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Conservation and Parks**  
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**Ministère de l'Environnement, de la  
Protection de la nature et des Parcs**  
District de Sudbury  
Bureau du Secteur de Sault Ste. Marie  
70, promenade Foster  
Bureau 110  
Sault Ste. Marie ON P6A 6V4  
Tél. : 705 942-6354  
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February 5, 2021

Donna Brunke, Clerk  
The Corporation of the Town of Bruce Mines  
9126 Highway 17, Post Office Box Delivery, 220  
Bruce Mines, Ontario P0R 1C0

**RE: Bruce Mines Drinking Water System Inspection Report # 1-OEWQQ**

Dear Ms. Brunke:

Please find attached the Ministry of the Environment, Conservation and Parks (MECP) final inspection report for the December 3, 2020 inspection of the Bruce Mines Drinking Water System (#210000933). The primary purpose of this inspection was to confirm compliance with MECP legislation and control documents, as well as conformance with MECP drinking water related policies and guidelines during the inspection review period.

Please find attached a copy of the inspection report, and a copy of the Inspection Summary Rating Record (IRR) based on the inspection and the information submitted by the Ontario Clean Water Agency (OCWA). The inspection found no issues of non-compliance which require action.

If you have any questions regarding the inspection report please contact me at any time.

Yours truly,

A handwritten signature in black ink that reads "S Robbins".

Stephanie Robbins  
Water Inspector – Provincial Officer Badge #1720  
Ministry of the Environment, Conservation and Parks

cc: Algoma Public Health Unit  
Ministry of Natural Resources and Forestry  
OCWA



**Ministry of the Environment, Conservation and Parks**

**BRUCE MINES DRINKING WATER SYSTEM  
Inspection Report**

<b>Site Number:</b>	210000933
<b>Inspection Number:</b>	1-OEWQQ
<b>Date of Inspection:</b>	Dec 03, 2020
<b>Inspected By:</b>	Stephanie Robbins

## OWNER INFORMATION:

<b>Company Name:</b>	BRUCE MINES, THE CORPORATION OF THE TOWN OF	<b>Unit Identifier:</b>	
<b>Street Number:</b>	9127		
<b>Street Name:</b>	HIGHWAY 17 Hwy E		
<b>City:</b>	BRUCE MINES		
<b>Province:</b>	ON	<b>Postal Code:</b>	P0R 1C0

## CONTACT INFORMATION

<b>Type:</b>	Owner	<b>Name:</b>	Donna Brunke
<b>Phone:</b>	(705) 785-3493	<b>Fax:</b>	(705) 785-3170
<b>Email:</b>	dbrunke@bellnet.ca		
<b>Title:</b>	Clerk		

<b>Type:</b>	Operating Authority	<b>Name:</b>	Sarah Beaulieu
<b>Phone:</b>	(705) 862-0493	<b>Fax:</b>	
<b>Email:</b>	sbeaulieu@ocwa.com		
<b>Title:</b>	Process & Compliance Technician		

<b>Type:</b>	Operating Authority	<b>Name:</b>	Ryan Harmar
<b>Phone:</b>	(705) 862-2503	<b>Fax:</b>	
<b>Email:</b>	rharmar@ocwa.com		
<b>Title:</b>	Operator		

## INSPECTION DETAILS:

<b>Site Name:</b>	BRUCE MINES DRINKING WATER SYSTEM
<b>Site Address:</b>	75 BRUCE BAY Road BRUCE MINES ON P0R 1C0
<b>County/District:</b>	BRUCE MINES
<b>MECP District/Area Office:</b>	Sault Ste. Marie Area Office
<b>Health Unit:</b>	ALGOMA PUBLIC HEALTH
<b>Conservation Authority:</b>	
<b>MNR Office:</b>	
<b>Category:</b>	Large Municipal Residential
<b>Site Number:</b>	210000933
<b>Inspection Type:</b>	Unannounced
<b>Inspection Number:</b>	1-OEWQQ
<b>Date of Inspection:</b>	Dec 03, 2020
<b>Date of Previous Inspection:</b>	Nov 28, 2019

## COMPONENTS DESCRIPTION

<b>Site (Name):</b>	MOE DWS Mapping	<b>Sub Type:</b>	
<b>Type:</b>	DWS Mapping Point		

**Site (Name):** RAW WATER

**Type:** Source

**Sub Type:**

**Comments:**

The raw water source for the Bruce Mines WTP is the St. Joseph's Channel of Lake Huron. The intake is a 300 mm gravity line approximately 366 meters off shore in 7 metres of water.

**Site (Name):** TREATED WATER

**Type:** Treated Water POE

**Sub Type:**

**Comments:**

The treatment plant was upgraded in 2003 with a PALL membrane filtration system. Two submersible low lift pumps supply raw water to two parallel micro filtration units. Each filtration unit is equipped with a 0.1 micron pore size fibre membrane, and is rated for a gross production of 10 L/s. Turbidity meters monitor the discharge from each filter train. Compressed air and sodium hypochlorite are used for the frequent cleaning of the membranes. Sodium hydroxide, sodium hypochlorite and citric acid are used for periodic deep cleaning. Waste from the deep cleaning process is directed to the municipal sanitary system, while backwash water is discharged to Lake Huron following dechlorination using sodium metabisulphate and dilution to ensure a maximum suspended solids level of 25 mg/L. Sodium hypochlorite is used for prechlorination at the intake for zebra mussel control as well as primary and secondary disinfection. Three vertical turbine high lift pumps with variable frequency drives supply the distribution system. One fixed speed 38 L/s high capacity pump is available for emergency situations. A diesel generator is available to supply emergency power.

Continuous particle counters are no longer in use (Schedule C amendment to DWWP #270-201) but remain in place.

**Site (Name):** DISTRIBUTION (WATER INSPECTION)

**Type:** Other

**Sub Type:**

**Comments:**

The distribution system serves a population of approximately 600 in the Town of Bruce Mines and 250 in the Township of Plummer Additional. The system is equipped with hydrants for fire protection and flushing purposes. Water storage consists of in-ground reservoirs at the treatment plant which also provide the necessary contact time for disinfection. There is a booster station with re-chlorination capability for servicing the Gimby subdivision and the community of Bruce Station (Twp. of Plummer Additional).

**Site (Name):** SYSTEM

**Type:** Other

**Sub Type:**

**Comments:**

The Bruce Mines Drinking Water System consists of a Class 2 Water Treatment Subsystem (Certificate # 249) and Class 2 Distribution Subsystem (Certificate # 251). Both systems are owned by the The Corporation of the Town of Bruce Mines. At the time of this inspection the treatment system and the distribution system were operated under contract by the Ontario Clean Water Agency (OCWA).

## INSPECTION SUMMARY:

### Introduction

- The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water related policies and guidelines during the inspection period. The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment and distribution components as well as management practices.

This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O.Reg. 170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.

This report is based on a "focused" inspection of the system. Although the inspection involved fewer activities than those normally undertaken in a detailed inspection, it contained critical elements required to assess key compliance issues. This system was chosen for a focused inspection because the system's performance met the ministry's criteria, most importantly that there were no deficiencies as identified in O.Reg. 172/03 over the past 3 years. The undertaking of a focused inspection at this drinking water system does not ensure that a similar type of inspection will be conducted at any point in the future.

This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

Unless otherwise stated, data review for this inspection covers the period from November 29, 2019 to December 3, 2020.

### Source

- The owner had a harmful algal bloom monitoring plan in place.
- The owner did have a harmful algal bloom monitoring plan in place that met the requirements of the Municipal Drinking Water Licence condition.

### Capacity Assessment

- There was sufficient monitoring of flow as required by the Municipal Drinking Water Licence or Drinking Water Works Permit issued under Part V of the SDWA.

Schedule C Condition 2.1 of the Municipal Drinking Water Licence (#270-101) for the Bruce Mines DWS requires a sufficient number of flow monitoring devices throughout the system to ensure continuous monitoring, and recording of flow rates and daily volumes of water transported into the treatment and distribution systems.

Continuous flow measuring devices are in place to monitor raw water flow into each filtration unit, treated water flow leaving the plant and influent flow to the Plummer Additional booster station.

- The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Municipal Drinking Water Licence issued under Part V of the SDWA.

The rated capacity for this drinking water system is outlined in Schedule C Condition 1.1 of the Municipal Drinking Water Licence (#270-101) for the Bruce Mines DWS, and is 864 m<sup>3</sup>/day.

**Capacity Assessment**

Records indicate that there were no exceedances during the current review period. The maximum daily treated flow during this inspection period was 382.10 m<sup>3</sup>/day recorded on July 3rd, 2020.

**Treatment Processes**

- **The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.**

Please note: the Plummer Booster Station was not visited during this inspection.

- **Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Drinking Water Works Permit and/or Municipal Drinking Water Licence issued under Part V of the SDWA at all times that water was being supplied to consumers.**

The Bruce Mines WTP achieves primary disinfection through the use of membrane filtration (0.1 micron) and chlorination. Since the drinking water source is surface water, the plant is required to provide 2 log removal of cryptosporidium, 3 log removal of giardia, and 4 log removal of viruses; a minimum of 0.5 log removal of giardia must be achieved through chemical disinfection.

Removal credits are assigned as follows:

	Crypto	Giardia	Viruses
Membrane Filtration	2.0	3.0	2.0
Chlorination	0	0.5	2.0
Total	2.0	3.5	4.0
Required	2.0	3.0	4.0

**MEMBRANE FILTRATION:**

The filtration system is being operated in a manner that fulfills the requirements outlined in the "Procedure for Disinfection of Drinking Water in Ontario". Filters are backwashed effectively with backwash water going directly to waste rather than being recycled. Trans-membrane pressure is also continuously monitored for each unit. A review of the turbidity data for this inspection period indicates that the filtered water turbidity was maintained at less than or equal to 0.1 NTU in 99% of the measurements each month.

**CHLORINATION:**

The disinfection component of this is designed for 0.5 log inactivation of giardia cysts, and 2 log inactivation of viruses. The CT sample calculation outlined in the operations manual states that CT conditions are met under normal high lift conditions (2 high lift pumps running – treated water flow of 16 L/S) provided that the chlorine residual is maintained at 0.6 mg/L and the clearwell level is maintained above 38.4%. The operations manual also identifies the CT value for different scenarios when the plant is operating outside of the normal range. A minimum free chlorine alarm has been set at 0.7 mg/L with a clearwell low level alarm set point of 70%. Alarm set points are established to allow operational staff sufficient time to respond to call outs and to ensure that the CT is maintained under varying conditions. Data reviewed since the last inspection indicates that the lowest treated chlorine residual was 0.79 mg/L. Based on information provided during this inspection period there were no concerns identified with respect to the system achieving the required CT for the inactivation of both giardia and viruses.

- **Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.**

Records provided by the operating authority for this inspection period were reviewed and indicate that the chlorine residual in the distribution system was never less than 0.05 mg/L. The lowest recorded residual was 0.30 mg/L in March 2020.

**Treatment Processes**

- Where an activity has occurred that could introduce contamination, all parts of the drinking water system were disinfected in accordance with Schedule B, Condition 2.3 of the Drinking Water Works Permit.

**Treatment Process Monitoring**

- **Primary disinfection chlorine monitoring was conducted at a location approved by Municipal Drinking Water Licence and/or Drinking Water Works Permit issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved.**
- **Continuous monitoring of each filter effluent line was being performed for turbidity.**  
The Bruce Mines Drinking Water System is equipped with two membrane filtration units; effluent from each filter is monitored continuously by an on-line turbidity metre.
- **The secondary disinfectant residual was measured as required for the distribution system.**  
Secondary disinfection residual sampling and testing is being performed in accordance with Schedule 7 of O.Reg. 170/03.
- **Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.**
- **All continuous monitoring equipment utilized for sampling and testing required by O. Reg.170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, were equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.**
- **Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format.**
- **All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.**

**Operations Manuals**

- **The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.**
- **The operations and maintenance manuals met the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA.**

**Logbooks**

- **Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.**

**Security**

- **The owner had provided security measures to protect components of the drinking water system.**

Security

Certification and Training

- The overall responsible operator had been designated for each subsystem.
- Operators-in-charge had been designated for all subsystems which comprised the drinking water system.
- All operators possessed the required certification.
- Only certified operators made adjustments to the treatment equipment.

Water Quality Monitoring

- **All microbiological water quality monitoring requirements for distribution samples were being met.**

Section 10-2(1) of O.Reg. 170/03 requires the owner of a drinking-water system and the operating authority for the system to ensure that at least eight distribution samples are taken every month, with at least one of the samples being taken in each week. (2) The owner of the drinking-water system and the operating authority for the system shall ensure that each of the samples taken under subsection (1) is tested for:

- (a) Escherichia coli (E.coli); and,
- (b) total coliforms

The owner of the drinking-water system and the operating authority for the system shall ensure that 25 percent of the samples and tested for general bacteria population expressed as colony counts on a heterotrophic plate count (HPC).

A review of the data for this inspection period indicates that sampling has been completed as required.

- **All microbiological water quality monitoring requirements for treated samples were being met.**

A review of data for this inspection period indicates a treated water sample is collected once per week and analyzed for E.Coli, total coliforms, and HPC as required.

- **All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

Sampling and testing was conducted in accordance with Schedule 13-2 of O. Reg. 170/03. A review of data for this inspection period indicates the most recent sampling was completed on January 6, 2020.

- **All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

A review of data for this inspection period indicates the most recent sampling and analysis occurred on January 6, 2020.

- **All haloacetic acid water quality monitoring requirements prescribed by legislation are being conducted within the required frequency and at the required location.**

All haloacetic acid water quality monitoring requirements prescribed by legislation were conducted within the required frequency (quarterly).

- **All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.**

All trihalomethanes water quality monitoring requirements prescribed by legislation were conducted within the

### Water Quality Monitoring

required frequency (quarterly).

- **All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.**

All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency (quarterly).

- **All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

A review of data for this inspection period indicates a sample is collected once every 60 months and analyzed for sodium as required. The most recent sampling occurred on January 6, 2020 (4.84 mg/L).

- **All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

A review of data for this inspection period indicates a sample is collected once every 60 months and analyzed for fluoride as required. The most recent sampling occurred on January 6, 2020.

- **All water quality monitoring requirements imposed by the MDWL or DWWP issued under Part V of the SDWA were being met.**
- **Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.**

### Water Quality Assessment

- **Records showed that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O.Reg. 169/03).**

### Reporting & Corrective Actions

- **Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.**

The on-call operator is notified by telephone 24/7 of the alarm. Logbook entries indicate an operator attends the site within a reasonable amount of time.

**NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED**

This section provides a summary of all non-compliance with regulatory requirements identified during the inspection period, as well as actions required to address these issues. Further details pertaining to these items can be found in the body of the inspection report.

**Not Applicable**

**SUMMARY OF RECOMMENDATIONS AND BEST PRACTICE ISSUES**

This section provides a summary of all recommendations and best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. In the interest of continuous improvement in the interim, it is recommended that owners and operators develop an awareness of the following issues and consider measures to address them.

**Not Applicable**

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**SIGNATURES**

Inspected By:  
Stephanie Robbins

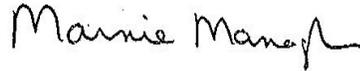
Signature: (Provincial Officer)



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Reviewed & Approved By:  
Marnie Managhan

Signature: (Supervisor)



Review & Approval Date:

January 29, 2021

Note: This inspection does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they apply or may apply to this facility. It is, and remains, the responsibility of the owner and/or operating authority to ensure compliance with all applicable legislative and regulatory requirements.

**Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2020-2021)**

<b>DWS Name:</b>	BRUCE MINES DRINKING WATER SYSTEM
<b>DWS Number:</b>	210000933
<b>DWS Owner:</b>	Bruce Mines, The Corporation Of The Town Of
<b>Municipal Location:</b>	Bruce Mines

**Regulation:** O.REG 170/03  
**Category:** Large Municipal Residential System  
**Type Of Inspection:** Focused  
**Inspection Date:** December 3, 2020  
**Ministry Office:** Sault Ste. Marie Area Office

**Maximum Question Rating: 457**

Inspection Module	Non-Compliance Rating
Source	0 / 0
Capacity Assessment	0 / 30
Treatment Processes	0 / 77
Operations Manuals	0 / 28
Logbooks	0 / 14
Certification and Training	0 / 42
Water Quality Monitoring	0 / 112
Reporting & Corrective Actions	0 / 21
Treatment Process Monitoring	0 / 133
<b>TOTAL</b>	<b>0 / 457</b>

<b>Inspection Risk Rating</b>	<b>0.00%</b>
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<b>FINAL INSPECTION RATING:</b>	<b>100.00%</b>
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Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2020-2021)

**DWS Name:** BRUCE MINES DRINKING WATER SYSTEM  
**DWS Number:** 210000933  
**DWS Owner:** Bruce Mines, The Corporation Of The Town Of  
**Municipal Location:** Bruce Mines

**Regulation:** O.REG 170/03  
**Category:** Large Municipal Residential System  
**Type Of Inspection:** Focused  
**Inspection Date:** December 3, 2020  
**Ministry Office:** Sault Ste. Marie Area Office

**Maximum Question Rating:** 457

**Inspection Risk Rating** | 0.00%

**FINAL INSPECTION RATING:** | 100.00%