

**Drinking Water Quality and Compliance
Town Long Form – Annual Notice to Consumers**

Introduction

The Water Security Agency and the Ministry of Environment requires that at least once each year waterworks owners provide notification to consumers of the quality of water produced and supplied as well as information on the performance of the waterworks in submitting samples as required by a Minister’s Order or Permit to Operate a waterworks. The following is a summary of the **Town of Rose Valley’s** water quality and sample submission compliance record for the January 1, 2023 to December 31, **2023** time period. This report was completed on **April 22, 2024**. Readers should refer to Water Security Agency’s Municipal Drinking Water Quality Monitoring Guidelines, June 2015, EPB 502 for more information on minimum sample submission requirements and the meaning of type of sample. Permit requirements for a specific waterworks may require more sampling than outlined in the department’s monitoring guidelines. If consumers need more information on the nature and significance of specific water tests, for example, “what is the significance of Selenium in a water supply”, more detailed information is available from: http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/index_e.html

Water Quality Standards

Bacteriological Quality

| Parameter/Location | Limit | Regular Samples Required | Regular Samples Submitted | # of Positive Regular Submitted (Percentage) |
|---------------------|--------------------------------|--------------------------|---------------------------|--|
| Total Coliform | 0 Organisms/100 mg/L | <u>24</u> | <u>26</u> | <u>0</u> |
| E. coli | 0 Organisms/100 ml | <u>24</u> | <u>26</u> | <u>0</u> |
| Background Bacteria | Less than 200 Organisms/100 mL | <u>24</u> | <u>26</u> | <u>0</u> |

The owner/operator is responsible to ensure that 100 per cent of all bacteriological samples are submitted as required. All waterworks are required to submit samples for bacteriological water quality, the frequency of monitoring depends on the population served by the waterworks.

Water Disinfection –

Chlorine Residual in Distribution System for Test Results Submitted with Bacteriological Samples

| Parameter | Minimum Limit | Total Chlorine Residual Range | Free Chlorine Residual Range | # Tests Required | # Tests Submitted | # Adequate Chlorine (%) |
|-------------------|---------------------------------|-------------------------------|------------------------------|------------------|-------------------|-------------------------|
| Chlorine Residual | 0.1 mg/L free OR 0.5 mg/L total | <u>.84 - 1.20 mg/L</u> | <u>.77 - 1.11 mg/L</u> | <u>24</u> | <u>26</u> | <u>100%</u> |

A minimum of 0.1 milligrams per litre (mg/L) free chlorine residual OR 0.5 mg/L total chlorine residual is required at all times throughout the distribution system unless otherwise approved. A proper chlorine submission is defined as a bacteriological sample submission form with both the free and total chlorine residual fields filled out. An adequate chlorine is a result that indicates that the chlorine level is above the regulated minimums. An adequate chlorine may be counted even if the chlorine results were submitted incorrectly. A waterworks is required to submit chlorine residual test results on every bacteriological sample they submit.



Water Disinfection - Free Chlorine Residual for Water Entering Distribution System from Waterworks Records - From Water Treatment Plant Records

| Parameter | Limit (mg/L) | Test Level Range | # Tests Performed | # Tests Not Meeting Requirements |
|-------------------------------|--------------|------------------------|-------------------|----------------------------------|
| Free Chlorine Residual | at least 0.1 | <u>.74 – 1.27 mg/L</u> | <u>365</u> | <u>nil</u> |

A minimum of 0.1 milligrams per litre (mg/L) free chlorine residual is required for water entering the distribution system. Tests are normally performed on a daily basis by the waterworks operator and are to be recorded in operation records. This data includes the number of free chlorine residual tests performed, the overall range of free chlorine residual (highest and lowest recorded values) and the number of tests and percentage of results not meeting the minimum requirement of 0.1 mg/L free chlorine residual

Turbidity – From Water Treatment Plant Records

| Parameter | Limit (NTU) | Test Level Range | # Tests Not Meeting Requirements | Maximum Turbidity (NTU) | # Tests Required | # Tests Performed |
|------------------|-------------|----------------------|----------------------------------|-------------------------|------------------|-------------------|
| Turbidity | 1.0 | <u>.04 - .22 NTU</u> | <u>Nil</u> | <u>.22 NTU</u> | <u>365</u> | <u>365</u> |

Turbidity is a measure of water treatment efficiency. Turbidity measures the “clarity” of the drinking water and is generally reported in Nephelometric Turbidity Units (NTU). All waterworks are required to monitor turbidity at the water treatment plant. The frequency of measurement varies from daily for small systems to continuous for larger waterworks.

Chemical – Health Category

| Parameter | Limit Maximum Acceptable Concentration (MAC) mg/l | Interim Limit Maximum Acceptable Concentration (IMAC) mg/l | Sample Results mg/L | Number of Samples Exceeding the Limit |
|------------------|---|--|---------------------|---------------------------------------|
| Antimony | No Guideline | | <0.00016 | NIL |
| Arsenic | 0.010 | | 0.00160 | NIL |
| Barium | 1.000 | | <0.00071 | NIL |
| Boron | <5.000 | | 0.40000 | NIL |
| Bromate | 0.010 | | NR | NIL |
| Cadmium | 0.005 | | <0.00015 | NIL |
| Chlorate | 1.000 | | NR | NIL |
| Chlorite | 1.000 | | NR | NIL |
| Chromium | 0.050 | | <0.00019 | NIL |
| Fluoride (avg *) | 1.500 | | <0.05000 | NIL |
| Lead | 0.010 | | 0.00040 | NIL |
| Nitrate (avg *) | 45.000 | | <0.02000 | NIL |
| Selenium | 0.010 | | <0.00113 | NIL |
| Silver | No Guideline | | <0.00020 | NIL |
| Uranium | 0.020 | | <0.00011 | NIL |

All waterworks serving less than 5000 persons are required to submit water samples for SE’s Chemical Health category once every 2 years. The Chemical Health category includes analysis for arsenic, barium, boron, cadmium, chromium, fluoride, lead, nitrate, selenium and uranium.

The last sample for Chemical Health analysis was submitted on December 12, 2023. Sample results indicated that the provincial drinking water quality standards were not exceeded.

Substances within the chemical health category may be naturally occurring in drinking water sources or may be the result of human activities. These substances may represent a long-term health risk if the Maximum Acceptable Concentration (MAC) or Interim Maximum Acceptable Concentration (IMAC) is exceeded. All drinking water supplies are required to monitor for substances in the Chemical-Health category, the frequency of monitoring depends on the population served by the waterworks. The Town of Rose Valley does not add fluoride to drinking water supplies.

*Results expressed as average values for communities or waterworks that fluoridate drinking water supplies or those with elevated concentrations of fluoride or nitrates.

Chemical – Trihalomethanes (THMs)

Note: Only water supplies derived from surface water or groundwater under the influence of surface water are required to monitor for THMs unless otherwise specified in the facility Permit to Operate. The Town of Rose Valley's water supplies are derived from groundwater NOT under the influence of surface water therefore sampling/analysis for THMs is not required or performed. The Permit to Operate does not require sampling/analysis for THMs.

General Chemical

| Parameter | Aesthetic Objectives * (mg/L) | Sample Results Average (mg/L) | Number of Samples Required | Number of Samples Submitted |
|------------------------|-------------------------------|-------------------------------|----------------------------|-----------------------------|
| Aluminum | No Guideline | <6.96 | 1 | 1 |
| Alkalinity | <500 | 72.60 | 1 | 1 |
| Phenol Alkalinity | No Guideline | 2.89 | 1 | 1 |
| Bicarbonate | No Guideline | 82.00 | 1 | 1 |
| Calcium | No Guideline | 2.00 | 1 | 1 |
| Carbonate | No Guideline | 3.00 | 1 | 1 |
| Chloride | <250 | 9.50 | 1 | 1 |
| Conductivity | <2300 uS/cm | 189 uS/cm | 1 | 1 |
| Copper | 1 | <.00829 | 1 | 1 |
| Hardness | <800 | 9.00 | 1 | 1 |
| Hydroxide | No Guideline | 0 | 1 | 1 |
| Iron | <0.30 | <0.10 | 1 | 1 |
| Magnesium | <200 | <1.00 | 1 | 1 |
| Manganese | <0.05 | 0.02 | 1 | 1 |
| pH | 7.0 -10.5 pH units | 8.8 pH units | 1 | 1 |
| Potassium | No Guideline | <1.00 | 1 | 1 |
| Sodium | <300 | 36.00 | 1 | 1 |
| Sulphate | <500 | 17.40 | 1 | 1 |
| Total dissolved Solids | <1500 | 152.00 | 1 | 1 |
| Zinc | <5 | <.004 | 1 | 1 |



All waterworks serving less than 5000 persons are required to submit water samples for SE's General Chemical category once every two years if a ground water source and once per three months every second year if a surface water or blended surface/groundwater source. The General Chemical category includes analysis for alkalinity, bicarbonate, calcium, carbonate, chloride, conductivity, hardness (as CaCO₃), magnesium, sodium, sulphate and total dissolved solids.

The last sample for General Chemical analysis was required in 2023 and submitted on December 28, 2023. Sample results indicated that there were no exceedences of the provincial aesthetic objectives for the General Chemical category.

*Objectives apply to certain characteristics of or substances found in water for human consumptive or hygienic use. The presence of these substances will affect the acceptance of water by consumers and/or interfere with the practice of supplying good quality water. Compliance with drinking water aesthetic objectives is not mandatory as these objectives are in the range where they do not constitute a health hazards. The aesthetic objectives for several parameters (including hardness as CaCO₃, magnesium, sodium and total dissolved solids) consider regional differences in drinking water sources and quality.

More information on water quality and sample submission performance may be obtained from:

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