

Report ID: 527856-IAS
 Report Date: 17-Jul-24
 Date Received: 04-Jul-24

CERTIFICATE OF ANALYSIS

for
 Meduxnekeag River Association
 733 Main Street
 Woodstock, NB E7M 2E6



921 College Hill Rd
 Fredericton NB
 Canada E3B 6Z9
 Tel: 506.452.1212
 Fax: 506.452.0594
 www.rpc.ca

Attention: Meduxnekeag River Association

Project #: Not Available

Analysis of Surface Water

RPC Sample ID:		527856-1	527856-2	527856-3	
Client Sample ID:		17/24/09000 MacQuarrie Brook	17/24/09001 Meduxnekeag River @ Red Bridge	17/24/09002 Meduxnekeag River Below MacQuarrie Br.	
Date Sampled:		4-Jul-24	4-Jul-24	4-Jul-24	
Analytes	Units	RL			
Sodium	mg/L	0.05	20.5	4.65	5.49
Potassium	mg/L	0.02	0.83	0.7	0.75
Calcium	mg/L	0.05	47.1	32.5	31.5
Magnesium	mg/L	0.01	8.67	2.94	3.06
Alkalinity (as CaCO ₃)	mg/L	2	120	82	83
Chloride	mg/L	0.5	39.9	7.7	7.8
Fluoride	mg/L	0.05	0.13	0.18	0.19
Sulfate	mg/L	1	12	4	4
Bromine	mg/L	0.01	0.02	0.01	0.02
Ammonia (as N)	mg/L	0.05	< 0.05	< 0.05	< 0.05
Un-ionized @ 20°C	mg/L	-	< 0.001	< 0.001	< 0.001
Nitrate + Nitrite (as N)	mg/L	0.05	0.97	0.13	0.09
Nitrite (as N)	mg/L	0.05	< 0.05	< 0.05	< 0.05
Nitrate (as N)	mg/L	0.05	0.97	0.13	0.09
Nitrogen - Total	mg/L	0.2	0.9	0.4	0.4
Phosphorus - Total	mg/L	0.002	0.007	0.014	0.011
Carbon - Total Organic	mg/L	0.5	3.0	5.9	5.7
Colour	TCU	5	7	21	21
Conductivity	µS/cm	1	427	204	201
pH	units	-	8.2	8.1	8.1
Turbidity	NTU	0.1	0.7	0.7	0.9
Calculated Parameters					
Bicarbonate (as CaCO ₃)	mg/L	-	118.	81.0	82.0
Carbonate (as CaCO ₃)	mg/L	-	1.76	0.959	0.970
Hardness (as CaCO ₃)	mg/L	0.2	153	93.3	91.3
TDS (calc)	mg/L	-	210	109	110
Saturation pH (20°C)	units	-	7.7	7.9	7.9
Langelier Index (20°C)	-	-	0.55	0.16	0.15

This report relates only to the sample(s) and information provided to the laboratory.

RL = Reporting Limit

Matthew Norman
 Senior Chemist
 Inorganic Analytical Chemistry

Brannen Burhoe
 Supervisor
 Inorganic Analytical Services

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Analysis of Surface Water

RPC Sample ID:			527856-4	527856-5	527856-6
Client Sample ID:			17/24/09003 Marven's Brook	17/24/09004 NBMED001	17/24/09005 MB001
Date Sampled:			4-Jul-24	4-Jul-24	4-Jul-24
Analytes	Units	RL			
Sodium	mg/L	0.05	6.88	1.92	12.7
Potassium	mg/L	0.02	0.66	0.59	0.73
Calcium	mg/L	0.05	40.8	27.4	34.0
Magnesium	mg/L	0.01	3.55	2.56	6.44
Alkalinity (as CaCO ₃)	mg/L	2	100	72	98
Chloride	mg/L	0.5	12	2.4	21.0
Fluoride	mg/L	0.05	0.21	0.19	0.17
Sulfate	mg/L	1	5	3	6
Bromine	mg/L	0.01	0.02	0.01	0.02
Ammonia (as N)	mg/L	0.05	< 0.05	< 0.05	< 0.05
Un-ionized @ 20°C	mg/L	-	< 0.001	< 0.001	< 0.001
Nitrate + Nitrite (as N)	mg/L	0.05	0.84	0.15	0.35
Nitrite (as N)	mg/L	0.05	< 0.05	< 0.05	< 0.05
Nitrate (as N)	mg/L	0.05	0.84	0.15	0.35
Nitrogen - Total	mg/L	0.2	1.0	0.4	0.5
Phosphorus - Total	mg/L	0.002	0.021	0.012	0.009
Carbon - Total Organic	mg/L	0.5	6.2	5.7	3.5
Colour	TCU	5	20	23	12
Conductivity	µS/cm	1	251	158	266
pH	units	-	8.0	7.9	8.0
Turbidity	NTU	0.1	1.8	0.8	0.5
Calculated Parameters					
Bicarbonate (as CaCO ₃)	mg/L	-	99.0	71.4	97.0
Carbonate (as CaCO ₃)	mg/L	-	0.931	0.533	0.912
Hardness (as CaCO ₃)	mg/L	0.2	116	79.0	111
TDS (calc)	mg/L	-	140	88	146
Saturation pH (20°C)	units	-	7.8	8.1	7.9
Langelier Index (20°C)	-	-	0.23	-0.16	0.14

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RPC Sample ID:		527856-1	527856-2	527856-3	
Client Sample ID:		17/24/09000 MacQuarrie Brook	17/24/09001 Meduxnekeag River @ Red Bridge	17/24/09002 Meduxnekeag River Below MacQuarrie Br.	
Date Sampled:		4-Jul-24	4-Jul-24	4-Jul-24	
Analytes	Units	RL			
Aluminum	mg/L	0.001	0.018	0.021	0.024
Antimony	mg/L	0.0001	0.0003	< 0.0001	< 0.0001
Arsenic	mg/L	0.001	< 0.001	< 0.001	< 0.001
Barium	mg/L	0.001	0.011	0.007	0.007
Beryllium	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Bismuth	mg/L	0.001	< 0.001	< 0.001	< 0.001
Boron	mg/L	0.001	0.009	0.008	0.008
Cadmium	mg/L	0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium	mg/L	0.05	47.1	32.5	31.5
Chromium	mg/L	0.001	< 0.001	< 0.001	< 0.001
Cobalt	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Copper	mg/L	0.001	< 0.001	< 0.001	< 0.001
Iron	mg/L	0.02	< 0.02	0.05	0.04
Lead	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Lithium	mg/L	0.0001	0.0006	0.0004	0.0004
Magnesium	mg/L	0.01	8.67	2.94	3.06
Manganese	mg/L	0.001	0.008	0.014	0.015
Molybdenum	mg/L	0.0001	0.0003	0.0002	0.0002
Nickel	mg/L	0.001	< 0.001	< 0.001	< 0.001
Potassium	mg/L	0.02	0.83	0.70	0.75
Rubidium	mg/L	0.0001	0.0006	0.0007	0.0007
Selenium	mg/L	0.001	< 0.001	< 0.001	< 0.001
Silver	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Sodium	mg/L	0.05	20.5	4.65	5.49
Strontium	mg/L	0.001	0.328	0.182	0.178
Tellurium	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Thallium	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Tin	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Uranium	mg/L	0.0001	0.0004	< 0.0001	< 0.0001
Vanadium	mg/L	0.001	< 0.001	< 0.001	< 0.001
Zinc	mg/L	0.001	< 0.001	< 0.001	< 0.001

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Client Sample ID:			17/24/09003 Marven's Brook	17/24/09004 NBMED001	17/24/09005 MB001
Date Sampled:			4-Jul-24	4-Jul-24	4-Jul-24
Analytes	Units	RL			
Aluminum	mg/L	0.001	0.031	0.024	0.016
Antimony	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Arsenic	mg/L	0.001	< 0.001	< 0.001	< 0.001
Barium	mg/L	0.001	0.008	0.006	0.008
Beryllium	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Bismuth	mg/L	0.001	< 0.001	< 0.001	< 0.001
Boron	mg/L	0.001	0.009	0.007	0.007
Cadmium	mg/L	0.00001	< 0.00001	< 0.00001	< 0.00001
Calcium	mg/L	0.05	40.8	27.4	34.0
Chromium	mg/L	0.001	< 0.001	< 0.001	< 0.001
Cobalt	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Copper	mg/L	0.001	< 0.001	< 0.001	< 0.001
Iron	mg/L	0.02	0.04	0.05	< 0.02
Lead	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Lithium	mg/L	0.0001	0.0003	0.0002	0.0005
Magnesium	mg/L	0.01	3.55	2.56	6.44
Manganese	mg/L	0.001	0.017	0.019	0.005
Molybdenum	mg/L	0.0001	0.0002	0.0001	0.0002
Nickel	mg/L	0.001	< 0.001	< 0.001	< 0.001
Potassium	mg/L	0.02	0.66	0.59	0.73
Rubidium	mg/L	0.0001	0.0004	0.0006	0.0005
Selenium	mg/L	0.001	< 0.001	< 0.001	< 0.001
Silver	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Sodium	mg/L	0.05	6.88	1.92	12.7
Strontium	mg/L	0.001	0.238	0.161	0.177
Tellurium	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Thallium	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Tin	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001
Uranium	mg/L	0.0001	0.0002	< 0.0001	0.0003
Vanadium	mg/L	0.001	< 0.001	< 0.001	< 0.001
Zinc	mg/L	0.001	< 0.001	< 0.001	< 0.001

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Methods

<u>Analyte</u>	<u>RPC SOP #</u>	<u>Method Reference</u>	<u>Method Principle</u>
Ammonia	IAS-M47	APHA 4500-NH ₃ G	Phenate Colourimetry
pH	IAS-M03	APHA 4500-H ⁺ B	pH Electrode - Electrometric
Alkalinity (as CaCO ₃)	IAS-M43	EPA 310.2	Methyl Orange Colourimetry
Chloride	IAS-M44	APHA 4500-CL E	Ferricyanide Colourimetry
Fluoride	IAS-M30	APHA 4500-F- D	SPADNS Colourimetry
Sulfate	IAS-M45	APHA 4500-SO ₄ E	Turbidimetry
Nitrate + Nitrite (as N)	IAS-M48	APHA 4500-NO ₃ H	Hydrazine Red., Derivatization, Colourimetry
Nitrite (as N)	IAS-M49	APHA 4500-NO ₂ - B	NED/sulfanilamide Colourimetry
Nitrogen - Total	IAS-M57	ASTM D8083-16	Combustion/Chemiluminescence
Phosphorus - Total	IAS-M17	APHA 4500-P E	Digestion, Manual Colourimetry
Carbon - Total Organic	IAS-M57	APHA 5310 B	Combustion/NDIR
Turbidity	IAS-M06	APHA 2130 B	Nephelometry
Colour	IAS-M55	APHA 2120 Color (A,C)	Single Wavelength Spectrophotometry
Conductivity	IAS-M04	APHA 2510 B	Conductivity Meter - Electrode
Trace Metals	IAS-M01/IAS-M29	EPA 200.8/EPA 200.7	ICP-MS/ICP-ES