2025 Serpent River Watershed Monitoring Program Annual Water Quality Report

Year 1 of Cycle 6
Submitted to the Canadian Nuclear Safety Commission and the Ministry of the Environment, Conservation and Parks on behalf of Rio Algom Limited and Denison Mines Inc

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Joint Review Group for the Serpent River Watershed Monitoring Program 2025

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1.0 Introduction

As part of the closure and decommissioning process, Rio Algom Limited (RAL) and Denison Mines Inc. (DMI) developed a focused and integrated performance monitoring network for legacy sites within the Serpent River Watershed (SRW). The comprehensive monitoring and management strategy clearly defined and delineated the purpose for all monitoring activities through three integrated programs: the Tailings Management Area (TMA) Operational Monitoring Program (TOMP), the Source Area Monitoring Program (SAMP), and the Serpent River Watershed Monitoring Program (SRWMP) (Minnow Environmental Inc. (Minnow, 2024). An integrated assessment of the results from the monitoring programs had previously been prepared every five years in a State of the Environment Report (SOE) in compliance with license requirements and in accordance with Canadian Standards Association (CSA) standard N288.4-10 (2010). The most recent SOE Report (Cycle 5, inclusive of data from January 1, 2015 – December 31, 2019) was submitted to the Joint Regulatory Review Group (JRG) on March 31, 2021 (Minnow, 2021). The next SOE Report, inclusive of data from Jan 1, 2020 – December 31, 2029 will be reported in 2030 to begin a 10-year reporting cycle as described in the Cycle 6 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2024).

The SRWMP was initiated in 1999 as a joint initiative of RAL and DMI with the objectives of evaluating the effectiveness of mine decommissioning plans and assessing long-term environmental water quality trends in the watershed (Beak International Incorporated (Beak), 1999).

Evolution of the program, key outcomes, program modification decisions, and associated references are summarized in Appendix I. In 2025, the SRWMP followed the program modification recommendations described in the Cycle 6 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2024).

The SRWMP Annual Water Quality Report for 2025 provides surface water quality data from watershed monitoring locations from January 1, 2025, through December 31, 2025, summarizing Year 1 of Cycle 6 of the monitoring program. This report should be read in conjunction with the Annual Operating Care and Maintenance (OCM) reports, prepared independently by each company, which provides a summary of operational activities completed at the facilities as well as data collected as required by the SAMP and TOMP (RAL, 2026; DMI, 2026). The objective of the SRWMP annual data review is to identify anomalous data and evaluate short-term data trends at key locations. Step changes and anomalies are identified in this report by reviewing and compiling the last five years of annual average data for all SRWMP monitoring locations and reviewing the information for any noticeable changes. Significant changes and unusual results are investigated in accordance with the Water Quality Assessment and Response Plan, which is found in Appendix A of the most recent SOE Report (Minnow, 2021).

The SRWMP Annual Water Quality Report for 2025 also provides a summary of the data quality management program results for the period January 1, 2025, through December 31, 2025.

As part of the 2015 SOE review, the Canadian Nuclear Safety Commission (CNSC) instructed RAL and DMI to include annual reporting of a representative radiation dose to the public associated with their closed uranium mine sites in the SRW. Details on this topic are discussed in Section 4.4 of this report.

2.0 Methodology

2.1 Program Requirements

The 2025 SRWMP followed program requirements (sampling locations, frequencies, parameters, and analytical protocols) as approved in the Cycle 6 Study Design (Minnow, 2024). Table 2-1 provides a brief description of each monitoring location, the frequency of monitoring, and parameters monitored during

Cycle 6. A map of the sampling locations included in the water quality monitoring program can be found in Appendix VII.

Table 2-1 2025 SRWMP Water Quality Monitoring Requirements

Reference vs Mine-exposed	Station	Location / Description	Type	Frequency	Parameters
Reference	D-4	Dunlop Lake Outlet (Q-14)	lake	S	barium, pH, DOC, iron, manganese, radium-226, sulphate and uranium
	SR-19	Inlet to Elliot Lake		Q	
	SR-18	Outlet of Jim Christ Lake		S	
	SR-16	Fox Creek at Highway 108	wetland/ stream	Q	
	SR-17	Unnamed Creek Drain Lake 3 at Highway 108		Q	
Mine-exposed	D-6[a]	Cinder Lake Outlet	wetland	Q	barium, pH, DOC, iron, manganese, radium-226, sulphate and uranium
	DS-18	Halfmoon Lake Outlet	stream	Q	barium, pH, DOC, iron, radium-226, sulphate and uranium
	M-01	Sherriff Creek at Highway 108	stream	Q	
	SC-01	Westner Lake Outlet	stream	A	
	D-5	Serpent R between Denison & Quirke TMAs	lake	Q	barium, pH, radium-226, sulphate and uranium
	Q-09[a]	Serpent R Below Quirke TMA Effluent	lake	Q	
	Q-20	Evans Lake Outlet to Dunlop Lake	lake	A	
	SR-01	Quirke Lake Outlet	lake	A	
	SR-06	McCabe Lake Outlet	lake	S	
	SR-08[a]	Nordic Lake Outlet	lake	Q	
Total Number of Locations and Samples/Year			16	45	

Notes: Q = quarterly, S = semi-annually, A = annually. TMA = tailings management area. "DOC" = Dissolved organic carbon.

[a] Hardness monitored at D-6, Q-09, and SR-08, stations where sulphate concentrations are greater than 100 mg/L.

2.2 Program Conformance

All Cycle 6 sampling requirements were met during the 2025 reporting period.

Hardness continues to be monitored as an ancillary parameter at all SRWMP stations. According to the Approved Water Quality Guidelines for Aquatic Life, Wildlife & Agriculture from the British Columbia Ministry of Environment & Climate Change Strategy (BC ENV), manganese and sulphate guidelines are hardness dependent (BC ENV, 2020). Dissolved organic carbon (DOC) was added to the monitoring program at the recommendation of the Ontario Ministry of the Environment, Conservation and Parks (MECP) as it can modify iron toxicity. DOC data is provided in Appendix V for 2025, however, it has not been used for iron assessment in this report, as the upper level of background iron concentrations are higher than federal guidelines. Changes to the program are discussed in further detail in Section 4.2.

2.3 Field Measurements

Field measurement requirements and protocols for the 2025 SRWMP are presented in detail in the Cycle 6 Study Design (Table 7.1, Minnow, 2024). Field Staff have been trained and have reviewed procedures associated with the proper calibration and use of equipment for the measurement of field parameters. The models and accuracy for equipment used in measuring SRWMP field parameters are provided in Table 2-3.

Table 2-3 SRWMP Field Equipment Models and Accuracy

Parameter	Meter	Accuracy	Unit
pH	YSI Pro 10	+/- 0.02	pH units
pH	YSI Pro Plus	+/- 0.02	pH units
Flow	Global Flow Probe	0.1	feet per second

2.4 Data Quality Objectives

Field and laboratory data quality objectives (DQOs) for the 2025 SRWMP are presented in detail in the *Cycle 6 Study Design* (Minnow, 2024). Table 2-4a provides a summary of field DQOs, and Table 2-4b provides a summary of laboratory methods, detection limits and DQOs. Data quality assessment results are provided in Section 3.

2.5 Changes in Analytical Methods

There were no changes to analytical methods in 2025.

Table 2-4a 2025 SRWMP Field Data Quality Objectives

Parameter	Units	Assessment Criteria [1] PWQO BCMOE	Assessment Criteria [1] Background	Data Quality Objectives [2] Detection Limit	Data Quality Objectives [2] Minimum [3] Detectable Difference	Data Quality Objectives [2] Field Blank Criteria	Data Quality Objectives [2] Field Precision
Field Parameters[3]							
Flow	L/s	-	-	method	method	-	30%
pH				0.1	0.01 or 0.02	-	10%
Lake Stations		6.5	-				
Wetland/Streams		-	5.3				
Laboratory Parameters							
Barium	mg/L	1.0	-	0.005	-	0.01	20%
Iron	mg/L	-	-		-		
Lake Stations		-	0.76	0.02	-	0.04	20%
Wetland/Streams		-	2.49	0.02	-	0.04	20%
Manganese [4]	mg/L	0.841	-	0.002	-	0.004	20%
Radium (total)	Bq/L	0.469[5]	-	0.005	-	0.01	20%
Sulphate [4]	mg/L	128-429[4]	-	0.1	-	0.2	20%
Uranium	mg/L	0.015	-	0.0005	-	0.001	20%
Hardness	mg/L	-	-	0.5	-	1.0	20%

Notes:

1. Table S.1, Apprendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)
2. Table 6.2 Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)
3. Minimum detectable difference as identified in instrument manual
4. Table S.2, Apprendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)
5 The dose-base site-specific benchmark for radium is selected, as per CNSC request and is detailed in Section 5.2.5.2, of the Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Table 2-4b 2025 SRWMP Laboratory Methods and Data Quality Objectives

Parameter	Units	Assessment Criteria [1] PWQO BCMOE	Assessment Criteria [1] Background	Method	Laboratory Data Quality Objectives [2] Detection Limit	Laboratory Blank	Precision	Spikes	Accuracy (CRM)
Barium	mg/L	1.0	-	ICP-MS	0.005	0.01	10%	20%	20%
Iron	mg/L	-		ICP-OES					
Lake Stations			0.76		0.02	0.04	10%	20%	20%
Wetland/Streams			2.49		0.02	0.04	10%	20%	20%
Manganese [3]	mg/L	0.841	-	ICP-MS	0.002	0.004	10%	20%	20%
Radium (total)	Bq/L	0.469[4]	-	Alpha Spectroscopy	0.005	0.01	20%	20%	-
Sulphate [3]	mg/L	128-429	-	Ion Chromatography	0.1	0.2	10%	20%	20%
Uranium	mg/L	0.015	-	ICP-MS	0.0005	0.001	10%	20%	20%
Hardness	mg/L	-	-	ICP-OES	0.5	0.1	10%	-	-

Notes:

1. Table S.1, Apprendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)
2. Table 6.2 Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)
3. Table S.2, Apprendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)
4. The dose-base site-specific benchmark for radium is selected, as per CNSC request and is detailed in Section 5.2.5.2, of the Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

2.6 Data Screening and Assessment Conventions

Data validation was conducted on SRWMP water quality data throughout the year. The assessment screening process flags all data points outside a rolling minimum 3-year mean ± 3 standard deviations.

Flagged data and short-term response plans for the RAL-designated sampling stations of the SRWMP are reported quarterly to regulatory agencies as part of the Rio Algom Monthly Water Quality Reports. Data validation of flagged data for the year 2025 can be found in Appendix II.

Annual water quality reporting is designed to be concise and focused on the presentation of data in a standardized format with limited interpretation, as per Section 14.2 of the Implementation Document (Beak, 1999). Data validation ensures prompt response to upset conditions or unusual results, as documented in Data Validation Procedures in conjunction with Water Quality Assessment and Response Plan, which is included in Appendix B of the SOE (Minnow, 2021). Assessment criteria as outlined in Table 2-4a and Table 2-4b of this report, are standardized to benchmarks selected, rationalized, and presented in Appendix S, Tables S.1 and S.2 of the Cycle 5 SOE (Minnow, 2021).

Approved program modifications implemented in January of 2020 focused water quality monitoring on lakes located immediately downstream of the decommissioned TMAs. An in-depth and detailed statistical evaluation of water quality trends has been included in the SOE produced every five years (Minnow 2009, 2011, 2017, 2021). Based on environmental performance and continuing monitoring and annual reporting for the Serpent River watershed, the Canadian Nuclear Safety Commission (CNSC) and Ontario Ministry of Environment, Conservation, and Parks (MECP) agreed to transition SOE reporting to a 10-year reporting cycle (Minnow 2024). The Cycle 6/7 SOE Report will be submitted to regulators in March 2030, beginning the 10-year reporting frequency.

A SRWMP location summary of all annual average concentrations is reviewed and compared to assessment criteria in this report in Table 3-2. In addition, the most recent five-year annual concentrations of mine indicator parameters at key downstream locations are reviewed in this report in Figures 3-3a to 3-3c.

3.0 Results

3.1 Data Quality Results and Assessment

Detailed laboratory quality assurance and quality control (QA/QC) results are provided in Appendix III, and detailed field QA/QC results are provided in Appendix IV. Field quality control results are summarized in Table 3-1a and Table 3-1b. Data quality results and assessments are provided in the following sections.

3.1.1 Laboratory Quality Assurance and Quality Control

In 2025, all analytical requirements for the SRWMP were contracted to laboratories with Canadian Association for Laboratory Accreditation Inc. (CALA) accreditations. (Appendix III).

Detailed laboratory QA/QC results are provided in Appendix III. The 10% objective for QA/QC was met. SGS performed 24,975 analyses with 9532 QC checks, which represents 32.8% QC for sample analysis (Appendix III).

3.1.2 Quality Assurance and Quality Control Resolution of Key Issues

There were no major issues with laboratory analysis requiring resolution in 2025 (Appendix III).

3.1.3 Analytical Blank Performance

Laboratory quality control results confirm that blank data quality objectives were met for all parameters in all samples (Appendix III).

3.1.4 Analytical Duplicate Performance

Laboratory quality control results confirm that duplicate data quality objectives of 20% for radium-226 and 10% for all other parameters were achieved in all samples (Appendix III).

3.1.5 Analytical Laboratory Spike Performance

Laboratory quality control results confirm that the spike data performance was achieved for all parameters in all samples (Appendix III).

3.1.6 Analytical Certified Reference Material Performance

Laboratory quality control results confirm that the certified reference material (CRM) data quality objective of 20% accuracy was achieved for all parameters in all samples in 2025 (Appendix III).

3.1.7 Field Blank Performance

The dissolved organic carbon (DOC) field blank DQO of 1.0 mg/L was exceeded in 1 of 6 samples with a result of 10.7 mg/L (Table 3-1a). This result was validated by a laboratory re-analysis result of 10.8 mg/L and will be considered an outlier until an observable trend emerges (Appendix IV). The sulfate field blank DQO of 0.2 mg/L was exceeded in 2 of 6 samples. Both exceedance results were 0.3 mg/L, very close to the reporting limit of 0.1 mg/L. These exceedances can therefore be attributed to the normal variance of low-level measurements that are close to the reporting limit.

3.1.8 Field Precision Performance

The radium-226 field precision objective of 20% was exceeded in 3 of 6 samples, at 46%, 29%, and 45%. The exceedances occurred at low concentrations (≤ 0.060 Bq/L). High variability in precision at very low concentrations is not uncommon, and variability may be artificially high. All values are representative of typical values observed at these locations; and therefore, the exceedances do not affect interpretation of radium-226 water quality data. The annual average relative percent difference (RPD) still met the DQO at 20%. The sulphate field precision objective of 20% was exceeded in 1 of 6 samples, at 165%. The sulphate annual average RPD of 29% is a direct result of this one exceedance. A detailed check of the analytical data and associated chromatography was conducted by the laboratory and did not indicate any incongruities for the sulphate analysis. Associated work procedures will be reviewed to determine if any changes are needed to improve sampling and resulting precision. All other sulphate field precision results were ≤10%, remaining well below the DQO of 20%.

Table 3-1a 2025 SRWMP Field Blank Results Summary

	pH (pH)	DOC (mg/L)	Hard (mg/L)	SO4 (mg/L)	Ra (Bq/L)	Ba (mg/L)	Fe (mg/L)	Mn (mg/L)	U (mg/L)
Field Blank Statistics									
Count	6	6	2	6	6	6	6	2	6
Average	6.62	2.28	<0.05	0.23	<0.005	0.000137	<0.007	0.00002	2.17E-06
Max	7.55	**10.7**	<0.05	**0.3**	<0.005	0.00030	<0.007	0.00003	0.000003
Min	4.85	<0.5	<0.05	<0.2	<0.005	<0.00008	<0.007	<0.00001	<0.000002
Field Blank Exceedances									
Criteria	--	1.0	1.0	0.2	0.01	0.01	0.04	0.004	0.001
# Exceedances	0	**1**	0	**2**	0	0	0	0	0

Table 3-1b 2025 SRWMP Field Precision Results Summary

	DOC (mg/L)	Hard (mg/L)	SO4 (mg/L)	Ra (Bq/L)	U (mg/L)	Ba (mg/L)	Fe (mg/L)	Mn (mg/L)
Field Precision Statistics								
Count	6	2	6	6	6	6	6	2
Average	2%	2%	**29%**	20%	3%	3%	5%	2%
Max	4%	3%	**165%**	**46%**	8%	5%	11%	4%
Min	0%	2%	0%	0%	0%	1%	0%	1%
Field Precision Exceedances								
Criteria	20%	20%	20%	20%	20%	20%	20%	20%
# Exceedances	0	0	**1**	**3**	0	0	0	0

Bold indicates an exceedance of the field precision criteria.

3.2 Annual Average Location Results Summary

Annual average concentrations of SRWMP parameters for 2025 in comparison to the Cycle 5 SOE (Minnow, 2021) receiving environment assessment criteria are provided in Table 3-2. Annual detailed location results and five-year summaries of annual average concentrations in comparison to assessment criteria are provided in Appendix V and VI, respectively.

Water quality throughout the Serpent River Watershed continues to meet and remain well below the assessment criteria established for the protection of aquatic life. Annual average concentrations for all parameters in 2025 were less than the assessment criteria at all locations and pH was within the assessment range (Appendix VI).

The annual average sulphate concentration at SR-08 (Nordic Lake Outlet) is elevated (143.0 mg/l) compared to other SRWMP stations. However, the sulphate benchmark for SRWMP sites is dependent on specific water hardness at the sample location (BC ENV 2020). Based on an annual average hardness of 174 mg/L in 2025 at SR-08, the resulting criterion for sulphate is 309 mg/L. In 2025, all sulphate results at SR-08 fell within BC ENV guidelines for the protection of aquatic life (BC ENV, 2020). Sulphate assessment criteria for individual stations and detailed results are included in Appendix V, as well as Tables S.1 and S.2 in Appendix S of the Cycle 5 SOE for the SRWMP, SAMP, and TOMP (Minnow, 2021).

The annual average manganese concentration at D-6 is higher compared to other SRWMP locations at 0.178 mg/L (Appendix VI). However, this is still well below the BC ENV chronic toxicity guideline of 0.8 mg/L for the protection of aquatic biota and lower than the previous two averages. No increase in manganese was observed downstream at D-5 where the annual average concentration was 0.018 mg/L. Previously, D-6 water quality was screened against the criteria set for lake-type stations. As outlined in the Cycle 6 Study Design (Minnow, 2024), D-6 will be assessed based on the benchmarks set for wetland stations moving forward.

Table 3-2 2025 SRWMP Location Annual Average Results Summary

Table 3-2 - Average Results Summary - 2025			Barium (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium mg/l
Assessment Criteria[1]										
Wetland/Stream Benchmark[2]			1		2.49	0.841	5.3	0.469	128-309	0.015
Lake Benchmark[3]			1		0.76	0.841	6.5	0.469	128-309	0.015
MDL[4]			0.005	0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Location		**# Samples Collected**								
Far Field:										
SR-01	Lake	1	0.0427	33.3	0.008	0.0034	7.0	0.016	24	0.00102
SR-08	Lake	4	0.0180	174	--	--	6.9	0.020	140	0.00083
Near Field:										
D-5	Lake	4	0.0550	20.0	0.052	0.0181	6.8	0.040	11	0.00077
D-6	Wetland/Stream	4	0.0154	55.7	0.200	0.1782	6.9	0.005	45	0.00006
DS-18	Wetland/Stream	4	0.0148	65.3	0.225	0.0116	7.0	0.088	50	0.00105
M-01	Wetland/Stream	4	0.0197	--	0.877	--	6.6	0.024	10	0.00203
Q-09	Lake	4	0.0755	--	--	--	6.6	0.046	44	0.00140
Q-20	Lake	1	0.0169	39.3	0.014	--	7.3	< 0.005	21	0.00009
SC-01	Lake	1	0.0112	30.5	0.090	--	6.8	0.006	24	0.00012
SR-06	Lake	2	0.1420	32.6	0.013	0.0188	7.0	0.047	20	0.00051
Reference:										
D-4	Lake	2	0.0110	9.1	0.034	0.0092	6.7	< 0.005	3.0	0.00001
SR-16	Wetland/Stream	4	0.0089	8.8	1.460	0.0574	5.6	< 0.005	0.6	0.00004
SR-17	Wetland/Stream	4	0.0181	10.0	0.982	0.0432	6.0	< 0.005	2	0.00005
SR-18	Lake	2	0.0437	--	0.046	0.0192	6.4	< 0.005	3.2	0.00005
SR-19	Lake	4	0.0217	--	0.436	0.0624	6.6	0.005	2.6	0.00005

Notes Below

Notes
[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)
[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6
[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.
[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)
Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021).
Parameters are hardness dependent.
Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).
Bold indicates exceedance of evaluation criteria value

Sulfate criteria of 128 mg/l
Sulfate criteria of 218 mg/l
Sulfate criteria of 309 mg/l

3.3 Five-Year Annual Average Trends at Key Locations

Figures 3-3a to 3-3c show five-year trends of annual average concentrations for the mine-related parameters sulphate, radium-226, and uranium at the following key locations:

- SR-01, Quirke Lake Outlet.
- SR-06, McCabe Lake Outlet.
- SR-08, Nordic Lake Outlet.
- DS-18, Halfmoon Lake Outlet.

Based on a review of five years of data, annual sulfate concentrations at all key lake outlets are well below the assessment criterion of 128-309 mg/L as established for each station. Annual concentrations have remained stable at all locations over the past five years (Figure 3-3a), with the exception of SR-08 (Nordic Lake Outlet) where a slight increase was observed in 2021; however, all results remained well below the assessment criterion of 309 mg/L. This data can be found in the SRWMP Annual Water Quality Report 2021 (RAL, DMI, 2022). DS-18, SR-06 and SR-08 all saw a slight decrease in 2023, but all returned to trend in 2024 and 2025.

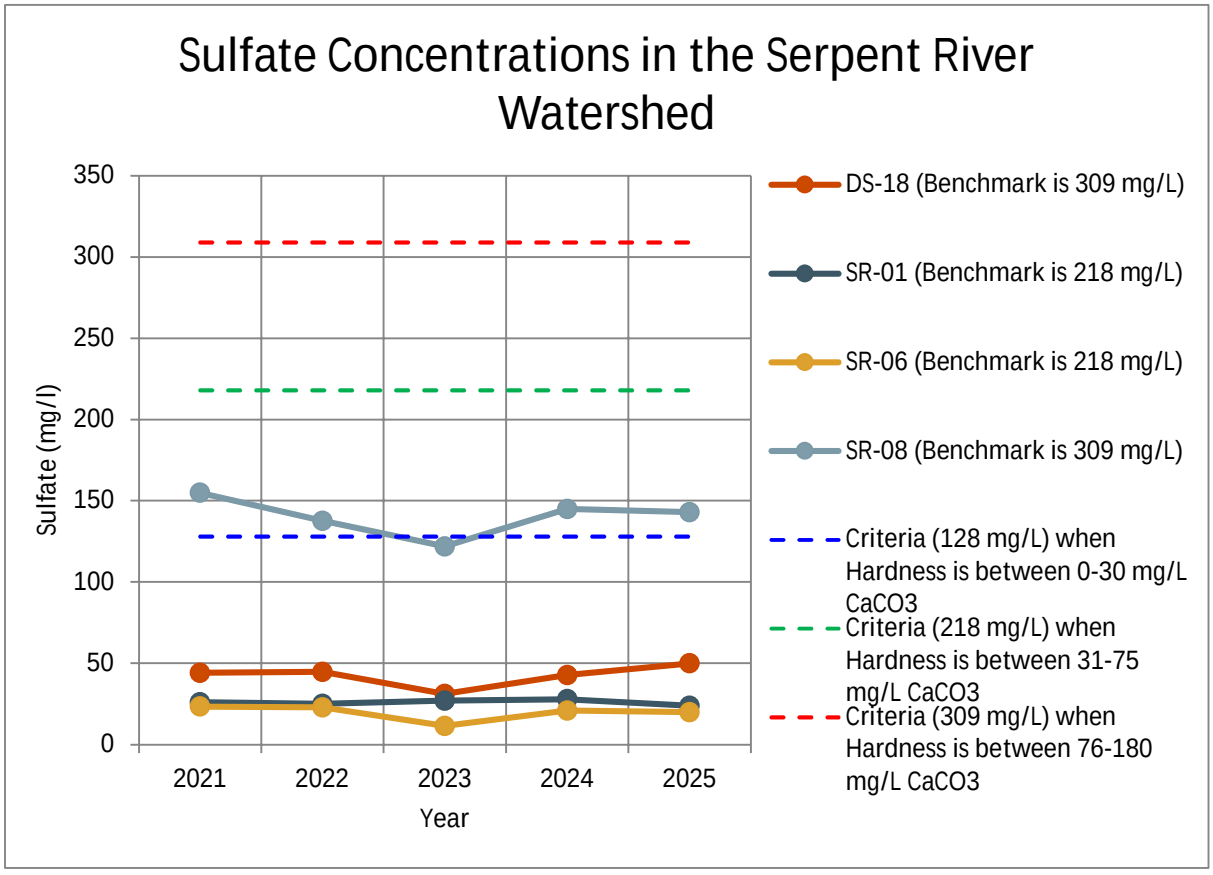

Figure 3-3a Annual Average Sulphate Concentrations at SR-01, SR-06, SR-08, and DS-18, 2021-2025

Annual average radium-226 concentrations are much lower than the assessment criterion of 0.469 Bq/L and appear to be stable or improving (Figure 3-3b).

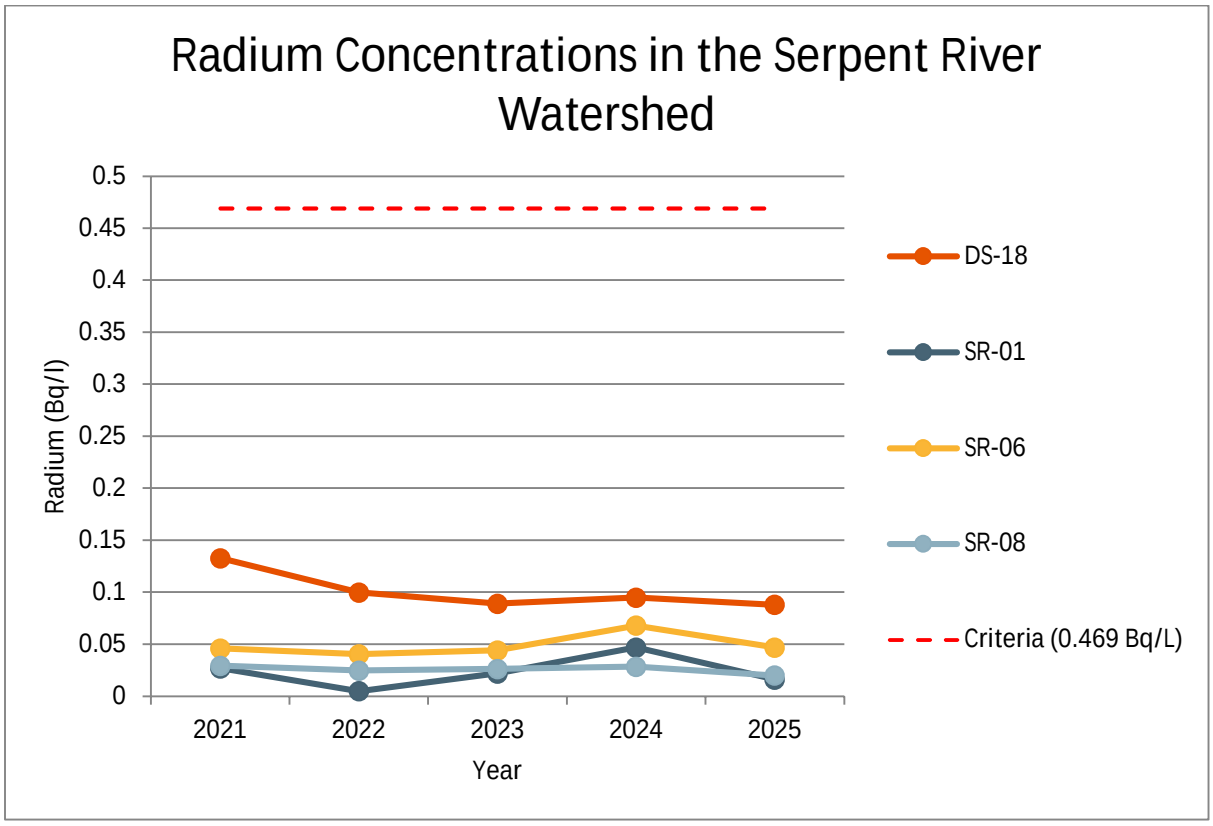

Figure 3-3b Annual Average Radium-226 Concentrations at SR-01, SR-06, SR-08, and DS-18, 2021-2025

Annual average uranium concentrations at all four key lake locations appear to be stable. All annual averages were more than an order of magnitude below the assessment criteria of 0.0150 mg/L (Figure 3-3c).

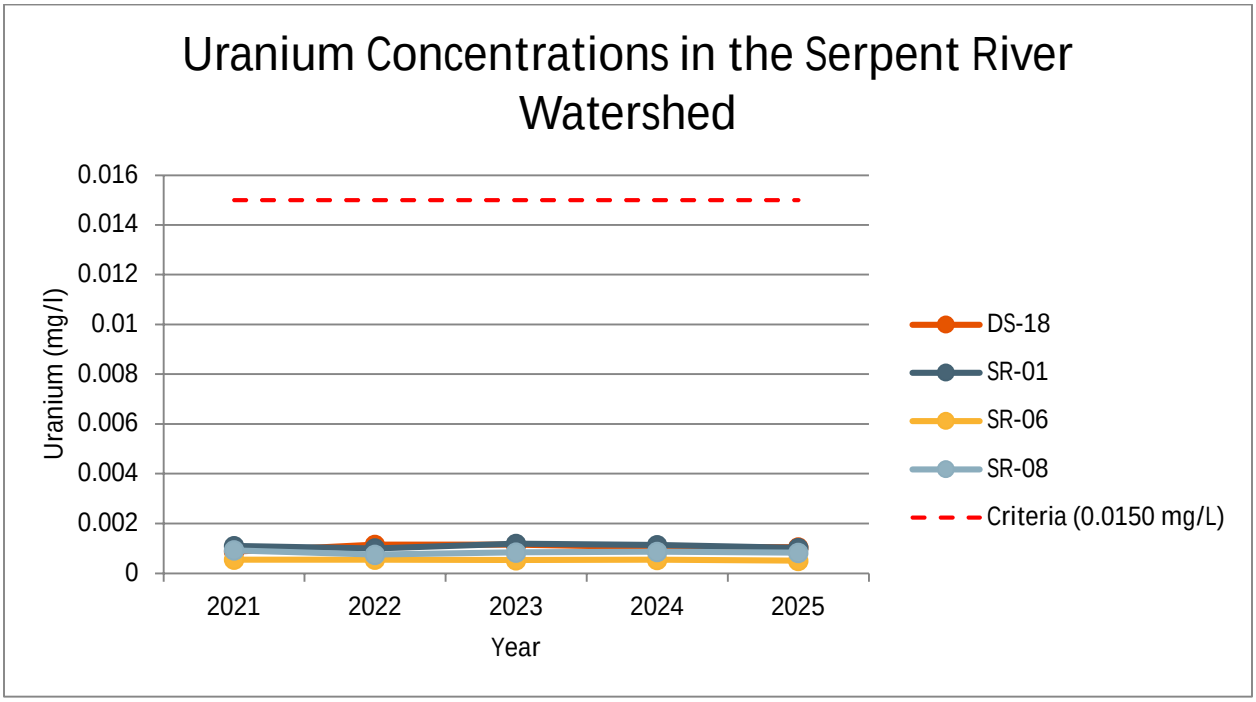

Figure 3-3c Annual Average Uranium Concentrations at SR-01, SR-06, SR-08, and DS-18, 2021-2025

4.0 Discussion

4.1 Response Monitoring

SRWMP surface water results demonstrate that water quality concentrations are stable, continue to meet assessment criteria, and that the area is continuing to recover since the decommissioning of the mines in the area.

4.2 SRWMP Performance Monitoring Program Changes

Station SR-15 was once again removed from the monitoring program as part of the Cycle 6 Study Design (Minnow, 2019) after being added back to the program in Cycle 5. Throughout this five-year reintroduction period, concentrations of all analytes at SR-15 as well as the upstream location SR-06 (receiver of Stanleigh ETP effluent) remained well within assessment criteria. For this reason, SR-15 is no longer included in this report. Station SR-06 continues to be monitored on a semi-annual basis.

The approved site-specific water quality benchmark for the protection of aquatic life for radium-226 of 0.469 Bq/L continues to be used to evaluate the SRW, as described in the Cycle 5 Study Design (Minnow, 2019).

As previously mentioned in Section 2.2, after review of the Cycle 5 Study Design (Minnow, 2019), the MECP recommended adding DOC to the SRWMP monitoring program. This was in anticipation of a new federal environmental water quality guideline for iron that was published in May 2024, which includes DOC and pH as toxicity modifiers. In addition, hardness continues to be monitored as an ancillary parameter at all SRWMP stations as it assists in the interpretation of water quality concentrations for manganese and sulphate, as discussed in the approved Cycle 4 Study Design for the SRWMP, SAMP and TOMP (BC ENV, 2020 and Minnow, 2016).

4.3 Changes to Location Classification and Frequency

As noted in the Cycle 5 SOE, station D-6 is located in a habitat more characteristic of a wetland area, not a lake. Under this classification, D-6 was assessed based on wetland benchmarks (Photo set S.1, Appendix S, Minnow, 2021).

4.4 Representative Public Radiation Dose Estimation

The CNSC requested that RAL and DMI provide annual reporting of the radiation dose to the public associated with the closed uranium mine sites in the Serpent River Watershed. Historically, estimates of the public dose had been based on the use of very conservative values to demonstrate that public dose in the vicinity of Elliot Lake did not exceed the upper dose limit. Measurements of radon and gamma radiation collected during mine operations resulted in dose estimates less than 5% of the annual public dose limit of 1 mSv/a.

However, to determine an updated and more realistic representative annual public dose estimation for a person residing in Elliot Lake, a design monitoring program to support public dose estimation was prepared in early 2016. Details of the design program were provided in the document Preliminary Design Monitoring Program to Support Public Dose Estimation (Ecometrix Incorporated (Ecometrix), 2016, 2017), which was included as an appendix in the SRWMP Annual Water Quality Report 2016 (RAL, DMI, 2017).

All components of the design monitoring program were completed in 2019, and it was concluded that the updated public dose is 0.01 mSv/a, two orders of magnitude lower than the regulatory public dose limit of 1 mSv/a. Details of the design monitoring program and the subsequent results are included in Appendix U of the Cycle 5 SOE (Minnow, 2021).

The public dose estimates will be reviewed, and if required, updated as part of the combined Cycle 6/7 SOE Report.

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Appendix I

Performance Monitoring Changes 1999 – 2025, Evolution of Programs

Table 1.2: Summary of Changes to the Elliot Lake Monitoring Programs (IBMP, TOMP, SAMP, and SRWMP) and Associated Documents

Cycle	Report Title	Year	Descriptions of Changes to the Monitoring Programs within Each Cycle
Cycle 1	Serpent River Watershed Monitoring Program Framework Document	1999	**IBMP, TOMP, SAMP, and SRWMP** were developed based on program objectives and existing monitoring data collected over the period of operations and decommissioning.
	In-Basin Monitoring Program Report	1999	
	Serpent River Watershed and In-Basin Monitoring Program – Implementation Document	1999	
	Serpent River Watershed Monitoring Program -1999 Study	2001	
	In-Basin Monitoring Program for the Uranium Tailings Areas - 1999 Study	2001	
Cycle 2	Overview of Elliot Lake Monitoring Programs and Source Area Monitoring Program Design	2002	**Changes only SRWMP** most associated with optimization after first cycle of program was complete: • monitoring substances reduced to mine indicator parameters (barium, cobalt, DOC, iron, manganese, radium-226, selenium, silver, sulphate and uranium); • addition of two lake reference stations (Summers and Semiwite lakes) and 3 stream reference areas (SR-16, SR-17 and SR-18); • removal of shallow lakes for sediment and benthic sampling (Westner, Grassy, Halfmoom, Upper Cinder and Horne lakes); • removal of some stream sediment and benthic stations (D-15, SC-03 and SR-07); • removal of Depot Lake and Serpent Harbour; addition of May Lake; • the transfer of some SRWMP stations to SAMP or TOMP (N-12, ECA-131, P-11, MPE and Q-23); and • fish health assessment eliminated based on performance, fish community assessment added for McCabe Lake and fish tissue monitoring reduced in scope based on performance.
	TMA Operational Monitoring Program Design (TOMP)	2002	
	Cycle 2 Study Design – Serpent River Watershed and In- Basin Monitoring Programs	2004	
	Serpent River Watershed Monitoring Program: Cycle 2 Interpretive Report	2005	
	Serpent River In-Basin Monitoring Program: Cycle 2 Interpretive Report - 2004 Study	2005	
	Serpent River Watershed State of the Environment	2009	
Cycle 3	Monitoring Framework For Closed Uranium Mines Near Elliot Lake	2009	**IBMP** eliminated based on objectives of program being achieved. **TOMP and SAMP:** • removal of silver, selenium based on performance and removal of conductivity based on redundancy with sulphate; and • DOC, hardness and flow added at selected stations. **SRWMP:** • removal of selenium and sliver based on performance; • removal of station SR-12, ELO, SR-09, SR-15, SR-02, SR-03, SR-11, P-01, QL-01 and SR-16 and SR-17 based on performance; • monthly monitoring frequency reduced to quarterly; • sediment and benthic monitoring removed from Whiskey, Evans and Cinder lakes based on redundancy; • depositional streams (Q-20, D-6, SR-06, M-01 and SR-08) based on very high natural variability masking results; and • fishing in McCabe Lake and fish tissue monitoring eliminated based on performance.
	In Basin Monitoring Program, Cycle 3 Study Design	2009	
	Serpent River Watershed Monitoring Program: Cycle 3 Study Design	2009	
	Source Area Monitoring Program Revised Study Design	2009	
	Tailing Management Area Monitoring Program (TOMP) Revised Study Design	2009	
	Serpent River Watershed State of the Environment Report	2011	
Cycle 4	Cycle 4 Study Design For the SRWMP, SAMP and TOMP	2014[a]	Minor changes to **TOMP** and **SAMP**. **SRWMP**: • elimination of reference stations SR-05, P-222 and SR-14; • removal of cobalt as substance for monitoring, addition of DOC; • far-field lakes removed from the program (Hough, Pecors, and McCarthy); • removal of Rochester Lake as a sediment and benthic reference area; and • reduction in benthic and sediment sampling to 1/10 years based on measured deposition rates.
	Serpent River Watershed Cycle 4 State of the Environment	2016	
Cycle 5	Cycle 5 Study Design For the SRWMP, SAMP and TOMP	2019	**TOMP, SAMP, and SRWMP**: • improved approach to trend analysis of surface water quality using the non-parametric seasonal Kendall test. **SRWMP**: • improved approach to calculate benchmark upper limit of background water quality values have previously been calculated based on the upper 95th percentile of values collect across all five years (rather than annual means); • use of a Serpent River Watershed site-specific dose-based radium-226 benchmark for assessment of water quality; • addition of a lake-specific dose-based radium-226 benchmark for assessment of sediment quality; and • sediment and benthic monitoring removed from Elliot Lake based on improvements in water quality, negligible mine-related sediment toxicity, and gradual improvement in benthic invertebrate communities.

Cycle 6	Cycle 6 Study Design For the SRWMP, SAMP and TOMP	2024	**TOMP, SAMP**: • no changes proposed **SRWMP**: • station D-6 will be assessed based on comparison to wetland benchmarks. • station SR-15 was removed from the program. • the SRWMP water quality benchmarks, hardness-based benchmarks will be calculated for each individual sample using the hardness of that sample rather than using the average hardness for that station over the study period. If hardness values are unavailable for a given sample, the lower 25th percentile of hardness value will be used to calculate a conservative estimate of the true hardness-based guideline. • transition the SOE water quality reporting to a 10-year cycle. The proposed modified schedule includes a Cycle 7 study design, inclusive of benthos/sediment monitoring and reporting requirements in 2029, and a combined Cycle 6/7 SOE Report in 2030.

[a] Study Design was submitted to CNSC and JRG in 2014 but reissued with agency comments in 2016.
Notes: IBMP = In Basin Monitoring Program. TOMP = Tailings Management Area Monitoring Program. SAMP = Source Area Monitoring Program. SRWMP = Serpent River Watershed Monitoring Program.

Appendix II

Flagged Data Results

Flagged Data Report Form

2025 Annual Report

Station	Analyte	Date	Low	High	Flag	Result	Unit	Comment
SR-19	Radium-226	2025-05-15	0.005	0.005	High	0.006	Bq/l	Result is slightly above the high flag threshold while remaining close to the detection limit for this analyte. No immediate is indicated at this time, and routine monitoring will continue to assess any potential changes.
M-01	Barium	2025-08-14	0.01062	0.0243	High	0.0289	mg/l	Result is slightly above 3-year high and was validated by the BSR5 (duplicate of M-01) result of 0.0286 mg/l. The subsequent sample and duplicate results returned to within normal range.
SR-19	Iron	2025-08-14	0	0.9205	High	1.03	mg/l	Result is a 3-year high with seasonal highs typically observed in July and August. The subsequent sample in November exhibited results within normal range.
SR-19	Manganese	2025-08-14	0	0.1495	High	0.162	mg/l	Result is a 3-year high with seasonal highs typically observed in July and August. The subsequent sample in November exhibited results within normal range.
SR-01	DOC	2025-08-20	2.83787	3.2621	Low	2.8	mg/l	Accept result and continue to monitor.
D-6	pH (Field)	2025-09-08	5.91082	7.2325	High	7.72	pH	Monitoring will continue quarterly.

Flagged Data Report Form

2025 Annual Report

Station	Analyte	Date	Low	High	Flag	Result	Unit	Comment
FBR5	DOC	2025-11-03	0.07566	1.0243	High	10.7	mg/l	Result is significantly higher than expected criteria of 1.0 mg/l and has been validated by a lab re-analysis result of 10.8 mg/l. This result will be considered an outlier until a trend can be observed. Subsequent field blank sampling events will be monitored closely.
D-6	pH (Field)	2025-11-04	5.91082	7.2325	High	7.24	pH	Monitoring will continue quarterly.

Appendix III

Laboratory QA/QC Results

REPORT CODE: *BHP-ANN25*

REPORT TITLE: *Annual 2025 BHP Data Quality Report*

REVISION: *1.0*

ISSUED BY:

Quality Coordinator,
SGS Environmental, Lakefield

AUTHORIZED BY:

Technical Manager,
SGS Environmental, Lakefield

DATE: *13 Feb. 2026*

Table of Contents

1. MANAGEMENT SYSTEM

SGS Environmental, Lakefield is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation (CALA), for specific tests listed in the scope of accreditation. ISO/IEC 17025 addresses both the management system and the technical aspects of operating a testing laboratory.

The management system at SGS Environmental consists of a documented quality system, which is directed by the Quality Coordinator who is independent of the production area. All appropriate documentation (quality manual, methods, written instructions, standard operating procedures, and data approval criteria) is in place and includes both general and method specific quality control requirements.

Quality control procedures include duplicate samples, spiked blanks, spiked replicates, reagent/instrument blanks, preparation control samples, certified reference material analysis, and instrument control samples, as appropriate for the individual methods. Matrix matching of reference materials to samples is always attempted. Frequency of insertion of control samples is method specific and follows legislated guidelines. A summary of the quality control recoveries is presented in the tables following.

2. QUALITY CONTROL PARAMETERS

All QC parameters are taken directly from SGS LIMS. BHP samples are processed as part of our “worksheet” batch system. A compilation of all QC data appropriate to the parameters tested has been compiled below.

3. NOTABLE OCCURANCES/ACTIONS

- Data compiled from January 2025 to December 2025
- SGS Environmental, Lakefield laboratory performed 24975 analyses with 9532 QC checks, which represents 38.2% QC for sample analysis. **Corrective Action**: N/A
- All blank data results were within the data quality objectives. **Corrective Action**: N/A
- All CRM/spike blank data results were within the data quality objectives. **Corrective Action**: N/A
- No duplicate value exceeded the data quality objectives. **Corrective Action:** N/A
- No spike duplicates fell outside of the data quality objectives. **Corrective Action**: N/A

4. QC DATA SUMMARY

4.1. Blank Data

Parameter	Unit	Required Limit	Number of Blanks	Mean Blank Result
Acidity	mg/L as CaCO3	2	78	1.9

Silver	mg/L	0.0001	140	<0.0001
Alkalinity	mg/L as CaCO3	2	38	2
Arsenic	mg/L	0.0005	141	<0.0005
Barium	mg/L	0.005	182	<0.005
Cobalt	mg/L	0.0005	146	<0.0005
Copper	mg/L	0.0005	140	<0.0005
DOC	mg/L	0.5	91	<0.5
Iron	mg/L	0.02	142	<0.02
Manganese	mg/L	0.002	151	<0.002
Nickel	mg/L	0.002	141	<0.002
Lead	mg/L	0.00002	141	<0.00002
Ra226	Bq/L	0.005	133	<0.005
Selenium	mg/L	0.0005	140	<0.0005
Sulphate	mg/L	0.1	152	<0.1
Total Dissolved Solids	mg/L	10	24	<10
Total Suspended Solids	mg/L	1	248	<1
Uranium	mg/L	0.0005	142	<0.0005
Zinc	mg/L	0.001	140	<0.001

4.2. Reference Material/Spiked Blank Data

Parameter	Unit	Number of RM or SB	% Recovery
Acidity	mg/L as CaCO3	78	102
Silver	mg/L	140	99
Alkalinity	mg/L as CaCO3	38	102
Arsenic	mg/L	141	101
Barium	mg/L	182	100
Cobalt	mg/L	146	99
Copper	mg/L	140	100
DOC	mg/L	91	99
Iron	mg/L	142	101
Manganese	mg/L	151	100
Nickel	mg/L	141	100
Lead	mg/L	141	99
Ra226	Bq/L	133	98
Selenium	mg/L	140	100
Sulphate	mg/L	152	100
Total Dissolved Solids	Mg/L	0	
Total Suspended Solids	mg/L	248	97

Uranium	mg/L	142	100
Zinc	mg/L	140	100

4.3. Duplicate Data

Parameter	Unit	RPD* Limit	Number of Duplicates	RPD*
Acidity	mg/L as CaCO3	20	78	ND
Silver	mg/L	20	140	ND
Alkalinity	mg/L as CaCO3	20	38	1.6
Arsenic	mg/L	20	141	5.3
Barium	mg/L	20	182	2.5
Cobalt	mg/L	20	146	5.2
Copper	mg/L	20	140	3.3
DOC	mg/L	20	91	6.3
Iron	mg/L	20	142	4.5
Manganese	mg/L	20	151	3.3
Nickel	mg/L	20	141	5.1
Lead	mg/L	20	141	4.5
Ra226	Bq/L	20	133	9.2
Selenium	mg/L	20	140	7.7
Sulphate	mg/L	20	152	1.8
Total Dissolved Solids	mg/L	20	24	1.5
Total Suspended Solids	mg/L	20	248	2.2
Uranium	mg/L	20	142	3.8
Zinc	mg/L	20	140	3.9

*RPD – Relative Percent Difference

ND – No Data, no detectable concentration of the parameter in the samples

4.4. Spike Duplicate Data

Parameter	Unit	Number of Spike Dups	Mean % Recovery
Silver	mg/L	140	83.4
Arsenic	mg/L	141	102
Barium	mg/L	182	98
Cobalt	mg/L	146	96
Copper	mg/L	140	97
DOC	mg/L	91	98
Iron	mg/L	142	102
Manganese	mg/L	151	100

Nickel	mg/L	141	94
Lead	mg/L	141	94
Selenium	mg/L	145	99
Sulphate	mg/L	40	98
Uranium	mg/L	131	96
Zinc	mg/L	157	100

4.5. QC Frequency

Total Number of Blanks:	2510
Total Number of Reference Materials/Spiked Blanks:	2486
Total Number of Duplicate Samples:	2510
Total Number of Spiked Duplicate Samples:	2026
Sum of QC Insertion:	**9532**
Total Analysis:	**24975**

Appendix IV

Field QA/QC Results

SRWMP Data Quality Reporting
Field Precision 2025

Location	Date	DOC mg/l	Hardness mg/l	Sulfate mg/l	Radium Bq/l	Uranium mg/l	Barium mg/l	Iron mg/l	Manganese mg/l
D-6	2025.05	4.2	17.7	11.0	< 0.005	0.00004	0.0107	0.103	0.0376
BSD2		4.2	17.4	10.0	0.008	0.00004	0.0106	0.092	0.0365
Variance		0%	2%	10%	**46%**	0%	1%	11%	3%
D-6	2025.11	4.8	43.8	36	< 0.005	0.000053	0.0133	0.156	0.0781
BSD2		4.6	42.4	3.5	< 0.005	0.000051	0.0128	0.147	0.0771
Variance		4%	3%	**165%**	0%	4%	4%	6%	1%
M-01	2025.02	5.3	--	14	0.031	0.00294	0.0175	0.744	--
BSR5		5.2	--	14	0.031	0.00271	0.0168	0.746	--
Variance		2%	--	0%	0%	8%	4%	0%	--
M-01	2025.05	5.0	--	10.0	0.012	0.00169	0.0180	0.327	--
BSR5		4.9	--	10.0	0.016	0.00165	0.0174	0.320	--
Variance		2%	--	0%	**29%**	2%	3%	2%	--
M-01	2025.08	6.9	--	4.8	0.038	0.00200	0.0289	2.07	--
BSR5		6.7	--	4.9	0.060	0.00194	0.0286	1.99	--
Variance		3%	--	2%	**45%**	3%	1%	4%	--
M-01	2025.11	6.6	--	9.4	0.015	0.00147	0.0144	0.365	--
BSR5		6.6	--	9.4	0.015	0.00150	0.0151	0.386	--
Variance		0%	--	0%	0%	2%	5%	6%	--
Count		6	2	6	6	6	6	6	2
Average		2%	2%	29%	20%	3%	3%	5%	2%
Max		4%	3%	165%	46%	8%	5%	11%	4%
Min		0%	2%	0%	0%	0%	1%	0%	1%
Criteria[1]		20%	20%	20%	20%	20%	20%	20%	20%
# Exceed.		0	0	1	3	0	0	0	0

1 Field Blank criteria as per Table 7.2, Cycle 6 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2024)
Bold indicates an exceedance in the field precision criteria

SRWMP Data Quality Reporting
Field Blanks 2025

		Barium	DOC	Hardness	Iron	Manganese	Radium	Sulfate	Uranium
		mg/l	mg/l	mg/l	mg/l	mg/l	Bq/l	mg/l	mg/l
Date	**Sample**								
2025-02-18	FBR5	0.00020	<0.5	--	<0.007	--	<0.005	**0.3**	0.000003
2025-05-07	FBD2	<0.00008	<0.5	<0.05	<0.007	0.00003	<0.005	<0.2	<0.000002
2025-05-15	FBR5	<0.00008	<0.5	--	<0.007	--	<0.005	**0.3**	<0.000002
2025-08-14	FBR5	<0.00008	1.0	--	<0.007	--	<0.005	<0.2	<0.000002
2025-11-03	FBR5	0.00030	**10.7**	--	<0.007	--	<0.005	<0.2	<0.000002
2025-11-04	FBD2	<0.00008	<0.5	<0.05	<0.007	<0.00001	<0.005	<0.2	0.000002
	Count	6	6	2	6	2	6	6	6
	Average	0.00014	**2.3**	<0.05	<0.007	0.00002	<0.005	0.2	0.000002
	Maximum	0.00030	**10.7**	<0.05	<0.007	0.00003	<0.005	**0.3**	0.000003
	Minimum	<0.00008	<0.5	<0.05	<0.007	<0.00001	<0.005	<0.2	<0.000002
	Criteria[1]	0.01	1	1	0.04	0.004	0.01	0.2	0.001
	Exceedances	0	1	0	0	0	0	**2**	0

1 Field Blank criteria as per Table 7.2, Cycle 6 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2024)
Bold indicates an exceedance in the Field Blank criteria

Appendix V

Location Results

D-4 Dunlop Lake Outlet

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
5/7/2025	0.0111	3.3	8.8	0.050	0.0101	**6.18**	< 0.005	2.8	0.000016
11/4/2025	0.0109	3.2	9.4	0.019	0.00838	7.18	< 0.005	3.1	0.000011
Count	2	2	2	2	2	2	2	2	2
High	0.0111	3.3	9.4	0.05	0.0101	7.18	< 0.005	3.1	0.000016
Low	0.0109	3.2	8.8	0.019	0.00838	6.18	< 0.005	2.8	0.000011
Mean	0.0110	3.2	9.1	0.034	0.00924	6.68	< 0.005	3.0	0.000014
High Limit	1	11	--	2.49	0.841	8.5	0.469	128	0.015
Low Limit	--	--	--	--	--	6.5	--	--	--
Lim Ex	0	0	--	0	0	1	0	0	0
Frequency	0%	0%	--	0%	0%	50%	0%	0%	0%
10x Lim Ex	0	0	--	0	0	0	0	0	0
Frequency (10x)	0%	0%	--	0%	0%	0%	0%	0%	0%

D-5

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
1/15/2025	0.0298	3.2	19.2	0.035	0.0167	6.51	0.030	9.7	0.000739
5/7/2025	0.0344	3.3	14.2	0.047	0.0118	**6.12**	0.024	6.7	0.000539
8/21/2025	0.107	3.2	24.4	0.079	0.0296	7.30	0.070	13	0.000872
11/4/2025	0.0490	3.5	22.2	0.047	0.0144	7.31	0.037	13	0.000912
Count	4	4	4	4	4	4	4	4	4
High	0.1070	3.5	24.4	0.079	0.0296	7.31	0.070	13	0.000912
Low	0.0298	3.2	14.2	0.035	0.0118	6.12	0.024	6.7	0.000539
Mean	0.0550	3.3	20.0	0.052	0.0181	6.81	0.040	11	0.000766
High Limit	1	11	--	2.49	0.841	8.5	0.469	128	0.015
Low Limit	--	--	--	--	--	6.5	--	--	--
Lim Ex	0	0	--	0	0	1	0	0	0
Frequency	0%	0%	--	0%	0%	25%	0%	0%	0%
10x Lim Ex	0	0	--	0	0	0	0	0	0
Frequency (10x)	0%	0%	--	0%	0%	0%	0%	0%	0%

D-6

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
1/15/2025	0.0131	4.6	20.4	0.089	0.0340	6.58	< 0.005	12	0.000031
5/7/2025	0.0107	4.2	17.7	0.103	0.0376	6.21	< 0.005	11	0.000040
9/8/2025	0.0244	3.2	141	0.450	0.563	7.72	< 0.005	120	0.000104
11/4/2025	0.0133	4.8	43.8	0.156	0.0781	7.24	< 0.005	36	0.000053
Count	4	4	4	4	4	4	4	4	4
High	0.0244	4.8	141	0.45	0.563	7.72	< 0.005	120	0.000104
Low	0.0107	3.2	17.7	0.089	0.034	6.21	< 0.005	11	0.000031
Mean	0.0154	4.2	55.7	0.20	0.178	6.94	< 0.005	45	0.000057
High Limit	1	11	--	2.49	0.841	8.5	0.469	218	0.015
Low Limit	--	--	--	--	--	5.3	--	--	--
Lim Ex	0	0	--	0	0	0	0	0	0
Frequency	0%	0%	--	0%	0%	0%	0%	0%	0%
10x Lim Ex	0	0	--	0	0	0	0	0	0
Frequency (10x)	0%	0%	--	0%	0%	0%	0%	0%	0%

DS-18

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
1/13/2025	0.0191	3.4	93.2	0.346	0.0205	6.87	0.178	68	0.00163
5/7/2025	0.0173	2.4	60.6	0.207	0.00810	6.87	0.062	50	0.000683
8/20/2025	0.0102	2.9	53.6	0.228	0.0133	7.1	0.053	35	0.000948
11/4/2025	0.0125	2.9	53.9	0.119	0.00462	7.36	0.059	37	0.000952
Count	4	4	4	4	4	4	4	4	4
High	0.0191	3.4	93.2	0.346	0.0205	7.36	0.178	68	0.00163
Low	0.0102	2.4	53.6	0.119	0.00462	6.87	0.053	35	0.000683
Mean	0.0148	2.9	65.3	0.225	0.0116	7.0	0.088	50	0.00105
High Limit	1	11	--	2.49	0.841	8.5	0.469	309	0.015
Low Limit	--	--	--	--	--	5.3	--	--	--
Lim Ex	0	0	--	0	0	0	0	0	0
Frequency	0%	0%	--	0%	0%	0%	0%	0%	0%
10x Lim Ex	0	0	--	0	0	0	0	0	0
Frequency (10x)	0%	0%	--	0%	0%	0%	0%	0%	0%

FBD2

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
5/7/2025	< 0.00008	< 0.5	< 0.05	< 0.007	0.00003	**4.85**	< 0.005	< 0.2	< 0.000002
11/4/2025	< 0.00008	< 0.5	< 0.05	< 0.007	< 0.00001	7.55	< 0.005	< 0.2	0.000002
Count	2	2	2	2	2	2	2	2	2
High	< 0.00008	< 0.5	< 0.05	< 0.007	0.00003	7.55	< 0.005	< 0.2	0.000002
Low	< 0.00008	< 0.5	< 0.05	< 0.007	0.00001	4.85	< 0.005	< 0.2	0.000002
Mean	< 0.00008	< 0.5	< 0.05	< 0.007	0.00002	6.20	< 0.005	< 0.2	0.000002
High Limit	1	11	--	2.49	0.841	8.5	0.469	218	0.015
Low Limit	--	--	--	--	--	5.3	--	--	--
Lim Ex	0	0	--	0	0	1	0	0	0
Frequency	0%	0%	--	0%	0%	50%	0%	0%	0%
10x Lim Ex	0	0	--	0	0	0	0	0	0
Frequency (10x)	0%	0%	--	0%	0%	0%	0%	0%	0%

M-01

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
2/18/2025	0.0175	5.3	--	0.744	--	6.6	0.031	14	0.00294
5/15/2025	0.0180	5.0	--	0.327	--	6.6	0.012	10	0.00169
8/14/2025	0.0289	6.9	--	2.07	**--**	6.6	0.038	4.8	0.00200
11/3/2025	0.0144	6.6	--	0.365	--	6.5	0.015	9.4	0.00147
Count	4	4	0	4	0	4	4	4	4
High	0.0289	6.9	--	2.07	--	6.6	0.038	14	0.00294
Low	0.0144	5	--	0.327	--	6.5	0.012	4.8	0.00147
Mean	0.0197	6.0	--	0.876	--	6.6	0.024	10	0.00202
High Limit	1	11	--	2.49	0.841	8.5	0.469	218	0.015
Low Limit	--	--	--	--	--	5.3	--	--	--
Lim Ex	0	0	--	0	--	0	0	0	0
Frequency	0%	0%	--	0%	--	0%	0%	0%	0%
10x Lim Ex	0	0	--	0	--	0	0	0	0
Frequency (10x)	0%	0%	--	0%	--	0%	0%	0%	0%

FBR5

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
2/18/2025	0.00020	< 0.5	--	< 0.007	--	7.4	< 0.005	0.3	0.000003
5/15/2025	< 0.00008	< 0.5	--	< 0.007	--	7.3	< 0.005	0.3	< 0.000002
8/14/2025	< 0.00008	1.0	--	< 0.007	--	6.1	< 0.005	< 0.2	< 0.000002
11/3/2025	0.00030	10.7	--	< 0.007	--	6.5	< 0.005	< 0.2	< 0.000002
Count	4	4	0	4	0	4	4	4	4
High	0.0003	10.7	--	< 0.007	--	7.4	< 0.005	0.3	0.000003
Low	0.00008	0.5	--	< 0.007	--	6.1	< 0.005	0.2	0.000002
Mean	0.0002	3	--	< 0.007	--	6.8	< 0.005	0.2	0.000002
High Limit	1	11	--	2.49	0.841	8.5	0.469	218	0.015
Low Limit	--	--	--	--	--	5.3	--	--	--
Lim Ex	0	0	--	0	--	0	0	0	0
Frequency	0%	0%	--	0%	--	0%	0%	0%	0%
10x Lim Ex	0	0	--	0	--	0	0	0	0
Frequency (10x)	0%	0%	--	0%	--	0%	0%	0%	0%

Q-09

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
2/20/2025	0.0710	--	--	--	--	6.7	0.044	58	0.00156
5/15/2025	0.0486	--	--	--	--	6.5	0.025	19	0.00122
8/14/2025	0.125	--	--	--	--	6.8	0.074	43	0.00131
11/3/2025	0.0575	--	--	--	--	**6.3**	0.039	54	0.00153
Count	4	0	0	0	0	4	4	4	4
High	0.125	--	--	--	--	6.8	0.074	58	0.00156
Low	0.0486	--	--	--	--	6.3	0.025	19	0.00122
Mean	0.0755	--	--	--	--	6.6	0.046	44	0.00140
High Limit	1	11	--	2.49	0.841	8.5	0.469	218	0.015
Low Limit	--	--	--	--	--	6.5	--	--	--
Lim Ex	0	--	--	--	--	1	0	0	0
Frequency	0%	--	--	--	--	25%	0%	0%	0%
10x Lim Ex	0	--	--	--	--	0	0	0	0
Frequency (10x)	0%	--	--	--	--	0%	0%	0%	0%

Q-20

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
11/4/2025	0.0169	2.5	39.3	0.014	--	7.3	< 0.005	21	0.000086
Count	1	1	1	1	0	1	1	1	1
High	0.0169	2.5	39.3	0.014	--	7.3	< 0.005	21	0.000086
Low	0.0169	2.5	39.3	0.014	--	7.3	< 0.005	21	0.000086
Mean	0.0169	2.5	39.3	0.014	--	7.3	< 0.005	21	0.000086
High Limit	1	11	--	2.49	0.841	8.5	0.469	218	0.015
Low Limit	--	--	--	--	--	6.5	--	--	--
Lim Ex	0	0	--	0	--	0	0	0	0
Frequency	0%	0%	--	0%	--	0%	0%	0%	0%
10x Lim Ex	0	0	--	0	--	0	0	0	0
Frequency (10x)	0%	0%	--	0%	--	0%	0%	0%	0%

SC-01

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
11/3/2025	0.0112	5.0	30.5	0.090	--	6.8	0.006	24	0.000124
Count	1	1	1	1	0	1	1	1	1
High	0.0112	5	30.5	0.09	--	6.8	0.006	24	0.000124
Low	0.0112	5	30.5	0.09	--	6.8	0.006	24	0.000124
Mean	0.0112	5.0	30.5	0.090	--	6.8	0.006	24	0.000124
High Limit	1	11	--	2.49	0.841	8.5	0.469	128	0.015
Low Limit	--	--	--	--	--	5.3	--	--	--
Lim Ex	0	0	--	0	--	0	0	0	0
Frequency	0%	0%	--	0%	--	0%	0%	0%	0%
10x Lim Ex	0	0	--	0	--	0	0	0	0
Frequency (10x)	0%	0%	--	0%	--	0%	0%	0%	0%

SR-01

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
8/20/2025	0.0427	2.8	33.3	0.008	0.00339	7.04	0.016	24	0.00102
Count	1	1	1	1	1	1	1	1	1
High	0.0427	2.8	33.3	0.008	0.00339	7.04	0.016	24	0.00102
Low	0.0427	2.8	33.3	0.008	0.00339	7.04	0.016	24	0.00102
Mean	0.0427	2.8	33.3	0.008	0.00339	7.04	0.016	24	0.00102
High Limit	1	11	--	2.49	0.841	8.5	0.469	218	0.015
Low Limit	--	--	--	--	--	6.5	--	--	--
Lim Ex	0	0	--	0	0	0	0	0	0
Frequency	0%	0%	--	0%	0%	0%	0%	0%	0%
10x Lim Ex	0	0	--	0	0	0	0	0	0
Frequency (10x)	0%	0%	--	0%	0%	0%	0%	0%	0%

SR-06 McCabe Lake Outlet

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
5/27/2025	0.115	3.4	31.3	0.016	0.0134	6.9	0.042	20	0.000500
11/4/2025	0.168	3.3	34.0	0.010	0.0241	7.2	0.052	22	0.000520
Count	2	2	2	2	2	2	2	2	2
High	0.168	3.4	34	0.016	0.0241	7.2	0.052	22	0.00052
Low	0.115	3.3	31.3	0.01	0.0134	6.9	0.042	20	0.0005
Mean	0.142	3.4	32.6	0.013	0.0188	7.0	0.047	20	0.000510
High Limit	1	11	--	2.49	0.841	8.5	0.469	218	0.015
Low Limit	--	--	--	--	--	6.5	--	--	--
Lim Ex	0	0	--	0	0	0	0	0	0
Frequency	0%	0%	--	0%	0%	0%	0%	0%	0%
10x Lim Ex	0	0	--	0	0	0	0	0	0
Frequency (10x)	0%	0%	--	0%	0%	0%	0%	0%	0%

SR-08

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
2/20/2025	0.0197	4.3	206	--	--	7.0	0.030	170	0.000919
5/15/2025	0.0149	3.7	141	--	--	7.1	0.014	120	0.000785
8/14/2025	0.0181	4.3	161	--	--	7.0	0.008	130	0.000719
11/3/2025	0.0193	4.1	188	--	--	6.6	0.018	150	0.000901
Count	4	4	4	0	0	4	4	4	4
High	0.0197	4.3	206	--	--	7.1	0.03	170	0.000919
Low	0.0149	3.7	141	--	--	6.6	0.008	120	0.000719
Mean	0.0180	4.1	174	--	--	6.9	0.02	140	0.000831
High Limit	1	11	--	2.49	0.841	8.5	0.469	309	0.015
Low Limit	--	--	--	--	--	6.5	--	--	--
Lim Ex	0	0	--	--	--	0	0	0	0
Frequency	0%	0%	--	--	--	0%	0%	0%	0%
10x Lim Ex	0	0	--	--	--	0	0	0	0
Frequency (10x)	0%	0%	--	--	--	0%	0%	0%	0%

SR-16

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
2/20/2025	0.0124	**16.2**	12.6	2.24	0.0931	5.8	< 0.005	0.8	0.000045
5/15/2025	0.00574	9.4	5.4	0.462	0.0205	5.7	< 0.005	0.9	0.000030
8/14/2025	0.0106	**15.8**	9.6	2.37	0.0716	**5.2**	< 0.005	0.3	0.000051
11/3/2025	0.00701	**20.0**	7.7	0.761	0.0445	5.7	< 0.005	0.5	0.000033
Count	4	4	4	4	4	4	4	4	4
High	0.0124	20	12.6	2.37	0.0931	5.8	< 0.005	0.9	0.000051
Low	0.00574	9.4	5.4	0.462	0.0205	5.2	< 0.005	0.3	0.00003
Mean	0.00894	15	8.8	1.46	0.0574	5.6	< 0.005	0.6	0.000040
High Limit	1	11	--	2.49	0.841	8.5	0.469	128	0.015
Low Limit	--	--	--	--	--	5.3	--	--	--
Lim Ex	0	3	--	0	0	1	0	0	0
Frequency	0%	25%	--	0%	0%	25%	0%	0%	0%
10x Lim Ex	0	0	--	0	0	0	0	0	0
Frequency (10x)	0%	0%	--	0%	0%	0%	0%	0%	0%

SR-17

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
2/20/2025	0.0183	7.1	12.4	0.680	0.0460	6.1	< 0.005	2.7	0.000060
5/15/2025	0.0186	8.7	9.3	0.696	0.0361	6.2	< 0.005	2.7	0.000047
8/14/2025	0.0216	**12.8**	11.4	2.10	0.0697	5.5	< 0.005	0.8	0.000050
11/3/2025	0.0140	**12.0**	8.3	0.452	0.0208	6.1	< 0.005	2.0	0.000041
Count	4	4	4	4	4	4	4	4	4
High	0.0216	12.8	12.4	2.1	0.0697	6.2	< 0.005	2.7	0.00006
Low	0.014	7.1	8.3	0.452	0.0208	5.5	< 0.005	0.8	0.000041
Mean	0.0181	10	10	0.982	0.0432	6.0	< 0.005	2	0.000050
High Limit	1	11	--	2.49	0.841	8.5	0.469	128	0.015
Low Limit	--	--	--	--	--	5.3	--	--	--
Lim Ex	0	2	--	0	0	0	0	0	0
Frequency	0%	25%	--	0%	0%	0%	0%	0%	0%
10x Lim Ex	0	0	--	0	0	0	0	0	0
Frequency (10x)	0%	0%	--	0%	0%	0%	0%	0%	0%

SR-18 Outlet of Jim Christ Lake

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
5/15/2025	0.0422	5.3	--	0.047	0.0126	**6.3**	< 0.005	3.2	0.000050
11/3/2025	0.0452	6.1	--	0.044	0.0258	6.6	< 0.005	3.1	0.000057
Count	2	2	0	2	2	2	2	2	2
High	0.0452	6.1	--	0.047	0.0258	6.6	< 0.005	3.2	0.000057
Low	0.0422	5.3	--	0.044	0.0126	6.3	< 0.005	3.1	0.00005
Mean	0.0437	5.7	--	0.046	0.0192	6.4	< 0.005	3.2	0.000054
High Limit	1	11	--	2.49	0.841	8.5	0.469	128	0.015
Low Limit	--	--	--	--	--	6.5	--	--	--
Lim Ex	0	0	--	0	0	1	0	0	0
Frequency	0%	0%	--	0%	0%	50%	0%	0%	0%
10x Lim Ex	0	0	--	0	0	0	0	0	0
Frequency (10x)	0%	0%	--	0%	0%	0%	0%	0%	0%

SR-19 Inlet to Elliot Lake

Sample Date	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
2/20/2025	0.0213	5.2	--	0.258	0.0206	6.9	< 0.005	3.0	0.000053
5/15/2025	0.0186	4.3	--	0.148	0.0273	6.5	0.006	2.8	0.000044
8/14/2025	0.0271	5.2	--	1.03	0.162	6.7	< 0.005	2.3	0.000062
11/3/2025	0.0199	6.7	--	0.308	0.0396	**6.1**	< 0.005	2.4	0.000050
Count	4	4	0	4	4	4	4	4	4
High	0.0271	6.7	--	1.03	0.162	6.9	0.006	3	0.000062
Low	0.0186	4.3	--	0.148	0.0206	6.1	0.005	2.3	0.000044
Mean	0.0217	5.4	--	0.436	0.0624	6.6	0.005	2.6	0.000052
High Limit	1	11	--	2.49	0.841	8.5	0.469	128	0.015
Low Limit	--	--	--	--	--	6.5	--	--	--
Lim Ex	0	0	--	0	0	1	0	0	0
Frequency	0%	0%	--	0%	0%	25%	0%	0%	0%
10x Lim Ex	0	0	--	0	0	0	0	0	0
Frequency (10x)	0%	0%	--	0%	0%	0%	0%	0%	0%

Appendix VI

Five Year Annual Average Location Results

D-5	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	128	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	128	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.0680	--	20.9	0.076	0.0200	6.9	0.050	9.8	0.001000
2022	0.0720	4	29.5	0.100	0.0320	6.8	0.060	16	0.001000
2023	0.0845	3.8	26.0	0.092	0.0280	6.6	0.070	16	0.001400
2024	0.0594	--	21.7	0.067	0.0239	6.5	0.070	12	0.000895
2025	0.0550	3.3	20.0	0.052	0.0181	6.8	0.040	11	0.000766

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

D-6	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	218	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	218	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.0140	--	37.2	0.200	0.099	6.8	0.008	28	< 0.0005
2022	0.0130	4.4	38.2	0.164	0.100	6.6	< 0.005	28	0.000400
2023	0.0181	4.7	100	0.360	0.298	6.6	0.006	82	0.000120
2024	0.0176	--	101.2	0.170	0.290	6.6	0.009	70	0.000077
2025	0.0142	4.2	55.7	0.170	0.178	7.0	0.006	30	0.000053

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

BSD2	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	218	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	218	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.0130	--	39.2	0.170	0.098	6.8	0.006	33	< 0.0005
2022	0.0149	3.9	58.7	0.213	0.116	6.6	< 0.005	43	< 0.0005
2023	0.0190	3.9	114.7	0.400	0.340	6.7	0.008	94	< 0.0005
2024	0.0140	4.2	50.2	0.130	0.069	6.7	0.014	39	< 0.0005
2025	0.0117	4.4	29.9	0.120	0.057	7.2	0.007	6.8	< 0.0005

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

FBD2	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	218	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	218	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	< 0.005	--	< 0.5	< 0.02	< 0.002	5.7	< 0.005	< 0.2	< 0.0005
2022	0.00020	< 0.5	< 0.05	< 0.02	0.003	6	< 0.005	< 0.2	< 0.0005
2023	0.00020	--	0.10	< 0.007	0.0001	6.2	< 0.005	< 0.2	0.000002
2024	< 0.00008	--	< 0.05	0.009	0.00001	5.4	< 0.005	< 0.2	0.000010
2025	< 0.00008	< 0.5	< 0.05	< 0.007	0.00002	6.20	< 0.005	< 0.2	0.000002

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

Q-20	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	218	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	218	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.0180	2.7	35.4	< 0.02	--	7	< 0.005	18	< 0.0005
2022	0.0174	2.8	37.2	0.032	--	7	< 0.005	18	0.0003
2023	0.0185	2.6	39.7	0.024	--	7.1	< 0.005	20	0.000031
2024	0.0181	2.4	40.2	0.009	--	7.3	< 0.005	21	0.000039
2025	0.0169	2.5	39.3	0.014	--	7.3	< 0.005	21	0.000086

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

SR-06	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	218	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	218	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.138	3.2	36.1	0.020	0.0200	7.0	0.050	24	0.000600
2022	0.124	3.1	35.0	0.030	0.0180	6.7	0.040	23	0.000600
2023	0.147	3.2	35.5	0.160	0.0302	**6.4**	0.044	12	0.000523
2024	0.128	3.0	31.7	0.010	0.0145	7.2	0.068	21	0.000545
2025	0.142	3.4	32.6	0.013	0.0188	7.0	0.047	20	0.000510

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

SR-19	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	128	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	128	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.0200	5.5	--	0.394	0.0560	7.0	0.007	2.5	< 0.0005
2022	0.0230	5.5	--	0.440	0.0570	7.0	< 0.005	2.7	< 0.0005
2023	0.0232	5.5	--	0.377	0.0530	6.6	< 0.005	3.0	0.000300
2024	0.0198	5.3	--	0.295	0.0365	6.9	< 0.005	2.6	0.000053
2025	0.0217	5.4	--	0.436	0.0624	6.6	0.005	2.6	0.000052

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

DS-18	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	309	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	309	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.027	--	58.4	0.16	0.01	7	0.13	44	0.0009
2022	0.019	2.6	63.4	0.172	0.01	7	0.100	46	0.001
2023	0.0171	2.2	65.6	0.196	0.017	6.7	0.089	31	0.0012
2024	0.0142	--	63.2	0.258	0.0147	7.0	0.095	43	0.00105
2025	0.0148	2.9	65.3	0.225	0.0116	7.0	0.088	50	0.00105

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

D-4	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	128	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	128	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.0110	--	9.0	0.02	0.008	7	0.005	2.9	< 0.0005
2022	0.0115	3.0	9.6	0.048	0.017	6.7	< 0.005	2.9	0.0002
2023	0.0111	--	9.0	0.043	0.0210	6.4	< 0.005	2.9	0.000023
2024	0.0108	--	9.1	0.022	0.0162	6.6	< 0.005	2.8	0.000012
2025	0.0110	3.3	9.1	0.034	0.00924	6.68	< 0.005	3.0	0.000014

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

Q-09	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	218	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	218	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.0800	--	--	--	--	6.8	0.073	46	0.00160
2022	0.0770	--	--	--	--	6.6	0.067	66	0.00200
2023	0.1290	--	--	--	--	6.8	0.084	80	0.00233
2024	0.0690	--	--	--	--	6.8	0.084	58	0.00167
2025	0.0755	--	--	--	--	6.6	0.046	44	0.00140

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

SC-01	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	128	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	128	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.0110	4.5	30.1	0.134	--	7.0	0.015	18	< 0.0005
2022	0.0140	7.8	37.7	0.169	--	6.6	0.014	26	< 0.0005
2023	0.0138	11.7	34.8	0.404	--	7.4	0.026	27	0.000211
2024	0.0123	7.5	34.1	0.242	--	7.0	0.018	25	0.000136
2025	0.0112	5.0	30.5	0.090	--	6.8	0.006	24	0.000124

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

SR-08	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	309	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	309	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.0190	5.3	190	--	--	7.1	0.030	155	0.000900
2022	0.0180	4.1	161	--	--	6.8	0.025	140	0.000800
2023	0.0170	4.3	149	--	--	6.9	0.026	120	0.000800
2024	0.0174	4.2	180	--	--	6.7	0.028	145	0.000866
2025	0.0180	4.1	174	--	--	6.9	0.020	143	0.000831

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

SR-16	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	128	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	128	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.00700	13.3	7	0.938	0.040	6.0	< 0.006	0.6	< 0.0005
2022	0.00700	13.2	8.3	0.913	0.037	5.7	0.006	0.5	< 0.0005
2023	0.01050	15.9	10	1.34	0.110	6.1	< 0.005	2.0	0.000300
2024	0.00616	14.8	7.4	0.937	0.039	6.0	0.008	0.9	0.000037
2025	0.00894	15.4	8.8	1.46	0.057	5.6	< 0.005	0.6	0.000040

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

SR-17	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	128	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	128	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.0160	8.7	9.0	0.97	0.057	6.1	0.007	2	< 0.0005
2022	0.0200	8.7	11	1.01	0.060	6.1	< 0.005	2	< 0.0005
2023	0.0218	8.7	13.0	1.25	0.058	6.2	0.005	2	0.0002
2024	0.0178	11.2	11.0	1.52	0.0629	6.0	0.006	2	0.000042
2025	0.0181	10.2	10.0	0.98	0.0432	6.0	< 0.005	2	0.000050

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

SR-18	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	128	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	128	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.046	5.1	--	0.067	0.04	6.8	0.006	3.5	< 0.0005
2022	0.0812	11.8	--	0.25	0.015	7	< 0.005	4.2	0.0003
2023	0.0440	5.5	--	0.049	0.016	7.0	< 0.005	3.3	0.0003
2024	0.0442	5.4	--	0.086	0.0299	6.9	< 0.005	3.2	0.000056
2025	0.0437	5.7	--	0.046	0.0192	6.4	< 0.005	3.2	0.000054

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

SR-01	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	218	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	218	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.041	--	28.9	< 0.02	0.003	6.9	0.027	26	0.0011
2022	0.0422	3.1	37.8	< 0.02	0.005	**6.4**	< 0.005	25	0.0010
2023	0.0434	--	35.6	< 0.007	0.00238	7.48	0.022	27	0.00119
2024	0.0446	--	35.7	< 0.007	0.00267	6.8	0.047	28	0.00114
2025	0.0427	2.8	33.3	0.008	0.00339	7.04	0.016	24	0.00102

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

M-01	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	218	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	218	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.0160	5.1	--	0.920	--	6.6	0.030	8.1	0.0021
2022	0.0160	6.4	--	0.951	--	6.6	0.019	9.5	0.0030
2023	0.0166	5.8	--	0.575	--	6.8	0.010	11	0.0021
2024	0.0183	5.5	--	0.728	--	6.8	0.020	10	0.00210
2025	0.0197	6.0	--	0.877	--	6.6	0.024	9.6	0.00203

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

BSR5	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	218	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	218	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	0.0140	4.6	--	0.472	--	6.6	0.018	8.3	0.00200
2022	0.0141	6.0	--	0.576	--	6.6	0.016	10	0.00260
2023	0.0161	5.6	--	0.528	--	7.2	0.015	7.3	0.00190
2024	0.0185	5.4	--	0.772	--	--	0.010	10	0.00216
2025	0.0195	5.9	--	0.861	--	--	0.031	9.6	0.00195

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

FBR5	Barium (mg/l)	DOC (mg/l)	Hardness (mg/l)	Iron (mg/l)	Manganese (mg/l)	pH (Field) (pH)	Radium (Bq/l)	Sulfate (mg/l)	Uranium (mg/l)
Assessment Criteria[1]									
Wetland Benchmark[2]	1			2.49	0.841	5.3	0.469	218	0.015
Lake Benchmark[3]	1			0.76	0.841	6.5	0.469	218	0.015
MDL[4]	0.005		0.05	0.02	0.002	0.1	0.005	0.1	0.0005
Year									
2021	< 0.005	< 0.5	--	< 0.02	--	6.0	< 0.006	< 0.1	< 0.0005
2022	< 0.00008	< 0.5	--	< 0.02	--	6.0	< 0.005	< 0.1	< 0.0005
2023	< 0.00008	< 0.5	--	0.009	--	6.3	0.006	< 0.2	0.000006
2024	0.00008	0.5	--	0.010	--	6.9	< 0.005	< 0.2	0.000005
2025	0.00020	3.2	--	< 0.007	--	6.8	< 0.005	0.2	0.000002

Notes

[1] Assessment criteria as per Table S.1, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021)

[2] Benchmark applies to wetland stations: M-01, DS-18, SC-01, D-6.

[3] Benchmark applies to lake stations: D-5, Q-09, Q-20, SR-01, SR-06, SR-08.

[4] Method Detection Limits as per Table 6.2, Cycle 5 Study Design for the SRWMP, SAMP and TOMP (Minnow, 2019)

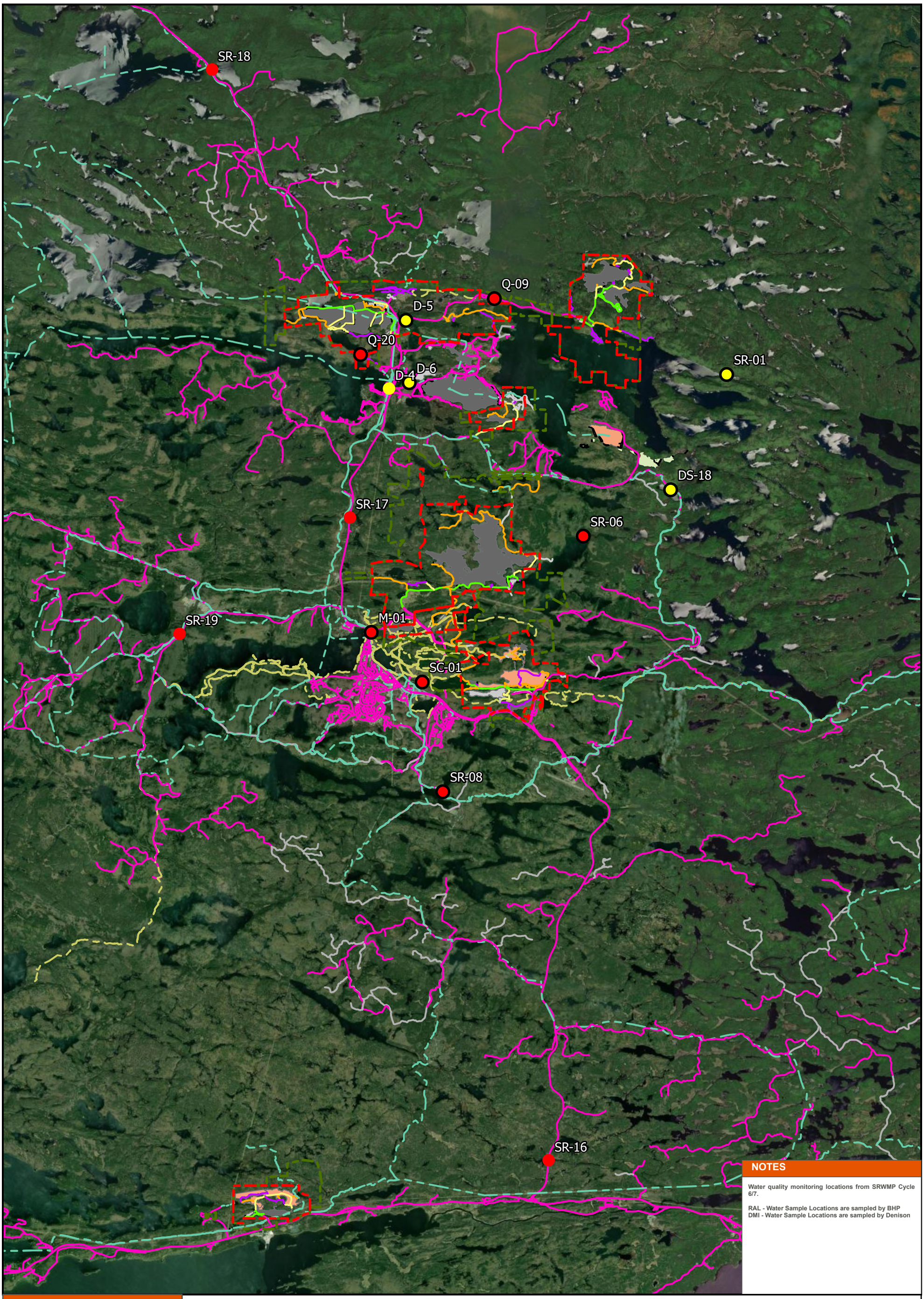
Sulphate and manganese criteria taken from Table S.2, Appendix S, Cycle 5 State of the Environment Report for the SRWMP, SAMP and TOMP (Minnow, 2021). Parameters are hardness dependent.

Variation in number of significant figures reflect MDL's at the time of reporting. In 2006, laboratory reported MDL's were standardized to achieve consistency and meet program requirements, as per Cycle 2 Interpretive Report (Minnow 2005).

Bold indicates exceedance of evaluation criteria value

Appendix VII

Water Quality Monitoring Locations Map



NOTES

Water quality monitoring locations from SRWMP Cycle 6/7.

RAL - Water Sample Locations are sampled by BHP
DMI - Water Sample Locations are sampled by Denison

Eliot lake - Serpent River Watershed Monitoring Program: Cycle 6/7

- CNSC License Boundary
- Unlicensed Property Boundary
- Public Motorized Trails
- Public Non-Motorized Trails
- FMP Road
- Public Road
- Private Main Access Road
- Private Secondary Access Road
- Private Seasonal Access Road
- Private Trail
- Private Unknown Access Road
- Vegetated Tailings
- Water Covered Tailings
- Settling Pond
- Dam
- RAL - Water Sample Location (Exposure)
- RAL - Water Sample Location (Reference)
- DMI - Water Sample Location (Exposure)
- DMI - Water Sample Location (Reference)

Author: Lenny Yu
Checked by:
Date Printed: 2026-01-07
Expiry Date:

1:130,000

0 0.5 1 2 3 4 Kilometers

CONFIDENTIAL

Sheet No.: 1 of 1

Revision: 25.00.01

Service Layer World Imagery: Earthstar Geographics
Document Name: SRWMP_Cycle 6-7

Coordinate System: NAD 1983 CSRS UTM Zone 17N
Datum: North American 1983 CSRS
Units: Meter

BHP