

Town of Niverville

Public Water System Operation Report

2023

The Town of Niverville strives to provide the highest quality drinking water in sufficient quantity to meet the needs of the residents. It is our goal to provide this water in a safe, cost-effective manner while remaining in compliance with all regulatory requirements governing the provision of potable water.

It is our belief that the public has a right to access information related to the potable water they consume. To that end the following report has been prepared for the Town of Niverville public water system.

Why do we treat our water?

We treat our water to ensure that safe and aesthetically pleasing potable water is supplied to our community. The Town of Niverville is committed to meeting and/or exceeding the water quality standards set by the province.

Where do we get our water from?

The raw water is currently obtained from two supply wells located one mile west of New Bothwell. The wells draw ground water from secured aquifers in the fractured limestone. Both wells were installed in 2017 and are both 200 mm in diameter. The first well has a total depth of 91.4m with a 300 mm welded black steel casing installed to a depth of 27.1 m. The second well has a total depth of 96.6 m with a 300 mm welded black steel casing installed to a depth of 27.4 m. The wells were tested by Friesen Drillers Ltd. to each have an estimated discharge rate of 500 Imperial Gallons Per Minute (IGPM). The raw water from these two wells is pumped via 50Hp submersible pumps that travel 10.5 km to the water treatment plant via a 350 mm High-density polyethylene (HDPE) pipeline.

What is our treatment process?

Raw water is pumped from the fractured limestone aquifer to the water treatment plant. The raw water enters the building where an online turbidimeter monitors the turbidity (clarity) of the water before the water is split between the two treatment process. The flow is split 50/50 with half of the water being directed to two sets of dual train reverse osmosis (RO) skid, while the other half is diverted to three biofilters.

Biofilter Treatment Process

The raw water that flows to the biofilters have online instrumentation which monitors the pH, ORP, temperature, and dissolved oxygen of the water. After these probes, an air sparger is installed in the pipe. The air sparger is used to inject air into the water to increase the dissolved oxygen levels going to the biofilters. This air is important to ensure the good bacteria in each of the biofilters can survive and thrive. These bacteria are what treats the water. There are two large air compressors installed in the building, which feed compressed air to the air sparger. After the air sparger, the flow is directed to three biofilters which run in parallel. When the water plant calls to make water based on the treatment mode, automated valves open to allow the flow of water through the biofilters. Inside each biofilter are layers of different sized gravel and a filterlite material. The bottom third of each filter is layered with different sizes of gravel between 1" inch diameter down to 1/8" inch diameter. The larger sized gravel naturally sits on the bottom of the tank. After the gravel layer is the filterlite material. The filterlite is installed on top of the gravel to about two thirds high in the tank. The last layer in the biofilter tank is for the raw water. The water makes up the remaining third of the filter. There are a couple different pipes installed in this gravel layer. One set of pipes is for the underdrain, while the other is for the air scour. The air scour piping is used during the biofilter backwash cycle. Air is injected through the air scour piping to mix up the material inside the filter. The underdrain piping collects the treated water which flows through the biofilter and is then directed to the treatment header. During the biofilter treatment, water is forced into the biofilter and down through the filterlite material which mainly removes iron and manganese from the water. This water is then collected into the underdrain pipe installed in the gravel layer. This treated water, which is now called filtrate, flows from the bottom of the filter to the treatment header. The filtrate coming out of each biofilter is being monitored for pH, ORP, dissolved oxygen, and turbidity by online instrumentation.

Reverse Osmosis (RO) Treatment Process

The raw water is directed to one of the two reverse osmosis multi train units (RO MTU). The flow direction is dependant on which mode of treatment is being used. Raw water is dosed with an anti-scalant prior to entering the skid. Online instrumentation monitors the conductivity, ORP, and temperature of the incoming water. The raw water then flows through a set of prefilters which remove larger debris and particles (sand, silt etc.) from the water. A booster pump then takes that water and increases the pressure to force the water through the reverse osmosis membranes. These membranes remove any particles and minerals from the water. The water that made it through the membranes is now treated and is called permeate water. The water that did not make it through the membranes is called concentrate. The RO units have a typical recovery rate of about 80%. This means that 80% of the water being pushed through the membrane will come out as permeate while the remaining 20% will be concentrate. The permeate water has online instrumentation monitoring the pH, conductivity, and turbidity before heading to the treatment header.

Treatment Header

The treatment header is where the biofilter filtrate, and the reverse osmosis permeate water meets before entering the reservoir. The RO permeate water is dosed with sodium hydroxide (caustic soda) to bring the pH level up to about 7.40. The permeate water then goes through an internal static mixer, which mixes the chemical that was just added. The permeate water and filtrate water then combine, where an online pH probe monitors the pH level of the treated water that is mixing. This treated water is then injected with aqua mag blended phosphate which is a corrosion inhibitor to limit corrosion on various metal piping. It is then dosed with sodium hypochlorite (chlorine) for the final disinfection before entering the reservoir. Each of the chemical pumps dose a set amount of chemical based on flow. This means that the more water being produced, the higher the chemical will be injected. This is so the pumps can be used for each different mode of treatment. Each chemical is equipped with two chemical pumps which run in a Duty / Standby configuration. This means that if one of the two pumps breaks down, the other pump will take over.

Reservoirs

The Niverville water treatment plant has three, below grade reservoirs with a combined capacity of 3,500 m³ (3,500,000 litre). The size of storage allows the chlorine proper contact time with the water (minimum 20 minutes) to confirm proper disinfection is taken place. Each reservoir is split into two different cells. This gives the operators the ability to isolate specific cells to allow them to be taken offline for cleaning. Interconnection piping between each cell and reservoir allows the flow of water to be directed to bypass any of the cells. Below is the information on each of the three reservoirs.

Reservoir 1 (Cell 1&2 - 2007) – This reservoir has a 500,000 litre capacity

Reservoir 2 (Cell 3&4 - 2010) – This reservoir has a 1,200,000 litre capacity

Reservoir 3 (Cell 5&6 - 2023) – This reservoir has a 1,800,000 litre capacity

Why do we disinfect our water?

The final step in the treatment of safe water is disinfection. Disinfection is the selective destruction or inactivation of disease-causing organisms in water. The *Drinking Water Safety Act* and supporting regulations require that potable water be in contact with chlorine for a minimum of 20 minutes before it enters the distribution system. The Town uses sodium hypochlorite (chlorine) to disinfect our water. The provincial standards mandate that the Town maintains a minimum residual chlorine level of 0.5 mg/L leaving the water plant.

What is our water plant classification and who is certified?

The facility classification and operator certification fall under The Environmental Acts Water and Wastewater Facility Operators Regulations. Currently, the water treatment plant, and the water distribution system are classified as a Class 2 facility. The Town of Niverville has the following operators available.

Water Treatment

Class II – 2 Certified Operators

Class I – 1 Certified Operator

Water Distribution

Class II – 2 Certified Operators

Class I – 1 Certified Operator

What is the ‘distribution system’?

The water distribution system is the network of underground pipes used to carry the treated water from the water treatment facility to the homes & businesses within our community. We have both PVC (C-900) and High-density polyethylene (HDPE) piping through parts of the Town. The piping is interconnected (looped) to ensure that fresh safe potable water is continuously supplied. We carry out regular maintenance in the distribution system such as valve maintenance, hydrant flushing and fire hydrant testing in cooperation with the Town of Niverville Volunteer Fire Department.

Who do we serve water to?

The water distribution system is comprised of 1,459 service connections. All (100%) of the homes and businesses connected to the distribution system are metered.

Classification	Size	Number
Residential (Single / Multi)	5/8", 3/4"	1,423
Commercial / Institutional	1", 1.5", 2", 3"	36
Total		1,459

What are the water rates?

The water rates for the Town of Niverville have not changed since July 2018. The current rate for 1,000 gallons of water is \$11.18. Customers will pay the applicable minimum charge set below which includes the water allowance as listed.

Meter Size	Water Included 1000 of Ratio	Gallons	Customer Service Charge	Water Commodity Charge	Water Total Quarterly Minimum
5/8 inch	1	3,000	\$7.37	\$33.54	\$40.91
3/4 inch	2	6,000	\$7.37	\$67.08	\$74.45
1 inch	4	12,000	\$7.37	\$134.16	\$141.53
1 1/2 inch	10	30,000	\$7.37	\$335.40	\$342.77
2 inch	25	75,000	\$7.37	\$838.50	\$845.87
3 inch	45	135,000	\$7.37	\$1,509.30	\$1,516.67

Water Quality Standards

The Town's Operating license identifies that our public water system shall operate in a manner that achieves or exceed the quality/treatment standards specified in the table below.

Parameter	Quality Standard
Total Coliform	Less than one total coliform bacteria detectable per 100 mL in all treated and distribution water
E. Coli	Less than one E. Coli bacteria detectable per 100 mL in all treated and distribution water
Chlorine Residual	A free chlorine residual of at least 0.5 mg/L in water entering the distribution system following a minimum contact time of 20 minutes. A free chlorine residual of at least 0.1 mg/L always at any point in the water distribution system
Arsenic	Less than or equal to 0.01 mg/L
Benzene	Less than or equal to 0.005 mg/L
Ethylbenzene	Less than or equal to 0.14 mg/L
Fluoride	Less than or equal to 1.5 mg/L
Lead	Less than or equal to 0.005 mg/L
Manganese	Less than or equal to 0.12 mg/L
Nitrate	Less than or equal to 45 mg/L measured as nitrate (10 mg/L measured as nitrogen)
Nitrite	Less than or equal to 3 mg/L measured as nitrite (1 mg/L measured as nitrogen)
Trichloroethylene	Less than or equal to 0.005 mg/L
Tetrachloroethylene	Less than or equal to 0.01 mg/L
Toluene	Less than or equal to 0.06 mg/L
Total Xylenes	Less than or equal to 0.09 mg/L
Uranium	Less than or equal to 0.02 mg/L

The parameters for total coliform and E. Coli are tested every two weeks. The remaining parameters from our licence that require testing were completed on February 23, 2021, The Town is required to do this testing every three years.

The Office of Drinking Water has given the deadline for testing these remaining parameters by August 2024. The biweekly sample information, plus the full water analysis report can be found on the Town of Niverville website at <https://www.wheretheybelong.ca/town-services/financial-services/utilities/>

Below is a summary of the testing results for each parameter listed on our licence.

Parameter	Unit	Guide Limit #1	Guide Limit #2	Spruce Drive - Raw Water	Spruce Drive - Treated Water
Arsenic (As)	mg/L		0.01	0.00378	0.00162
Benzene	mg/L		0.005	<0.00050	
Ethylbenzene	mg/L	0.0016	0.14	<0.00050	
Fluoride (F)	mg/L		1.5	0.883	0.196
Lead (Pb)	mg/L		0.005	0.000371	<0.000050
Manganese (Mn)	mg/L	0.02	0.12	0.00626	0.00112
Nitrate (as N)	mg/L		10	<0.0050	0.0066
Nitrite (as N)	mg/L		1	<0.0010	<0.0010
Trichloroethylene	mg/L		0.005	<0.00050	
Tetrachloroethylene	mg/L		0.01	<0.00050	
Toluene	mg/L	0.024	0.06	<0.00050	
Total Xylenes	mg/L	0.02	0.09	<0.00064	
Uranium	mg/L		0.02	0.000249	0.000039

Is our water tested? What for? When?

The Town's operating license identifies that our public water system shall ensure monitoring is completed as set out from the specified table below.

Water Quality Monitoring	
Parameter	Monitoring Requirement
Bacteriological (total coliform and E. coli)	Biweekly sampling program with each set of samples consisting of one raw, one treated, and a minimum of one distribution sample. Consecutive sample sets to be separated by at least 12 days
Free Chlorine (treated water)	One sample per day of water entering the distribution system following at least 20 minutes of contact time
Free Chlorine (distribution system)	At the same times and location(s) as bacteriological distribution system sampling
Total Chlorine (treated water)	One sample per day of water entering the distribution system following at least 20 minutes of contact time

Total Chlorine (distribution system)	At the same times and location(s) as bacteriological distribution system sampling
Free Ammonia (treated water)	One sample per week of water entering the distribution system
General Chemistry (parameter list provided by Office of Drinking Water)	One raw and one treated water sample once every three years
Total Metals (distribution system)	One sample taken at the same time(s) as General Chemistry sampling at a mid-point in the distribution system
Lead	As per the instructions of the drinking water officer
Manganese	Monitoring included in the General Chemical and Total Metals analysis
Other Parameters	As per the instructions of the drinking water officer

What do we have in place to alert Operations Staff to water emergencies?

The Town has an operator on-call for sewer &-water emergencies 24 hours a day/ 7 days a week. This person can access the water plants-Supervisory Control and Data Acquisition (SCADA) system via their smart phone or laptop. Operators can check on the status of pumps, valves, sensors, flows, and chemical dosing. All equipment in the water plant has alarm parameters set specifically for that piece of equipment. If any equipment runs outside of those set parameters, an alarm will go off. Once an alarm is triggered, a signal is sent to an auto dialer which will call through a list of preset operators cell phone numbers until the alarm is acknowledged. The Operator can then log on to the SCADA system to determine the cause of the alarm. This allows operators to diagnose issues more efficiently and effectively.

Were there any emergencies, regulatory compliance issues or other operational issues to report for 2023?

On June 11 & 12, 2023 we had an issue maintaining our free chlorine residual exiting the water plant of above 0.50 mg/L. After diagnosing the chlorine feed system, a broken fitting was found near the chlorine injector. Because of this, chlorine was not dosed into the treated water before entering the reservoir. Because chlorine levels were dropping, chlorine was added directly to the reservoir cells to compensate for the drop. By June 13, the chlorine had stabilized across all three reservoirs.

Were there any drinking water safety orders issued?

In the reporting period, no Drinking Water Safety Orders were issued to the Town of Niverville's Spruce Drive water treatment plant.

Were there any boil water advisories?

In the reporting period, no boil water advisories were issued to the Town of Niverville's water treatment plant.

Were there any warnings issued, fines, or charges laid?

In the reporting period, no warnings or fines were issued to the Town of Niverville's water treatment plant.

Were there any major expenses incurred in 2023?

1. The Town of Niverville partnered with the Manitoba Water Service Board on the construction of a new water treatment plant building and reservoir. The project consists of adding a new-dual-train 40 L/sec membrane filtration system and 30 L/sec iron biofiltration system. This was to be housed within a new water treatment plant building on top of a new 1,800 m³ reservoir. This project was designed and engineered by Associated Engineering. Penn-Co Construction was the general contractor. Construction was completed in the Spring of 2023.

Total Project Cost; Approximately 8 million

Future system expansion or expenses expected?

1. A 3rd raw water supply well will be drilled to build redundancy into the raw water supply for the Town of Niverville Treatment Plant.

Estimated Cost: 1.5 million

Who can we call with questions or concerns regarding our drinking water?

All calls regarding water (emergency or not), please call the Town of Niverville directory (204)-388-4600 ext.1111 and leave a message. Staff will listen to the message within a reasonable amount of time and respond accordingly.

How can you find out about this report?

This report will be available on or before March 31 of each year. The Town will also post the link to this report on our Facebook page once available. The link for this report can be found on the Town's website under the resources section at <https://www.wheretheybelong.ca/town-services/financial-services/utilities/>

Paper copies are available upon request at the Town Office.

If you wish to leave an email (non-emergency) please send it to ryan@wheretheybelong.ca

Water and Wastewater Facility Operators Certification Program

This is to certify that the

Spruce Drive Water Plant

owned by

Town of Niverville

has been classified as a

Class 2 Water Treatment Facility

in accordance with the Water and Wastewater Facility Operators Regulation under *The Environment Act*.

Dated at **Winnipeg, Manitoba** this **30th** day of **May 2016**.

Certificate No.: **2016-010**


Director

Manitoba Sustainable Development

Certificate is the property of Manitoba Sustainable Development and must be surrendered upon request

Manitoba 

Water and Wastewater Facility Operators Certification Program

This is to certify that the

Spruce Drive Water Distribution

owned by

Town of Niverville

has been classified as a

Class 2 Water Distribution Facility

in accordance with the Water and Wastewater Facility Operators Regulation under *The Environment Act*.

Dated at **Winnipeg, Manitoba** this **30th** day of **May 2016**.

Certificate No.: **2016-011**



Director

Manitoba Sustainable Development



Conservation and Climate

Office of Drinking Water

1007 Century Street, Winnipeg, Manitoba R3H 0W4

**OPERATING LICENCE FOR
A PUBLIC WATER SYSTEM**

LICENCE NUMBER: PWS-11-485-02

**THE DRINKING WATER SAFETY ACT
CHAPTER D101, C.C.S.M.**

WATER SYSTEM CODE: 151.25
OPERATION ID: 42862
EFFECTIVE DATE: DECEMBER 1, 2021
EXPIRY DATE: FEBRUARY 28, 2026

IN ACCORDANCE WITH THE DRINKING WATER SAFETY ACT, THIS OPERATING LICENCE IS ISSUED PURSUANT TO SUBSECTION 8(1) TO:

TOWN OF NIVERVILLE: "THE LICENSEE"

FOR THE OPERATION OF THE **NIVERVILLE SPRUCE DRIVE PUBLIC WATER SYSTEM**, WHICH INCLUDES SECURE WELLS, TREATMENT FACILITIES, WATER STORAGE RESERVOIRS, AND DISTRIBUTION LINES, SUBJECT TO THE ATTACHED TERMS AND CONDITIONS.

THIS LICENCE DOES NOT AFFECT THE LICENSEE'S OBLIGATIONS WITH RESPECT TO COMPLIANCE WITH ALL APPLICABLE MUNICIPAL, PROVINCIAL, AND FEDERAL LEGISLATION. THIS LICENCE SUPERSEDES ALL PREVIOUS LICENCES FOR THIS PUBLIC WATER SYSTEM.

DATE: November 22, 2021

Siobhan
Burland Ross
Siobhan Burland Ross, P.Eng.
A/Director

Digitally signed by
Siobhan Burland Ross
Date: 2021.11.22 08:43:19
-05'00'

TERMS AND CONDITIONS

1. GENERAL

- 1.1. The Licensee shall operate the public water system in accordance with all applicable requirements of The Drinking Water Safety Act and its regulations, and the requirements of this licence. In the event that specific terms and conditions of this licence imposed under the authority of subsection 8(3) of the Act exceed the general requirements of the Act and regulations, the specific requirements of this licence shall apply.
- 1.2. The Licensee shall obtain approval from the Office of Drinking Water prior to making any significant alterations to the water source, the water treatment process, the water storage facilities, or the water distribution system.
- 1.3. This licence may be amended by the director where, in the opinion of the director, an amendment is necessary and the amendment will not negatively impact the safety of water obtained from the water system, or effective environmental management.
- 1.4. The Licensee may request an amendment to this licence by submitting an amendment application to the Office of Drinking Water.
- 1.5. This licence may be suspended or cancelled by the director for any of the reasons identified in Section 11 of Manitoba Regulation 40/2007, Drinking Water Safety Regulation or due to a failure to comply with any term or condition of this licence.
- 1.6. The Licensee shall provide written notice to the Office of Drinking Water of any change in ownership of the water system within seven days of the transfer of ownership.
- 1.7. The Licensee shall provide written notice to the Office of Drinking Water of any changes in the operational status of the water system, such as a permanent cessation of service, or changing the length of service from year-round to seasonal or the opposite.
- 1.8. The director of the Office of Drinking Water, medical officer of health or drinking water officer may enter any water system facility as necessary to carry out the provisions of The Drinking Water Safety Act and its regulations.
- 1.9. The Licensee shall post a copy of the first page of this licence at the water treatment facility.
- 1.10. The Licensee shall keep a copy of this licence in its entirety at a location established by the drinking water officer and ensure all operators are familiar with its terms and conditions.
- 1.11. The Licensee shall apply for renewal of this licence at least 60 days prior to its expiry.

2. OPERATION - GENERAL

- 2.1. The Licensee shall operate all water system facilities, control systems and equipment as efficiently as possible, inspect them on a regular basis, maintain them in good working order, and ensure that the water system is protected from the risks associated with cross-contamination.
- 2.2. The Licensee shall ensure that all chemicals and components that may come into contact with potable water are certified safe for potable water use through AWWA Standards, ANSI/NSF Standard 60 or 61, Health Canada, or other standards acceptable to the director.
- 2.3. No alternate water source shall be brought into service without the consent of the drinking water officer and the maintenance of adequate cross connection control between the alternate source and the primary source.
- 2.4. The Licensee shall have re-assessments of the water system infrastructure and water supply sources completed by a qualified person, who is not an employee of the water system, in accordance with assessment checklist GW by March 1, 2024, and every five years thereafter. The Licensee may instead have the assessment completed by a qualified professional engineer, who is not an employee of the water system, in accordance with terms of reference for engineering assessments.
- 2.5. The Licensee shall, upon request from the Office of Drinking Water, submit or re-submit a compliance plan, in a form satisfactory to the director, to address any non-compliance issues identified at the time.

3. OPERATION – EMERGENCIES

- 3.1. The Licensee shall ensure that disinfection is undertaken following construction, repair or maintenance activities on the water system, in accordance with applicable AWWA standards, or Manitoba Water Services Board specifications, or any other standards approved by the director. A copy of all associated test results must be kept available for review by the Office of Drinking Water for a minimum of 24 months.
- 3.2. The Licensee shall ensure that all equipment used for disinfection is maintained in effective working order and keep available for immediate use all spare parts and chemical supplies as may be necessary to ensure continuous disinfection, including a spare disinfection unit, if necessary.
- 3.3. The Licensee shall immediately notify the Office of Drinking Water of any condition that may affect the ability of the water system to produce or deliver safe drinking water including but not limited to treatment upsets or bypass conditions, contamination of the source water or treated water, a disinfection system failure, or a distribution system failure.
- 3.4. If a medical officer of health, the director of the Office of Drinking Water, or a drinking water officer issues a water advisory on the water system, the Licensee shall provide notice of the advisory to all water users in accordance with the advisory notification plan or by a method acceptable to the issuer.

4. WATER QUALITY/TREATMENT STANDARDS

- 4.1. The Licensee shall operate the water system in a manner that achieves the water quality/treatment standards specified in Table 1, as determined through the monitoring requirements specified in Table 2:

Table 1: Water Quality/Treatment Standards

Parameter	Quality Standard
Total coliform	Less than one total coliform bacteria detectable per 100 mL in all treated and distributed water
<i>E. coli</i>	Less than one <i>E. coli</i> bacteria detectable per 100 mL in all treated and distributed water
Chlorine Residual	A free chlorine residual of at least 0.5 mg/L in water entering the distribution system following a minimum contact time of 20 minutes A free chlorine residual of at least 0.1 mg/L at all times at any point in the water distribution system
Arsenic	Less than or equal to 0.01 mg/L
Benzene	Less than or equal to 0.005 mg/L
Ethylbenzene	Less than or equal to 0.14 mg/L
Fluoride	Less than or equal to 1.5 mg/L
Lead	Less than or equal to 0.005 mg/L
Manganese	Less than or equal to 0.12 mg/L
Nitrate	Less than or equal to 45 mg/L measured as nitrate (10 mg/L measured as nitrogen)
Nitrite	Less than or equal to 3 mg/L measured as nitrite (1 mg/L measured as nitrogen)
Trichloroethylene	Less than or equal to 0.005 mg/L
Tetrachloroethylene	Less than or equal to 0.01 mg/L
Toluene	Less than or equal to 0.06 mg/L
Total Xylenes	Less than or equal to 0.09 mg/L
Uranium	Less than or equal to 0.02 mg/L

- 4.2. If a bacteriological standard is not met, the Licensee shall immediately undertake the applicable corrective actions as listed in "Schedule A" of Manitoba Regulation 41/2007, Drinking Water Quality Standards Regulation.
- 4.3. If a microbial, chemical, radiological, or physical standard is not met, the Licensee shall immediately undertake the applicable corrective actions specified in "Schedule C" of Manitoba Regulation 41/2007, the Drinking Water Quality Standards Regulation.
- 4.4. The Licensee shall maintain in effective working order chlorination and treated water storage equipment and controls designed to achieve a minimum of 20 minutes of chlorine contact time prior to water entering the distribution system.

5. WATER QUALITY MONITORING

5.1. The Licensee shall ensure monitoring is completed as set out in Table 2.

Table 2: Monitoring Schedule

Parameter	Monitoring Requirement
Bacteriological (total coliform and <i>E. coli</i>)	Biweekly sampling program with each set of samples consisting of one raw, one treated, and a minimum of one distribution sample Consecutive sample sets to be separated by at least 12 days
Free Chlorine (treated water)	One sample per day of water entering the distribution system following at least 20 minutes of contact time
Free Chlorine (distribution system)	At the same times and location(s) as bacteriological distribution system sampling
Total Chlorine (treated water)	One sample per day of water entering the distribution system following at least 20 minutes of contact time
Total Chlorine (distribution system)	At the same times and location(s) as bacteriological distribution system sampling
Free Ammonia (treated water)	One sample per week of water entering the distribution system
General Chemistry (parameter list provided by Office of Drinking Water)	One raw and one treated water sample once every three years
Total Metals (distribution system)	One sample taken at the same time(s) as General Chemistry sampling at a mid-point in the distribution system
Lead	As per the instructions of the drinking water officer
Manganese	Monitoring included in the General Chemical and Total Metals analysis
Other Parameters	As per the instructions of the drinking water officer

5.2. The Licensee shall ensure that an accredited laboratory, as specified in section 35 of Manitoba Regulation 40/2007 the Drinking Water Safety Regulation, undertake the following analysis required in Table 2:

- bacteriological (total coliform and *E. coli*)
- general chemistry
- manganese
- total metals
- any other parameter required by the drinking water officer

and that all samples are collected, handled, and submitted in a manner that is satisfactory to the accredited laboratory.

5.3. The Licensee shall ensure that parameters listed in Table 2 but not specified in clause 5.2 are measured utilizing certified water quality monitoring equipment and methods approved by the latest edition of *Standard Methods for the Examination of Water and Wastewater* published jointly by the American Public Health Association, the American Water Works Association and the Water Environment Federation.

5.4. The Licensee shall ensure that all water quality monitoring equipment is properly maintained and calibrated by a qualified person according to manufacturer recommendations and that records are maintained to that effect.

5.5. The Licensee shall ensure that sampling within the distribution system takes place at varied locations acceptable to the drinking water officer.

6. RECORD-KEEPING AND REPORTING

- 6.1. The Licensee shall maintain in a secure location all construction drawings for the life of the water system components.
- 6.2. The Licensee shall retain in chronological order for a minimum of 24 months all information specified in subsection 34(2) of Manitoba Regulation 40/2007, Drinking Water Safety Regulation.
- 6.3. The Licensee shall ensure the information identified in clause 6.2 is available for inspection by any member of the public during normal business hours at the office of the water supplier or at a location convenient to the users of the system.
- 6.4. The Licensee shall record disinfectant residual measurements on the monthly disinfection report or other forms satisfactory to the director.
- 6.5. The Licensee shall record other measurements as specified in *Table 2: Monitoring Schedule* on the monthly report forms or other forms satisfactory to the director.
- 6.6. The Licensee shall keep one copy of all monthly report forms required in this licence, and forward the original copy to the drinking water officer within seven days after the end of each calendar month.
- 6.7. The Licensee shall record all distribution system measurements specified in *Table 2: Monitoring Schedule* on the chain of custody form (laboratory submission form) which accompanies the bacteriological sample bottles to the laboratory.
- 6.8. The Licensee shall ensure that water metering devices at the water treatment plant or storage reservoir are maintained in good working order and that flow meter readings are recorded on a daily basis and such records are made available for inspection by a drinking water officer.
- 6.9. The Licensee shall submit an annual report to the director by March 31st of each year on the operation of the water system in the immediately preceding calendar year. The report shall include the information as set out in subsection 32(2) of Manitoba Regulation 40/2007, Drinking Water Safety Regulation.
- 6.10. The Licensee shall inform the public, in a form satisfactory to the director, when an annual report has been prepared and identify how a free copy can be obtained.
- 6.11. The Licensee shall make a copy of each annual report available to the public at no charge on an internet website within two weeks of the issuance of the report, unless otherwise approved by the director. The annual report shall remain available to the public for at least one year.
- 6.12. The Licensee shall maintain and submit an advisory notification plan to the drinking water officer by May 1st of each year. The plan must include a detailed description of communication tools and methods to be used to notify the public of a drinking water emergency, considering key contacts, fan-outs, critical customers, susceptible or difficult-to-reach sub-groups, and template notices where applicable.

Monthly Chlorination Report

Water System Name: Sp. Vee Drive WTP Water System Code: 151.25

Month: January Year: 2023 Type of Measurement Device: Hach DR890

Operator-in-charge (Print): Ryan Dyck Other Operators (Print): Andrew Rempel

Daily Consumption Units: Cubic Meter

Flow Meter for Daily Consumption: (circle choice) Raw Treated No Metering

Date	Time	Initials	Residuals (mg/L)		Daily Consumption
			Free	Total	
1	9:00am	KV	0.85	1.01	367
2	7:27am	AR	0.79	0.92	557
3	7:25am	AR	0.84	1.02	677
4	7:22am	AR	0.79	0.94	601
5	7:16am	AR	0.82	0.96	634
6	7:18am	AR	0.75	0.88	609
7	6:05am	CE	0.86	0.94	560
8	7:01am	Jm.	.75	1.11	676
9	7:30am	AR	0.98	1.16	747
10	7:41am	AR	0.89	0.97	631
1	7:08am	AR	0.92	1.07	597
12	7:20am	AR	0.90	1.06	625
13	7:45am	AR	0.84	0.99	639
14	6:09am	KP	0.91	1.06	533
15	4:14pm	SO	0.87	0.84	1049
16	8:50am	AR	0.88	1.03	441

Date	Time	Initials	Residuals (mg/L)		Daily Consumption
			Free	Total	
17	7:14am	AR	0.90	1.05	534
18	7:14am	AR	0.85	1.01	586
19	7:50am	AR	0.88	1.04	623
20	7:08am	AR	1.08	1.25	589
21	6:00am	CE	.95	1.05	542
22	7:05am	Jm.	.88	1.03	661
23	8:21am	AR	0.87	1.06	769
24	8:35am	AR	0.80	1.00	611
25	8:31am	AR	0.77	0.91	591
26	8:07am	AR	0.78	0.97	594
27	9:00am	AR	0.92	1.08	670
28	6:15am	KP	0.89	1.05	485
29	6:40am	CE	.96	1.05	662
30	7:37am	AR	0.84	1.02	764
31	7:22am	AR	0.83	0.97	601
Total Monthly Consumption					19,225

Ammonia in Treated Water

Date	Time	Initials	Ammonia (mg/L)
3	7:50am	AR	0.00
10	7:59am	AR	0.01

Date	Time	Initials	Ammonia (mg/L)
17	7:29am	AR	0.01
24	8:47am	AR	0.00

Date	Time	Initials	Ammonia (mg/L)
31	7:39am	AR	0.01

Residuals at Distribution Sample Locations

Date	Time	Initials	Location	Residuals (mg/L)	
				Free	Total
10	7:16am	AR	22 Prestwick Street	0.23	0.25
24	8:17am	AR	1 Arena Road	0.78	0.94

Submitted by (Print): Andrew Rempel Signature: Andrew Rempel

PLEASE REFER TO OPERATING LICENCE FOR APPLICABLE TREATMENT STANDARDS AND MONITORING REQUIREMENTS.
PLEASE CONTACT YOUR DRINKING WATER OFFICER WITH ANY COMMENTS, QUESTIONS OR CONCERNS.

Monthly Chlorination Report

Water System Name: Spruce Drive WTP Water System Code: 151.25

Month: February Year: 2023 Type of Measurement Device: Hach DR890

Operator-in-charge (Print): Ryan Dyck Other Operators (Print): Andrew Rempel

Daily Consumption Units: Cubic Meter

Flow Meter for Daily Consumption: (circle choice) Raw Treated No Metering

Date	Time	Initials	Residuals (mg/L)		Daily Consumption
			Free	Total	
1	7:48am	AR	0.88	0.98	612
2	7:53am	AR	0.81	0.99	612
3	7:30am	AR	0.80	0.92	578
4	5:55Am	CE	0.83	0.90	565
5	6:30am	Jm	0.75	0.85	671
6	8:49am	AR	0.66	0.77	810
7	7:38am	AR	0.74	0.87	555
8	7:16am	AR	0.80	0.95	574
9	7:12am	AR	0.94	1.10	584
10	7:15am	AR	0.92	1.08	628
11	6:02am	KP	0.86	0.93	586
12	8:03am	Jm	.85	.97	689
13	7:26am	AR	0.87	1.05	691
14	7:15am	JK	0.86	1.02	603
15	7:16am	JK	0.89	.99	581
16	7:19am	JK	0.85	0.96	617

Date	Time	Initials	Residuals (mg/L)		Daily Consumption
			Free	Total	
17	7:11am	JK	.85	.97	601
18	6:58am	CE	.77	.83	557
19	5:59am	Jm	.78	.91	635
20	9:03Am	SO	0.69	0.79	721
21	8:25am	AR	0.68	0.76	724
22	7:15am	AR	0.66	0.79	550
23	7:15am	AR	0.65	0.80	621
24	7:17am	JK	0.84	0.96	617
25	6:05am	KP	0.91	0.99	543
26	6:30am	Jm	.92	1.01	628
27	7:20am	JK	.95	1.01	719
28	7:18am	JK	.85	.97	630
29	7:15am	JK			608
30					
31					
Total Monthly Consumption					17,502

Ammonia in Treated Water

Date	Time	Initials	Ammonia (mg/L)
7	7:53am	AR	0.00
14	7:49am	AR	0.00

Date	Time	Initials	Ammonia (mg/L)
21	8:42am	AR	0.00
28	7:45am	JK	0.00

Date	Time	Initials	Ammonia (mg/L)

Residuals at Distribution Sample Locations

Date	Time	Initials	Location	Residuals (mg/L)	
				Free	Total
7	7:24am	AR	108 Claremont Drive	0.69	0.80
21	8:15am	AR	25 Prestwick St	0.52	0.54

Submitted by (Print): Andrew Rempel

Signature: Andrew Rempel

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PLEASE CONTACT YOUR DRINKING WATER OFFICER WITH ANY COMMENTS, QUESTIONS OR CONCERNS.

Monthly Chlorination Report

Water System Name: Spruce Drive WTP Water System Code: 151.25

Month: March Year: 2023 Type of Measurement Device: Heck DR890

Operator-in-charge (Print): Ryan Dyck Other Operators (Print): Andrew Rempel

Daily Consumption Units: Cubic Meters

Flow Meter for Daily Consumption: (circle choice) Raw Treated No Metering

Date	Time	Initials	Residuals (mg/L)		Daily Consumption
			Free	Total	
1	7:15am	JK	.78	.92	608
2	7:08am	JK	.80	.89	614
3	7:12am	JK	.78	.90	621
4	5:53am	CE	.78	.86	552
5	6:55am	JM	.75	.90	660
6	7:15am	JK	.81	.94	726
7	7:32am	AR	0.74	0.80	636
8	7:22am	JK	1.02	1.09	596
9	7:15am	JK	.97	1.15	595
10	7:48am	JK	1.05	1.23	580
	6:28am	KP	1.25	1.32	539
12	7:00am	JM	1.21	1.38	632
13	7:40am	JK	1.28	1.47	737
14	7:15am	JK	1.15	1.40	588
15	7:12am	JK	1.13	1.35	594
16	7:12am	JK	1.12	1.34	636

Date	Time	Initials	Residuals (mg/L)		Daily Consumption
			Free	Total	
17	7:13am	JK	1.10	1.30	614
18	5:57am	CE	.98	1.16	543
19	11:09am	KP	0.83	0.97	824
20	7:15am	JK	0.90	1.07	566
21	7:20am	JK	1.03	1.16	618
22	7:10am	JK	0.97	1.15	604
23	7:23am	JK	0.92	1.09	625
24	7:15am	JK	0.84	0.97	616
25	7:02am	JP	0.74	0.86	571
26	9:47am	JK	0.85	0.98	751
27	7:12am	JK	0.91	0.98	617
28	7:10am	JK	0.84	0.98	606
29	7:13am	JK	0.84	0.92	579
30	7:17am	JK	0.86	0.90	571
31	7:13am	JK	0.82	0.91	585
Total Monthly Consumption					19,204

Ammonia in Treated Water

Date	Time	Initials	Ammonia (mg/L)
7	7:47am	AR	0.00
14	7:30am	JK	0.01

Date	Time	Initials	Ammonia (mg/L)
21	7:35am	JK	0.00
29	7:20am	JK	0.01

Date	Time	Initials	Ammonia (mg/L)

Residuals at Distribution Sample Locations

Date	Time	Initials	Location	Residuals (mg/L)	
				Free	Total
7	7:17am	AR	1 Arena Road	0.71	0.82
21	6:55am	AR	329 Bronstone	0.83	0.95

Submitted by (Print): Andrew Rempel Signature: Andrew Rempel

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Niverville WTP - Chlorine Report - April 2023

Water System Code: 151.25

Instrument Location: Distribution Chlorine

Lead Operator: Ryan Dyck
Other Operators: Andrew Rempel

		Chlorine, ppm										
Day of Month	Time	Operator Initials	Distribution Chlorine								Daily Usage (m³)	
			Total Chlorine	Operator Verification		Automation Records		Number of Free Chlorine Readings				
				Handheld	Display	Average	Minimum	Total	Below Standard	% Within Standard		
1	12:40 PM	BM	0.99	0.77	0.78	0.78	0.80	288	0	100.0	79.7	
2	8:00 AM	CE	0.93	0.83	0.75	0.75	0.77	288	0	100.0	53.3	
3	7:15 AM	JK	0.92	0.79	0.75	0.78	0.81	288	0	100.0	72.0	
4	7:24 AM	JK	0.98	0.79	0.78	0.77	0.80	288	0	100.0	63.0	
5	8:05 AM	JK	0.91	0.75	0.79	0.79	0.82	288	0	100.0	61.2	
6	7:35 AM	JK	0.98	0.83	0.83	0.83	0.86	288	0	100.0	64.0	
7	6:20 AM	KN	1.02	0.85	0.80	0.81	0.84	288	0	100.0	60.0	
8	7:00 AM	JM	1.04	0.88	0.83	0.85	0.88	288	0	100.0	67.8	
9	9:00 AM	JM	1.07	0.92	0.89	0.88	0.90	288	0	100.0	72.3	
10	7:22 AM	JK	1.14	0.93	0.91	0.92	0.94	288	0	100.0	64.4	
11	7:16 AM	JK	1.16	0.96	0.95	0.95	0.96	288	0	100.0	65.8	
12	7:13 AM	JK	1.11	0.92	0.91	0.89	0.94	288	0	100.0	61.9	
13	7:12 AM	JK	1.08	0.95	0.87	0.92	0.96	288	0	100.0	61.0	
14	7:12 AM	JK	1.06	0.89	0.93	0.89	0.94	288	0	100.0	60.0	
15	7:29 AM	KP	1.01	0.71	0.83	0.82	0.84	288	0	100.0	57.7	
16	3:16 PM	BM	0.98	0.82	0.82	0.82	0.84	288	0	100.0	100.9	
17	7:16 AM	JK	0.96	0.81	0.82	0.81	0.84	288	0	100.0	41.2	
18	7:38 AM	JK	0.90	0.82	0.79	0.84	0.96	288	0	100.0	69.6	
19	7:20 AM	JK	0.95	0.82	0.90	0.85	0.91	288	0	100.0	61.0	
20	7:12 AM	JK	0.93	0.79	0.83	0.78	0.84	288	0	100.0	62.2	
21	7:18 AM	JK	0.97	0.82	0.75	0.81	0.86	288	0	100.0	64.3	
22	6:00 AM	CE	0.94	0.82	0.86	0.86	0.90	288	0	100.0	58.4	
23	3:20 AM	BM	1.00	0.88	0.87	0.87	0.90	288	0	100.0	107.0	
24	7:20 AM	JK	1.02	0.87	0.88	0.87	0.90	288	0	100.0	43.7	
25	7:15 AM	JK	1.00	0.81	0.89	0.88	0.90	288	0	100.0	61.9	
26	7:12 AM	JK	1.01	0.84	0.85	0.85	0.87	288	0	100.0	62.5	
27	7:13 AM	JK	1.01	0.89	0.86	0.86	0.88	288	0	100.0	61.9	
28	7:15 AM	JK	0.99	0.85	0.87	0.87	0.89	288	0	100.0	63.4	
29	3:20 PM	BM	1.00	0.85	0.89	0.88	0.94	288	0	100.0	93.4	
30	8:00 AM	JM	1.07	0.92	0.96	1.00	1.07	288	0	100.0	36.0	
Monthly Total								8640	0			
Compliance with Chlorine Standard:										100.0%		

Submitted by (Print): Andrew Rempel

Signature: 

Niverville WTP - Chlorine Report - May 2023

Water System Code: 151.25

Lead Operator: Ryan Dyck

Instrument Location: Distribution Chlorine

Other Operators: Andrew Rempel

Chlorine, ppm										
Day of Month	Time	Operator Initials	Total Chlorine	Distribution Chlorine				Number of Free Chlorine Readings		
				Operator Verification		Automation Records		Total	Below Standard	% Within Standard
				Handheld	Display	Average	Minimum			
1	7:23 AM	JK	1.21	1.07	1.08	1.07	1.10	288	0	100.0
2	7:40 AM	JK	1.23	1.07	1.07	1.08	1.11	288	0	100.0
3	7:20 AM	JK	1.22	1.09	1.13	1.11	1.15	288	0	100.0
4	7:20 AM	JK	1.30	1.12	1.07	1.08	1.12	288	0	100.0
5	7:05 AM	AR	1.25	1.01	1.06	1.13	1.40	288	0	100.0
6	7:00 AM	JM	1.18	1.04	1.09	1.07	1.10	288	0	100.0
7	3:20 PM	BM	1.29	1.19	1.02	1.03	1.04	288	0	100.0
8	7:19 AM	JK	1.20	1.06	1.06	1.06	1.10	288	0	100.0
9	7:16 AM	JK	1.25	1.09	1.11	1.09	1.12	288	0	100.0
10	7:20 AM	JK	1.30	1.09	1.05	1.07	1.10	288	0	100.0
11	7:23 AM	JK	1.23	1.06	1.11	1.06	1.11	288	0	100.0
12	7:13 AM	JK	1.22	1.06	1.01	1.03	1.07	288	0	100.0
13	6:58 AM	KP	1.20	1.01	1.05	1.05	1.07	288	0	100.0
14	7:02 AM	JM	0.93	0.84	1.06	1.06	1.07	288	0	100.0
15	7:15 AM	JK	1.29	1.11	1.06	1.09	1.15	288	0	100.0
16	7:35 AM	JK	1.31	1.15	1.16	1.16	1.21	288	0	100.0
17	7:15 AM	JK	1.40	1.16	1.19	1.15	1.22	288	0	100.0
18	7:20 AM	JK	1.35	1.13	1.16	1.18	3.30	288	1	99.7
19	7:18 AM	JK	1.38	1.09	1.16	1.10	1.18	288	0	100.0
20	7:20 AM	JK	1.39	1.10	1.04	1.07	1.11	288	0	100.0
21	2:30 PM	BM	1.21	1.00	1.04	1.03	1.06	288	0	100.0
22	3:25 PM	BM	1.35	1.24	0.99	0.96	1.02	288	0	100.0
23	7:17 AM	JK	1.46	1.19	0.88	1.08	1.20	288	0	100.0
24	7:18 AM	JK	1.53	1.22	1.12	1.16	1.23	288	0	100.0
25	7:18 AM	JK	1.57	1.27	1.08	1.21	1.29	288	0	100.0
26	7:26 AM	JK	1.57	1.25	1.25	1.22	1.26	288	0	100.0
27	7:28 AM	JK	1.61	1.30	1.16	1.19	2.62	288	0	100.0
28	5:01 PM	BM	1.42	1.24	0.81	0.86	0.99	288	0	100.0
29	7:15 AM	JK	1.27	1.07	0.73	0.91	1.07	288	0	100.0
30	7:30 AM	JK	1.28	1.12	0.94	1.04	1.12	288	0	100.0
31	7:18 AM	JK	1.31	1.00		1.09	1.12	288	0	100.0
Monthly Total								8928	1	
Compliance with Chlorine Standard:										100.0%

Submitted by (Print): Andrew Rempel

Signature: *Andrew Rempel*

CORRECTIVE ACTION REPORT



Water Stewardship

WATER SYSTEM: Niverville WTP

WATER SYSTEM CODE: 151.25

LOCATION OF NON-COMPLIANCE INCIDENT (ex. Water Plant): Water Treatment Plant

OPERATOR: Andrew Rempel

Signature: Andrew Rempel

TYPE OF NON-COMPLIANCE INCIDENT:



Low disinfectant residual entering the distribution system, 21(1) MR 40/2007



Low disinfectant residual in the distribution system, 22 MR 40/2007



Filtered water turbidity exceeding the turbidity standard, 6(1) MR 41/2007



Low positive total coliform (< 10 CFU/100mL), 3 MR 41/2007



Other

INITIAL TEST RESULTS:

DATE: May 18, 2023

DESCRIPTION OF CORRECTIVE ACTIONS TAKEN (attach additional sheets if required):

On May 18 2023, I cleaned and calibrated our chlorine analyzer which caused our readings to range from 0.0 to 330 mg/L.

TEST RESULTS AFTER CORRECTIVE ACTIONS:

DATE: _____

(attach laboratory results if applicable)

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING.

DISTRIBUTION:

FORWARD THE ORIGINAL TO YOUR DRINKING WATER OFFICER WITH YOUR MONTHLY DISINFECTION OR TURBIDITY MONITORING REPORT
RETAIN A COPY FOR YOUR RECORDS

Contact your Drinking Water Officer with any comments, questions or concerns.

Niverville WTP - Chlorine Report - June 2023

Water System Code: 151.25
 Instrument Location: Distribution Chlorine

Lead Operator: Ryan Dyck
 Other Operators: Andrew Rempel

		Chlorine, ppm									
Day of Month	Time	Operator Initials	Distribution Chlorine								
			Operator Verification		Automation Records		Number of Free Chlorine Readings				
			Handheld	Display	Average	Minimum	Total	Below Standard	% Within Standard	Daily Usage (m³)	
1	7:17 AM	JK	1.35	1.11	1.07	1.09	1.15	288	0	100.0	746
2	7:15 AM	JK	1.33	1.06	1.13	1.11	1.14	288	0	100.0	747
3	2:01 PM	BM	1.49	1.30	1.09	1.09	1.13	288	0	100.0	1231
4	3:46 PM	BM	1.18	1.12	1.12	1.09	1.13	288	0	100.0	484
5	7:18 AM	JK	1.45	1.11	1.09	1.06	1.10	288	0	100.0	461
6	7:55 AM	JK	1.42	1.14	1.03	1.07	1.14	288	0	100.0	828
7	7:52 AM	JK	1.17	0.99	1.04	1.00	1.06	288	0	100.0	823
8	7:38 AM	JK	1.03	0.83	0.88	0.83	0.89	288	0	100.0	749
9	7:15 AM	JK	0.83	0.66	0.73	0.65	0.76	288	0	100.0	749
10	9:30 AM	KP	0.72	0.65	0.55	0.54	0.56	288	0	100.0	918
11	2:15 AM	BM	0.47	0.42	0.43	0.44	0.52	288	0	100.0	1173
12	7:13 AM	JH	0.38	0.29	0.30	0.36	0.42	288	0	100.0	814
13	7:25 AM	JK	0.69	0.60	0.58	0.55	0.77	288	0	100.0	995
14	7:30 AM	JK	0.71	0.65	0.63	0.67	0.81	288	0	100.0	961
15	7:18 AM	JK	0.99	0.81	0.79	0.89	1.04	288	0	100.0	903
16	7:11 AM	AR	1.44	1.24	1.10	1.22	1.33	288	0	100.0	932
17	7:27 AM	JK	1.56	1.29	1.32	1.33	1.39	288	0	100.0	846
18	8:05 AM	JH	1.74	1.50	1.44	1.43	1.47	288	0	100.0	964
19	7:12 AM	JK	1.68	1.41	1.32	1.35	1.40	288	0	100.0	1172
20	7:10 AM	JK	1.51	1.27	1.34	1.31	1.35	288	0	100.0	1068
21	7:12 AM	JK	1.55	1.26	1.31	1.27	1.34	288	0	100.0	1020
22	7:15 AM	JK	1.64	1.35	1.25	1.31	1.37	288	0	100.0	969
23	7:10 AM	JK	1.57	1.33	1.40	1.31	1.40	288	0	100.0	725
24	7:45 AM	JK	1.54	1.30	1.28	1.26	1.28	288	0	100.0	861
25	7:46 AM	JH	1.58	1.32	1.28	1.25	1.29	288	0	100.0	785
26	7:11 AM	JK	1.55	1.30	1.23	1.21	1.23	288	0	100.0	1003
27	7:45 AM	JK	1.53	1.29	1.28	1.23	1.26	288	0	100.0	1010
28	7:17 AM	JK	1.49	1.28	1.22	1.25	1.33	288	0	100.0	936
29	7:30 AM	JK	1.46	1.22	1.27	1.25	1.30	288	0	100.0	916
30	7:12 AM	KP	1.38	1.18	1.24	1.22	1.26	288	0	100.0	837
Monthly Total								8640	0		
Compliance with Chlorine Standard:										100.0%	

Submitted by (Print): Andrew RempelSignature: Andrew Rempel

CORRECTIVE ACTION REPORT



WATER SYSTEM: Spruce Drive WTP WATER SYSTEM CODE: 151.25

LOCATION OF NON-COMPLIANCE INCIDENT (ex. Water Plant): Water Plant

OPERATOR: Andrew Rempel Signature: Andrew Rempel

TYPE OF NON-COMPLIANCE INCIDENT:

<input checked="" type="checkbox"/>	Low disinfectant residual entering the distribution system, 21(1) MR 40/2007
<input type="checkbox"/>	Low disinfectant residual in the distribution system, 22 MR 40/2007
<input type="checkbox"/>	Filtered water turbidity exceeding the turbidity standard, 6(1) MR 41/2007
<input type="checkbox"/>	Low positive total coliform (< 10 CFU/100mL), 3 MR 41/2007
<input type="checkbox"/>	Other

INITIAL TEST RESULTS:

DATE: June 11 + 12 / 2023

DESCRIPTION OF CORRECTIVE ACTIONS TAKEN (attach additional sheets if required):

On June 8, I noticed the chlorine levels start to drop more than usual. I increased the flow of chlorine to compensate for the drop. On June 9th I diagnosed the entire chlorine system and found a broken fitting on the injection line. The fitting was replaced and tested, and the chlorine system was dosing correctly. Over the weekend levels were still dropping and the chlorine strength was tested. After testing it was determined that the strength of chlorine was significantly lower than 12%. Chlorine barrels were switched and tested and chlorine was added to the reservoir. Chlorine system was then completely inspected and tested to ensure proper dosing was happening. Chlorine levels started to stabilize on June 13/23.

TEST RESULTS AFTER CORRECTIVE ACTIONS:

0.60

DATE: June 13 2023

(attach laboratory results if applicable)

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING.

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FORWARD THE ORIGINAL TO YOUR DRINKING WATER OFFICER WITH YOUR MONTHLY DISINFECTION OR TURBIDITY MONITORING REPORT
RETAIN A COPY FOR YOUR RECORDS

Contact your Drinking Water Officer with any comments, questions or concerns.

Niverville WTP - Chlorine Report - July 2023

Water System Code: 151.25

Instrument Location: Distribution Chlorine

Lead Operator: Ryan Dyck

Other Operators: Andrew Rempel

			Chlorine, ppm										
			Distribution Chlorine										
Day of Month	Time	Operator Initials	Operator Verification		Automation Records		Number of Free Chlorine Readings			Daily Usage (m³)			
			Handheld	Display	Average	Minimum	Total	Below Standard	% Within Standard				
1	8:47 AM	JK	1.14	1.23	1.15	1.24	288	0	100.0	998			
2	8:14 AM	JH	1.08	1.08	1.05	1.11	288	0	100.0	1069			
3	7:17 AM	JK	0.97	0.91	0.79	0.99	288	0	100.0	972			
4	7:20 AM	JK	0.67	0.70	0.54	2.88	288	9	96.9	1266			
5	7:22 AM	JK	0.80	0.79	0.78	0.82	288	0	100.0	875			
6	7:10 AM	AR	0.84	0.82	0.89	1.00	288	0	100.0	871			
7	7:08 AM	JWH	0.98	0.96	0.99	1.05	288	0	100.0	879			
8	10:50 AM	RD	1.00	1.07	1.05	1.11	288	0	100.0	995			
9	8:31 AM	JH	1.17	1.10	0.98	1.10	288	0	100.0	969			
10	7:13 AM	AR	0.61	0.60	0.95	1.39	288	0	100.0	970			
11	7:13 AM	JWH	1.04	0.86	0.98	1.10	288	0	100.0	791			
12	7:20 AM	JK	1.04	1.10	1.08	1.11	288	0	100.0	1008			
13	7:11 AM	JWH	1.09	1.11	1.12	1.15	288	0	100.0	8648.0			
14	7:11 AM	JWH	1.16	1.15	1.18	1.25	288	0	100.0	8166.6			
15	7:24 AM	JWH	1.25	1.27	1.30	1.38	288	0	100.0	8173.6			
16	8:02 AM	JH	1.40	1.35	1.37	1.40	288	0	100.0	7824.5			
17	7:14 AM	JK	1.36	1.41	1.37	1.43	288	0	100.0	8237.9			
18	7:41 AM	JK	1.49	1.40	1.44	1.49	288	0	100.0	7167.2			
19	7:55 AM	JK	1.47	1.46	1.47	1.51	288	0	100.0	6954.5			
20	7:17 AM	JK	1.52	1.52	1.52	1.54	288	0	100.0	7381.6			
21	7:10 AM	JK	1.53	1.49	1.49	1.53	288	0	100.0	7910.4			
22	7:18 AM	JWH	1.43	1.48	1.46	1.50	288	0	100.0	8648.0			
23	7:47 AM	JH	1.48	1.36	1.33	1.41	288	0	100.0	9298.5			
24	7:10 AM	JK	1.31	1.29	1.26	1.32	288	0	100.0	9639.3			
25	7:31 AM	JK	1.27	1.23	1.25	1.74	288	0	100.0	6479.7			
26	7:10 AM	JK	1.19	1.07	1.14	1.19	288	0	100.0	7997.6			
27	7:07 AM	JK	1.08	1.16	1.08	1.17	288	0	100.0	8664.8			
28	7:07 AM	JK	1.00	0.94	0.98	1.01	288	0	100.0	8537.7			
29	7:10 AM	JWH	0.95	0.99	0.99	1.00	288	0	100.0	8888.1			
30	7:30 AM	JK	0.89	0.93	0.91	1.00	288	0	100.0	11245.0			
31	7:30 AM	JK	0.90	0.89	0.89	0.92	288	0	100.0	10571.4			
			Monthly Total				8928	9					
			Compliance with Chlorine Standard				99.9%						

Submitted by (Print): Andrew Rempel

Signature: 

CORRECTIVE ACTION REPORT



WATER SYSTEM: Spruce Drive WTP WATER SYSTEM CODE: 151.25
LOCATION OF NON-COMPLIANCE INCIDENT (ex. Water Plant): Water Plant
OPERATOR: Andrew Rempel Signature: Andrew Rempel

TYPE OF NON-COMPLIANCE INCIDENT:

- | | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Low disinfectant residual entering the distribution system, 21(1) MR 40/2007 |
| <input type="checkbox"/> | Low disinfectant residual in the distribution system, 22 MR 40/2007 |
| <input type="checkbox"/> | Filtered water turbidity exceeding the turbidity standard, 6(1) MR 41/2007 |
| <input type="checkbox"/> | Low positive total coliform (< 10 CFU/100mL), 3 MR 41/2007 |
| <input type="checkbox"/> | Other |

INITIAL TEST RESULTS:

9 below standard DATE: July 4 2023

DESCRIPTION OF CORRECTIVE ACTIONS TAKEN (attach additional sheets if required):

During the early morning of July 4, 2023, our Swan Chlorine analyzer had an air lock causing no water to flow through. This caused the display reading to read below 0.50. I took the unit apart, cleaned and calibrated and put back online. I verified with the handheld unit and found the free chlorine to be 0.67 mg/L. Chlorine dose was increased slightly to raise level a little higher.

TEST RESULTS AFTER CORRECTIVE ACTIONS:

DATE: _____

(attach laboratory results if applicable)

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING.

DISTRIBUTION:

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Niverville WTP - Chlorine Report - August 2023

Water System Code: 151.25

Instrument Location: Distribution Chlorine

Lead Operator: Ryan Dyck

Other Operators: Andrew Rempel

Chlorine, ppm												
Day of Month	Time	Operator Initials	Distribution Chlorine									
			Total Chlorine	Operator Verification		Automation Records		Number of Free Chlorine Readings			Daily Usage (m³)	
				Handheld	Display	Average	Minimum	Total	Below Standard	% Within Standard		
1	7:18 AM	JK	1.12	0.93	0.92	0.92	0.95	288	0	100.0	787.7	
2	7:23 AM	AR	1.16	0.91	0.89	0.90	0.93	288	0	100.0	895.4	
3	7:20 AM	JK	1.08	0.90	0.92	0.91	0.93	288	0	100.0	988.4	
4	7:25 AM	JK	1.12	0.86	0.90	0.88	0.91	288	0	100.0	1028.5	
5	8:42 AM	JWH	1.15	0.97	0.91	0.91	0.93	288	0	100.0	1002.1	
6	8:37 AM	JH	1.04	0.88	0.80	0.77	0.89	288	0	100.0	1101.1	
7	6:50 AM	JH	0.82	0.69	0.67	0.63	0.70	288	0	100.0	1169.8	
8	7:28 AM	AR	0.67	0.55	0.53	0.72	0.96	288	0	100.0	810.2	
9	7:16 AM	JK	0.97	0.83	0.85	0.84	0.92	288	0	100.0	778.7	
10	7:18 AM	JK	0.94	0.82	0.84	0.80	0.87	288	0	100.0	713.1	
11	7:18 AM	JK	0.90	0.77	0.78	0.77	0.80	288	0	100.0	659.4	
12	8:32 AM	JWH	0.92	0.79	0.85	0.86	0.91	288	0	100.0	681.6	
13	8:15 AM	JH	0.98	0.80	0.92	0.93	0.99	288	0	100.0	808.3	
14	7:33 AM	JK	1.13	0.96	1.02	1.01	1.06	288	0	100.0	824.3	
15	8:20 AM	RD	1.23	1.05	1.02	1.03	1.07	288	0	100.0	831.6	
16	7:23 AM	JK	1.17	1.00	1.02	1.04	1.16	288	0	100.0	773.3	
17	8:15 AM	RD	1.13	0.95	0.95	0.99	1.06	288	0	100.0	852.4	
18	7:25 AM	AR	1.12	0.95	0.94	0.99	1.49	288	0	100.0	839.2	
19	9:40 AM	JWH	1.13	0.93	1.01	1.03	1.05	288	0	100.0	843.4	
20	8:19 AM	JK	1.22	1.02	1.02	1.02	1.06	288	0	100.0	1008.0	
21	7:22 AM	JK	1.25	1.03	1.06	1.07	1.09	288	0	100.0	775.1	
22	7:38 AM	JK	1.24	1.06	1.04	1.02	1.08	288	0	100.0	760.5	
23	7:19 AM	JK	1.14	0.94	1.02	0.95	1.02	288	0	100.0	740.9	
24	7:24 AM	JK	1.15	0.96	0.91	0.92	0.96	288	0	100.0	785.6	
25	7:20 AM	JK	1.10	0.93	0.92	0.93	1.04	288	0	100.0	937.0	
26	8:31 AM	JWH	1.18	1.00	0.98	0.98	1.00	288	0	100.0	832.0	
27	8:27 AM	JH	1.19	1.02	0.95	0.95	0.98	288	0	100.0	949.5	
28	8:32 AM	JK	1.17	1.01	0.96	0.99	1.03	288	0	100.0	923.2	
29	7:12 AM	AR	1.16	0.98	0.95	1.00	1.03	288	0	100.0	857.8	
30	7:14 AM	AR	1.15	0.94	1.03	0.96	1.03	288	0	100.0	947.9	
31	7:20 AM	JK	1.06	0.89	0.92	0.89	0.93	288	0	100.0	840.0	
Monthly Total								8928	0			
Compliance with Chlorine Standard:											100.0%	

Submitted by (Print): Andrew Rempel

Signature: Andrew Rempel

Niverville WTP - Chlorine Report - September 2023

Water System Code: 151.25

Instrument Location: Distribution Chlorine

Lead Operator: Ryan Dyck

Other Operators: Andrew Rempel

		Chlorine, ppm											
		Distribution Chlorine											
Day of Month	Time	Operator Initials	Total Chlorine	Operator Verification		Automation Records		Number of Free Chlorine Readings				Daily Usage (m³)	
				Handheld	Display	Average	Minimum	Total	Below Standard	% Within Standard			
1	7:18 AM	AR	0.99	0.82	0.87	0.87	0.92	288	0	100.0	948.2		
2	7:51 AM	JH	1.04	0.88	0.90	0.91	0.94	288	0	100.0	1048.8		
3	10:20 AM	JH	1.14	0.96	0.95	0.95	1.00	288	0	100.0	1032.7		
4	10:15 AM	JH	1.20	1.03	1.03	1.02	1.06	288	0	100.0	1165.3		
5	7:47 AM	JK	1.23	1.06	1.01	1.05	1.08	288	0	100.0	762.9		
6	7:15 AM	RD	1.21	1.03	1.07	1.04	1.09	288	0	100.0	746.9		
7	7:30 AM	RD	1.15	0.96	0.99	0.96	1.01	288	0	100.0	787.4		
8	7:20 AM	AR	1.06	0.86	0.97	0.89	0.98	288	0	100.0	753.9		
9	9:14 AM	JH	1.11	0.93	0.88	0.86	0.88	288	0	100.0	819.9		
10	9:27 AM	JH	1.16	0.98	0.90	0.91	0.97	288	0	100.0	910.2		
11	7:21 AM	JK	1.28	1.08	1.00	1.07	1.13	288	0	100.0	820.4		
12	7:20 AM	JK	1.33	1.13	1.10	1.10	1.13	288	0	100.0	748.5		
13	7:20 AM	JK	1.33	1.14	1.14	1.13	1.18	288	0	100.0	760.5		
14	7:18 AM	AR	1.34	1.10	1.13	1.12	1.16	288	0	100.0	756.9		
15	7:24 AM	JK	1.30	1.12	1.11	1.14	1.20	288	0	100.0	698.8		
16	8:15 AM	JK	1.43	1.21	1.24	1.25	1.32	288	0	100.0	761.0		
17	11:52 AM	JH	1.60	1.40	1.35	1.35	1.43	288	0	100.0	849.6		
18	7:27 AM	JK	1.72	1.50	1.48	1.49	1.55	288	0	100.0	793.0		
19	7:42 AM	JK	1.73	1.52	1.51	1.48	1.57	288	0	100.0	774.8		
20	8:38 AM	AR	1.69	1.48	1.45	1.44	1.52	288	0	100.0	825.8		
21	8:45 AM	AR	1.68	1.45	1.45	1.39	1.49	288	0	100.0	730.4		
22	7:20 AM	JK	1.60	1.41	1.34	1.37	1.42	288	0	100.0	659.4		
23	7:12 AM	MV	1.59	1.37	1.39	1.40	1.44	288	0	100.0	718.9		
24	1:59 PM	KE	1.54	1.33	1.36	1.37	1.44	288	0	100.0	787.9		
25	1:48 PM	AR	1.52	1.28	1.35	1.30	1.36	288	0	100.0	682.5		
26	7:27 AM	AR	1.46	1.29	1.25	1.24	1.27	288	0	100.0	731.2		
27	7:16 AM	AR	1.53	1.27	1.22	1.22	1.27	288	0	100.0	691.5		
28	7:18 AM	JK	1.46	1.23	1.22	1.21	1.25	288	0	100.0	693.5		
29	7:26 AM	AR	1.42	1.27	1.21	1.19	1.22	288	0	100.0	655.2		
30	9:00 AM	AR	1.46	1.21	1.18	1.17	1.19	288	0	100.0	793.5		
Monthly Total								8640	0	100.0%			
Compliance with Chlorine Standard:													

Submitted by (Print): Andrew Rempel

Signature:

Andrew Rempel

Niverville WTP - Chlorine Report - October 2023

Water System Code: 151.25

Instrument Location: Distribution Chlorine

Lead Operator: Ryan Dyck

Other Operators: Andrew Rempel

Day of Month	Time	Operator Initials	Chlorine, ppm										Daily Usage (m³)
			Distribution Chlorine										
			Total Chlorine	Operator Verification		Automation Records		Number of Free Chlorine Readings					
				Handheld	Display	Average	Minimum	Total	Below Standard	% Within Standard			
1	7:50 AM	KE	0.97	0.69	1.18	1.16	1.21	288	0	100.0	789.7		
2	7:20 AM	JK	1.30	1.08	1.13	1.09	1.14	288	0	100.0	709.5		
3	8:08 AM	JK	1.32	1.12	1.08	1.07	1.10	288	0	100.0	673.1		
4	7:27 AM	JK	1.33	1.12	1.06	1.09	1.12	288	0	100.0	664.6		
5	7:25 AM	JK	1.32	1.15	1.09	1.14	1.18	288	0	100.0	649.0		
6	7:22 AM	JK	1.29	1.13	1.16	1.16	1.18	288	0	100.0	678.4		
7	7:13 AM	SK	1.27	1.08	1.13	1.12	1.16	288	0	100.0	688.1		
8	7:57 AM	MV	1.27	1.15	1.12	1.12	1.16	288	0	100.0	705.5		
9	9:27 AM	KP	1.16	1.07	1.14	1.12	1.14	288	0	100.0	797.5		
10	7:20 AM	JK	1.23	1.06	1.10	1.06	1.11	288	0	100.0	650.1		
11	7:19 AM	JK	1.22	1.05	1.05	1.05	1.12	288	0	100.0	670.1		
12	7:24 AM	JK	1.23	1.05	1.03	1.02	1.05	288	0	100.0	675.2		
13	7:20 AM	JK	1.18	1.01	0.99	0.99	1.01	288	0	100.0	639.9		
14	7:10 AM	SK	1.18	0.99	1.00	1.00	1.05	288	0	100.0	728.0		
15	7:13 AM	MV	1.19	1.00	0.98	1.00	1.03	288	0	100.0	800.3		
16	7:25 AM	AR	1.19	1.01	1.01	1.00	1.04	288	0	100.0	696.1		
17	7:55 AM	JK	1.20	1.04	1.00	1.00	1.08	288	0	100.0	663.6		
18	7:12 AM	AR	1.14	0.96	0.96	0.97	0.99	288	0	100.0	642.5		
19	7:21 AM	JK	1.15	0.98	0.99	0.99	1.06	288	0	100.0	683.0		
20	7:15 AM	JK	1.17	0.97	1.03	1.01	1.03	288	0	100.0	683.0		
21	7:20 AM	SK	1.09	0.99	0.99	0.97	1.01	288	0	100.0	717.2		
22	7:11 AM	MV	1.16	0.98	0.94	0.92	0.99	288	0	100.0	781.8		
23	7:15 AM	AR	1.03	0.86	0.85	0.84	0.89	288	0	100.0	690.2		
24	7:15 AM	JK	0.98	0.84	0.84	0.84	0.89	288	0	100.0	697.1		
25	7:17 AM	JK	0.99	0.85	0.86	0.86	0.87	288	0	100.0	676.0		
26	7:44 AM	AR	1.04	0.87	0.84	0.83	0.86	288	0	100.0	665.2		
27	7:21 AM	JK	1.03	0.88	0.81	0.82	0.85	288	0	100.0	672.9		
28	7:23 AM	SK	1.04	0.90	0.82	0.80	0.83	288	0	100.0	743.6		
29	7:07 AM	KE	0.59	0.90	0.82	0.80	0.83	288	0	100.0	794.8		
30	7:14 AM	AR	1.01	0.83	0.82	0.84	0.90	288	0	100.0	696.2		
31	8:21 AM	AR	1.08	0.88	0.83	0.86	0.88	288	0	100.0	637.0		
								Monthly Total	8928	0			
								Compliance with Chlorine Standard:				100.0%	

Niverville WTP - Chlorine Report - November 2023

Water System Code: 151.25

Instrument Location: Distribution Chlorine

Lead Operator: Ryan Dyck

Other Operators: Andrew Rempel

			Chlorine, ppm										
Day of Month	Time	Operator Initials	Distribution Chlorine										Daily Usage (m³)
			Total Chlorine	Operator Verification		Automation Records		Number of Free Chlorine Readings			% Within Standard		
				Handheld	Display	Average	Minimum	Total	Below Standard				
1	7:15 AM	AR	1.09	0.90	0.86	0.87	0.77	288	0	100.0	674.0		
2	7:17 AM	JK	1.19	1.01	0.93	0.96	0.73	288	0	100.0	705.3		
3	7:19 AM	AR	1.18	0.99	0.96	0.96	0.80	288	0	100.0	667.0		
4	6:51 AM	KE	1.21	0.99	0.98	0.99	0.94	288	0	100.0	736.7		
5	7:05 AM	SK	1.18	1.04	1.03	1.04	0.86	288	0	100.0	789.6		
6	7:18 AM	SK	1.23	1.02	1.02	1.03	0.94	288	0	100.0	664.9		
7	7:20 AM	JK	1.22	1.06	1.03	1.05	1.00	288	0	100.0	651.7		
8	7:20 AM	JK	1.27	1.07	1.04	1.06	0.98	288	0	100.0	645.5		
9	8:43 AM	AR	1.32	1.13	1.09	1.12	1.02	288	0	100.0	641.0		
10	7:17 AM	JK	1.43	1.22	1.18	1.20	0.95	288	0	100.0	652.1		
11	11:55 AM	KE	1.41	1.20	1.17	1.17	1.09	288	0	100.0	715.0		
12	7:08 AM	KE	1.20	1.10	1.14	1.13	1.12	288	0	100.0	755.9		
13	7:21 AM	JK	1.22	1.02	1.09	1.04	0.97	288	0	100.0	718.9		
14	7:44 AM	JK	1.26	1.08	0.97	0.97	0.96	288	0	100.0	664.2		
15	7:18 AM	JK	1.23	1.05	0.97	0.98	0.95	288	0	100.0	665.1		
16	7:12 AM	AR	1.28	1.07	0.96	1.03	0.81	288	0	100.0	661.4		
17	7:20 AM	JK	1.19	1.01	1.02	1.03	0.89	288	0	100.0	648.9		
18	7:12 AM	SK	1.09	0.92	1.06	1.04	0.83	288	0	100.0	723.6		
19	7:12 AM	MV	1.16	1.01	0.98	0.99	0.94	288	0	100.0	750.1		
20	7:18 AM	JK	1.10	0.86	0.95	0.90	0.94	299	0	100.0	699.7		
21	7:40 AM	JK	1.06	0.89	0.85	0.86	0.76	288	0	100.0	681.5		
22	7:25 AM	JK	1.07	0.90	0.86	0.86	0.73	288	0	100.0	654.2		
23	7:20 AM	JK	1.09	0.90	0.89	0.90	0.73	288	0	100.0	661.5		
24	7:23 AM	JK	1.14	0.95	0.93	0.92	0.79	288	0	100.0	655.8		
25	7:08 AM	SK	1.14	1.00	0.89	0.92	0.88	288	0	100.0	700.0		
26	6:50 AM	KE	1.16	0.97	0.91	0.94	0.68	288	0	100.0	773.1		
27	7:18 AM	JK	1.17	1.00	0.93	0.96	0.91	288	0	100.0	655.8		
28	7:40 AM	JK	1.11	1.00	0.97	0.97	0.90	288	0	100.0	652.9		
29	7:26 AM	AR	1.14	0.92	0.98	0.94	0.83	288	0	100.0	656.5		
30	7:14 AM	AR	1.11	0.93	0.89	0.93	0.88	288	0	100.0	651.7		
			Monthly Total							8651	0		
			Compliance with Chlorine Standard: 100.0%										

Submitted by (Print): Andrew Rempel

Signature: 

Niverville WTP - Chlorine Report - December 2023

Water System Code: 151.25

Lead Operator: Ryan Dyck

Instrument Location: Distribution Chlorine

Other Operators: Andrew Rempel

			Chlorine, ppm											
Day of Month	Time	Operator Initials	Distribution Chlorine											
			Operator Verification		Automation Records		Number of Free Chlorine Readings							
			Free Chlorine Handheld	Free Chlorine Display	Average	Minimum	Total	Below Standard	% Within Standard	Daily Usage (m³)				
1	7:16 AM	AR	1.13	0.96	0.95	0.97	0.71	288	0	100.0	637.6			
2	7:05 AM	SK	1.15	1.04	0.99	0.99	0.94	288	0	100.0	732.3			
3	6:58 AM	MV	1.15	0.78	0.97	0.98	0.94	288	0	100.0	757.7			
4	7:18 AM	AR	1.20	0.99	1.00	0.99	0.67	288	0	100.0	698.3			
5	7:15 AM	AR	1.17	0.97	0.95	0.95	0.92	288	0	100.0	666.9			
6	7:16 AM	AR	1.13	0.94	0.95	0.95	0.80	288	0	100.0	669.9			
7	7:12 AM	AR	1.12	0.93	0.97	0.97	0.78	288	0	100.0	659.4			
8	7:18 AM	AR	1.14	0.97	0.97	0.97	0.93	288	0	100.0	639.9			
9	11:06 AM	SK	1.18	1.04	0.98	1.00	0.81	288	0	100.0	741.9			
10	1:57 PM	KE	1.31	1.11	1.06	1.07	0.90	288	0	100.0	790.1			
11	8:30 AM	AR	1.33	1.10	1.10	1.09	0.83	288	0	100.0	725.4			
12	8:15 AM	AR	1.39	1.17	1.16	1.15	1.08	288	0	100.0	700.2			
13	7:17 AM	AR	1.36	1.14	1.15	1.14	1.00	288	0	100.0	680.0			
14	7:21 AM	AR	1.39	1.15	1.12	1.11	0.00	288	5	98.3	673.6			
15	7:16 AM	AR	1.33	1.10	1.06	1.05	0.86	288	0	100.0	659.2			
16	7:53 AM	SK	1.38	1.21	1.04	1.05	0.96	288	0	100.0	728.2			
17	7:10 AM	MV	1.48	1.24	1.09	1.09	0.92	288	0	100.0	750.4			
18	8:15 AM	AR	1.43	1.19	1.06	1.14	1.04	288	0	100.0	680.1			
19	7:17 AM	AR	1.40	1.21	1.16	1.19	1.07	288	0	100.0	657.5			
20	7:12 AM	AR	1.42	1.21	1.21	1.20	1.10	288	0	100.0	665.6			
21	7:12 AM	AR	1.39	1.16	1.14	1.15	0.83	288	0	100.0	667.4			
22	7:10 AM	AR	1.39	1.17	1.10	1.09	1.01	288	0	100.0	696.4			
23	7:59 AM	MV	1.28	1.09	1.05	1.01	0.94	288	0	100.0	725.3			
24	9:23 AM	JM	1.24	1.06	0.94	0.93	0.89	288	0	100.0	726.4			
25	8:30 AM	RD	1.23	1.06	0.89	1.00	0.76	288	0	100.0	655.5			
26	5:38 AM	KP	1.28	1.17	1.04	1.01	0.96	288	0	100.0	646.7			
27	7:44 AM	JK	1.24	1.05	0.97	1.03	0.86	288	0	100.0	686.6			
28	7:27 AM	JK	1.26	1.05	1.05	1.04	0.98	288	0	100.0	680.0			
29	7:26 AM	JK	1.23	1.04	0.97	1.01	0.95	288	0	100.0	682.1			
30	8:07 AM	SK	1.32	1.14	0.99	1.00	0.98	288	0	100.0	709.3			
31	12:37 PM	KE	1.24	1.10	0.97	0.98	0.95	288	0	100.0	711.1			
			Monthly Total					8928	5		99.9%			
			Compliance with Chlorine Standard:											

Submitted by (Print): Andrew Rempel

Signature: *Andrew Rempel*

CORRECTIVE ACTION REPORT



WATER SYSTEM: Spruce Grove WTP WATER SYSTEM CODE: 151.25

LOCATION OF NON-COMPLIANCE INCIDENT (ex. Water Plant): Water Plant

OPERATOR: Andrew Rempel Signature: Andrew Rempel

TYPE OF NON-COMPLIANCE INCIDENT:



Low disinfectant residual entering the distribution system, 21(1) MR 40/2007



Low disinfectant residual in the distribution system, 22 MR 40/2007



Filtered water turbidity exceeding the turbidity standard, 6(1) MR 41/2007



Low positive total coliform (< 10 CFU/100mL), 3 MR 41/2007



Other

INITIAL TEST RESULTS:

DATE: December 14, 2023

DESCRIPTION OF CORRECTIVE ACTIONS TAKEN (attach additional sheets if required):

On December 14, 2023 I cleaned and calibrated our Chlorine analyzer. This caused 5 readings to be taken which were below our 0.50 mg/L standard.

TEST RESULTS AFTER CORRECTIVE ACTIONS:

DATE: _____

(attach laboratory results if applicable)

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING.

DISTRIBUTION:

FORWARD THE ORIGINAL TO YOUR DRINKING WATER OFFICER WITH YOUR MONTHLY DISINFECTION OR TURBIDITY MONITORING REPORT
RETAIN A COPY FOR YOUR RECORDS

Contact your Drinking Water Officer with any comments, questions or concerns.