

January 5, 2015

The Mayor and Members of Council
City of Elliot Lake
Municipal Office
45 Hillside Drive North
Elliot Lake, Ontario P5A 1X5



ATTENTION: Mayor and Member of Council

**RE: ELLIOT LAKE WATER TREATMENT PLANT SUMMARY REPORT FOR
MUNICIPALITIES: Municipal Large Residential**

Your Worship Mayor Marchisella and Members of Council:

Please find attached, the 2014 Summary Report for the Elliot Lake Water Treatment Plant. This report has been prepared in accordance to the guidelines set out in Schedule 22 of the Safe Drinking Water Act, 2002 (Ontario Regulation 170/03).

The report covers the period from January 1, 2014 to December 31, 2014.

Please direct any questions or concerns to the undersigned.

Yours truly,

A handwritten signature in blue ink, appearing to be "Sean McGhee". The signature is stylized and somewhat abstract, with a large loop at the beginning and a long, sweeping tail.

Sean McGhee
Director of Operations

Elliot Lake Water Treatment Plant 2014 Summary Report

The purpose of this report is to summarize water quality and quantity data pertaining to the Elliot Lake water treatment plant. This report is prepared in accordance with Schedule 22 of Regulation 170/03 of Ontario's Safe Drinking Water Act and covers the reporting period from January 1, 2014 to December 31, 2014.

This report contains the following information:

- A summary of the quantities and flow rates of the water supplied including monthly average and maximum daily flows.
- A comparison of the peak flows and capacities to the rated capacities referenced in the drinking water works permit and municipal drinking water license.
- A listing of all requirements of the Act or any regulatory requirement that the system failed to meet during the period covered by the report. This includes any measures taken to mitigate the failure and the duration of the incident.
- Terms and conditions identified in the Act, relevant regulations, drinking water permit, and municipal drinking water licence.

Annual Quantities and Flow Rates:

MONTH	Minimum Flow / Day (M ³)	Maximum Flow / Day (M ³)	Average Flow / Day (M ³)	Instantaneous Peak flow (l/s)	Total Flow (M ³)
January	5,084	7,197	6,072	183.01	193,091
February	5,442	8,117	6,394	183.06	183,575
March	4,227	9,433	6,498	182.84	207,851
April	5,401	7,637	6,261	185.64	194,085
May	4,817	8,488	5,815	211.32	189,235
June	3,740	9,979	6,529	299.68	206,610
July	4,526	8,259	5,879	238.97	192,761
August	3,508	15,343	6,124	237.18	199,999
September	4,127	6,625	5,069	257.73	160,010
October	3,556	6,102	4,902	231.64	161,070
November	4,013	6,159	5,241	222.33	160,106
December	4,449	7,074	5,761	220.44	187,684

Minimum	3,508	6,102	4,902	182.84	160,010
Maximum	5,442	15,343	6,529	299.68	207,851
Average	4,408	8,368	5,879	221.15	186,340
Total					2,236,077

NOTE: The maximum rated capacity of **28,400** m³/day (as identified in the facility's Municipal Drinking Water License) was not exceeded for the period of this report.

Compliance Report

Section 18 of the Safe Drinking Water Act requires the system operator to report adverse test results or conditions immediately after the result is obtained or situation identified.

An adverse test result constitutes a parameter failing to meet, at a minimum, the requirements of the prescribed drinking water standards established for that parameter, under the Ontario Drinking Water Standards. Adverse test results must be identified in the Summary Report.

Situations involving the depressurization of any portion of the distribution system for repair of a watermain can be deemed as an adverse event due to the potential for contamination through back siphonage or pressurized backflow. These incidents are included in the list of adverse events. They are indicated as evidence of best practice on the part of the Public Works Department.

There were 16 instances in 2014 where reports were made to the Spills Action Centre in accordance with Section 18 of the Safe Drinking Water Act.

Adverse Water Quality Incidents:

INCIDENT DATE	PARAMETER	RESULTS	UNIT OF MEASURE	CORRECTIVE ACTION	CORRECTIVE ACTION DATE
02-Jan-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	15-Jan-14
06-Mar-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	14-Mar-14
05-May-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	12-May-14
20-Jun-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	27-Jun-14
07-Jul-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	18-Jul-14
08-Aug-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	14-Aug-14
13-Aug-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	18-Aug-14
16-Oct-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	27-Oct-14
13-Nov-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	24-Nov-14
24-Nov-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	01-Dec-14
28-Nov-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	08-Dec-14
28-Nov-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	08-Dec-14
05-Dec-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	12-Dec-14
12-Dec-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	18-Dec-14
15-Dec-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	22-Dec-14
29-Dec-14	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	02-Jan-15

Corrective Action:

In all cases when repair or maintenance carried out on the distribution system requires depressurization of any part of the system, the Algoma Health Unit is notified. This scenario is considered to be a “failure of mechanical containment”, which can potentially lead to contamination through back siphonage or pressurized backflow.

These situations are without exception, treated as an adverse incident by the Algoma Health Unit, and a boil water advisory is issued in order to protect the consumer from potential risk.

Following the repair, flushing is undertaken to restore quality. Once completed, two consecutive sets of bacteriological tests are taken, at 24 hour intervals, after which, if all is clear, the advisory is lifted.

Regulatory Inspection

The Ministry of the Environment carried out a facility inspection on June 25th, 2014. The inspection noted instances relating to loss of chlorine residual in the distribution system in 2013. In all cases, the corrective action taken by plant staff was deemed as appropriate and acceptable. No orders were issued and no additional action was required. The final inspection rating for the system was 97.37%.

Identified Terms and Conditions

Performance:

The Elliot Lake Water Treatment Plant meets the requirement of the Ontario “Drinking Water Standards.” Disinfection of treated water is achieved as per Ministry Procedure B13-3. Required CT was continuously monitored and met at all times ensuring appropriate levels of disinfection were attained. Backwash water discharge suspended solids were monitored with an average of **16 mg/l** which is well below the required **25 mg/l** annual average.

Monitoring and Recording:

Flow meters, chlorine analyzers and turbidimeters are calibrated per manufacturer’s specifications. Third party certification is secured on an annual basis as a quality assurance, quality control measure.

Operations and Maintenance:

Maintenance of the water treatment plant is conducted, monitored, documented, and controlled through a preventive maintenance program. All operators are certified with at least one operator certified at the designated level of the facility. All treatment chemicals meet A.W.W.A. (American Water Works Association) and ANSI / NSF 60 quality criteria for drinking water.

Process Parameters:

The following are the chemicals used and dosage rates:

- Polyaluminum Chloride - 26.88 mg/l
- Hydrofluorosilicic Acid – 0.457 mg/l
- Chlorine – 2.42 mg/l
- Hydrated Lime – 19.02 mg/l

Drinking Water Quality Management System

The Quality Management System (QMS) consists of an Operational Plan that defines and documents the various policies and procedures with respect to water quality management which were established to meet Province of Ontario standards as identified within the Safe Drinking Water Act.

The Management Review, Internal Audit, Surveillance Audit, and Site Audit were all completed in 2014 per the requirements outlined in the Operational Plan.

Documentation:

Contingency plans, the Facility Operations Manual, Standard Operating Procedures and the Drinking Water Quality Management Standard documents which provide guidance in the event of emergencies, upset conditions and breakdowns are located in the office at the water treatment facility. Detailed drawings of the facility are centrally located in the Operational Control Room.