

Whitehead Elton Regional Water Co-operative Inc.

2016

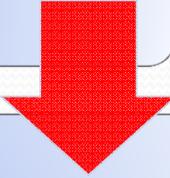
ANNUAL REPORT

Board of Directors

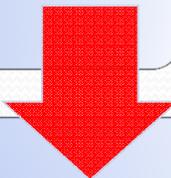
President;
Donna Mitchell



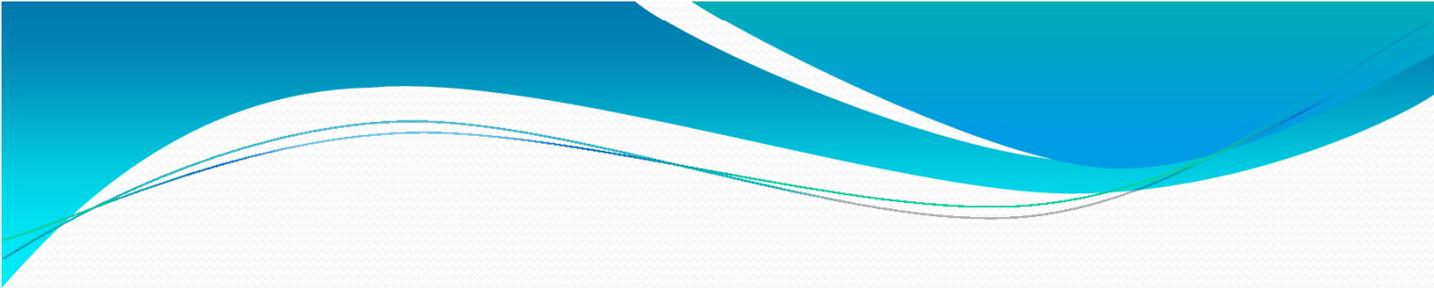
Vice President;
Allan Sutherland



Secretary Treasurer;
Kathleen Steele



Directors;
Ross Farley, Cindy Izzard,
Darryl Speers



Name of Public Water System:

Whitehead Elton Regional Water Co-operative Inc.

Name of Legal Owner:

Whitehead Elton Regional Water Co-operative Inc.

Contact Person: **Mark Yeomans** Manager

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(204) 752 2378

Contact Numbers:

Whitehead Elton Regional Water Co-operative Inc.

(204) 729 6116

(204) 752 2261 R.M. Of Whitehead

(204) 728 7834 R.M. Of Elton

Emergency Numbers:

Whitehead Elton Regional Water Co-operative Inc.

(204) 729 6116

(204) 752 2261 R.M. Of Whitehead

(204) 728 7834 R.M. Of Elton

Names of Operators:

Mark Yeomans

Ralph Berg

Bo Yeomans

Rob Sykes

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1) Introduction:

The 2016 Whitehead Elton Regional Water Cooperative Inc. Annual Report summarizes the water utility's ability to provide safe economical potable water and comply with provincial standards.

2) Description of the Water System:

The Whitehead Elton Regional Water Cooperative Inc. provides potable water to a population of approximately 1,650 residents. Corrective Actions were taken and reported as required for normal minor variations during the course of operations. Full results have been attached in Section 3.

The Whitehead Elton Regional Water Cooperative Inc. water system consists of a network of pressure pipelines, a water treatment plant, a booster station, a pressure reducing station and a water storage reservoir. The Whitehead Elton Regional Water Cooperative Inc. owns the Alexander Water Treatment Plant, Dungannan Pressure Reducing Station, Elton Booster Station and the Forrest Reservoir.

The R.M. of Elton owns 2 pressure reducing stations located east of #10 Highway and north of #1 Highway.

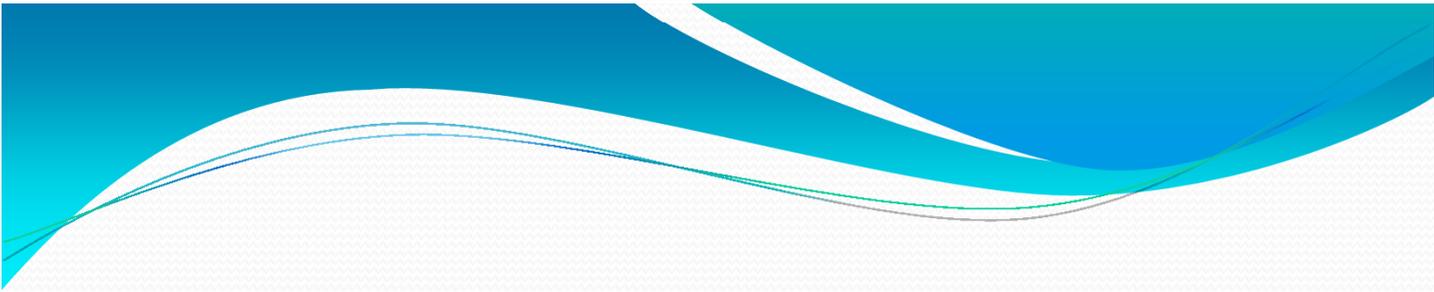
2.1) Water Supply Source:

The Whitehead Elton Regional Water Cooperative Inc. receives its water supply from 2 wells located in the R.M. Of Whitehead. The wells are situated to draw raw water from a sand and gravel aquifer.

The system provides treated water to the R.M. Of Elton, the villages of Forrest and Douglas, the R.M. Of Whitehead, the villages of Alexander and Kemnay and a few residents of the R.M. Of Daly.

2.2) Water Treatment Process:

The water treatment process is designed to remove hardness, iron, manganese, total dissolved solids, turbidity and arsenic from the raw water supply to meet the aesthetic objectives outlined in the *Guidelines for Canadian Drinking Water Quality (GCDWQ)*. The plant currently provides virus inactivation through chlorine treated water obtaining contact time within the treated water reservoirs.



Re-Chlorination is available at the Forrest Reservoir but it is not in use. The average daily flow through the Alexander Water Treatment Plant of raw water is 488.59 cubic meters per day, with the plant rated at a maximum daily flow of raw water of 1,080 cubic meters per day.

Raw water is diverted from a sand and gravel aquifer by two wells located approximately 2.5 km NE of the Alexander Water Treatment Plant. The well pumps deliver water to the WTP through a 150 mm HDPE raw water pipeline. Water passes through the reverse osmosis system to remove hardness, iron, manganese, total dissolved solids and turbidity. Following the membrane unit, permeate water is passed through a membrane contactor to remove carbon dioxide in the permeate water, therefore increasing the pH. By Pass water (raw water) passes through a 1.4 m diameter manganese greensand filter to remove iron and manganese allowing for hardness and pH adjustment in the treated water. A portion of the permeate water is also passed through the greensand filter for arsenic removal. Treated water from the R.O. Unit is pH buffered with Sodium Hydroxide injection and the combined treatment streams are chlorinated prior to entering the 550 cubic meter, six cell reservoir. The distribution pumps send water through a 200 mm pipeline to the distribution system.

Iron and Manganese are metals that cause laundry and plumbing fixture staining problems and can accumulate in the distribution pipes and cause reduced flow. Calcium Carbonate causes hardness in the water which diminishes the ability of the water to react with soap and lather. Hardness also forms scale deposits in kettles, hot water tanks and plumbing fixtures which can reduce their life expectancy.

2.3 Classification and Certification

- The Alexander Water Treatment Plant is a Class 2 water treatment facility.
- The Whitehead Elton Regional Water Co-operative Inc. water distribution system is being assessed by Manitoba Conservation for classification but is currently rated as Class 1.
- The R.M. Of Whitehead's distributing system is Class 1.
- The R.M. Of Elton's distribution system is classed as a Small Distribution System.

The Facility classifications are used to determine certification requirements for the water system operators.



3.0 List of Water Quality Standards

3.1 Water Quality Standards and Monitoring Requirements

The Province of Manitoba has adopted a number of water quality standards from the Health Canada *Guidelines for Canadian Drinking Water Quality*. The health based parameters express the *maximum acceptable concentrations or MAC* for drinking water. Concentration values in excess of the guidelines constitute a health-related issue and require corrective actions. All health-based parameters were within the limits for 2016 for Whitehead Elton Regional Water Co-operative Inc. and both R.M.'s.

All public water systems, PWS, are required to monitor chlorine residual levels daily. Monitoring is done daily at both the Alexander Water Treatment Plant and the Forrest Reservoir. Results are recorded and at the end of each month, results are forwarded to our Provincial Drinking Water Officer. Copies of the originals must be kept on file and on hand for **TWO YEARS** at each facility.

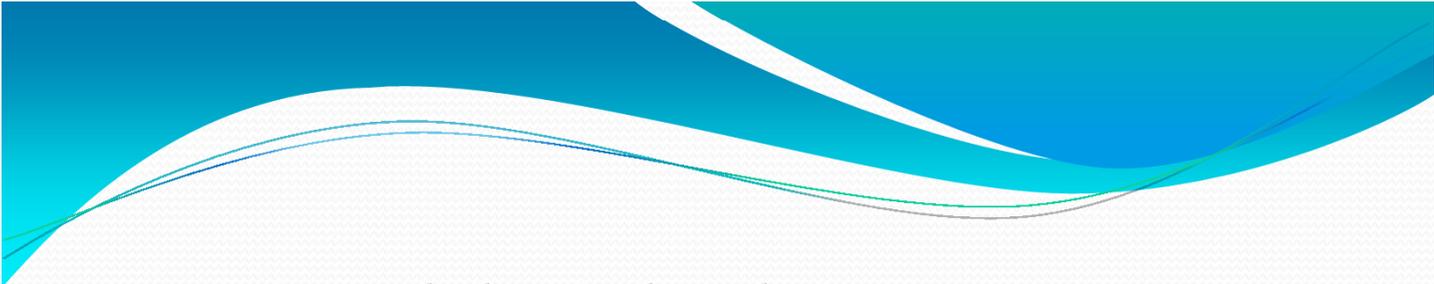
Bacterial Testing for Total Coliforms and E.coli are done every two weeks, with sample sets being separated by at least 12 days. All results are kept in files at the Water Treatment Plant for a **period of 2 years**.

3.2 Drinking Water Officer Annual Reports

PWS 248.70 Whitehead Elton Regional Water Co-operative Inc.

PWS 248.80 R.M. Of Whitehead

PWS 63.50 R.M. Of Elton



3.3 2014 General Chemical Analysis

As part of the operating licence for Whitehead Elton Regional Water Co-operative Inc., a general chemical analysis of both the raw water and the treated water in the reservoir has to be done every **Three years**. Water samples were sent to the lab on July 9/14.

In 2017, another General Chemical Analysis will be done at the Water Treatment Plant to satisfy the conditions of our operating license. We will place the results of the 2017 General Chemical Analysis on the web sites of both Municipalities when the tests are completed by the ALS Lab.

It is an extensive test including a physical test, Anions and Nutrients, Organic/Inorganic Carbon, Total Metals and Volatile Organic Compounds tests.

The tests were conducted at ALS Labs in Winnipeg. The results are on the following page. The highlighted areas on the results indicate that the raw water exceeds Aesthetic Objectives or Maximum Acceptable Concentrations cited in the *Guidelines for Canadian Drinking Water Standards*. None of the treated water produced exceeds MAC limits or Aesthetic Objectives.

If there are questions that you may have regarding the lab results, please use one of the contact numbers listed and we can assist in any questions or concerns.

Arsenic Test

As part of our license with ODW, the Whitehead Elton Regional Water Co-operative is required to conduct an arsenic test on raw and treated water at the water treatment plant. The results of the Arsenic test are located following the General Chemical Analysis.



4) *Water System Incidents and Corrective Actions*

There was no corrective actions reported to the Drinking Water Officer in 2016.

5) *Drinking Water Safety Orders, Warnings and Charges*

There were no drinking water safety orders, warnings or charges issued to the Whitehead Elton Regional Water Co-operative Inc.

6) Major Expenses Incurred

Whitehead Elton Regional Water Co-operative Inc. did have 1 major project that completed in 2016. The project consisted of the following items.

The Booster Station and the Well Site Upgrade. Back-up generators are being added to aid in the delivery of water to the water treatment plant and to our customers in the R.M. of Elton.

Bollards have been installed at the well site in 2016. The bollards will provide protection for both wells and the electrical panel from vehicles leaving the road surface.

Surveillance cameras will be added to the Alexander Water Treatment Plant in 2017.

The last item in our project was **the purchase of 2 Trimble Rangers**. One for each Municipality. These will aid in the quarterly meter readings for both RM's.

Other maintenance items that the Co-op purchased were a duty pump for the Alexander Plant and membranes for the Stage 2 portion of both R.O. units.

7) Future System Expansion

Expansion in both municipalities continued in 2016.

The RM of Elton pipeline expansion that commenced in May 2015 is almost complete. Water was turned to 60 new homes by the end of 2015. The majority of the remaining homes and businesses were turned on in 2016. The RM of Elton used the remaining funding from the Douglas water line expansion to fund a small pipeline project. 19 new services were added in this project.

In August of 2016, the RM of Elton received funding for another waterline expansion. The remainder of the municipality will be serviced with this new contract. Construction started in the fall of 2016 with completion slated for the fall of 2017.

The R.M. Of Whitehead pipeline expansion started in the fall of 2015. The main lines and some service lines were completed by Christmas. The remainder of the project was completed in May of 2016.

The RM of Whitehead also received funding in 2016 for a pipeline project. The tender was opened in late fall with construction to start in the spring of 2017.

It has been a busy 2 years of pipeline expansion for both municipalities. The end result is that both municipalities will be nearing the end of major pipeline expansion.

8) Appendix A

Appendix A contains all the bacterial test results for all 3 Public Water Systems.

9) Appendix B

Appendix B contains the 2016 Water Use Report that has to be sent to the Provincial Government and the Monitoring Well Graph Reports. The Monitoring Wells are checked twice a year. One well is located at the raw water supply wells and the second is located a quarter of a mile away. These Monitoring Wells are a daily snapshot on the health of the aquifer we draw our water from.

APPENDIX A

2016

BACTERIAL SAMPLE RESULTS

Appendix B

2016 Water Use Report

Monitoring Well Graph Report