Supervisor



Mike MacGillivray, Scientific Specialist (Inorganics)

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