

**2010 Drinking Water Quality and Compliance
Annual Notice to Consumers**

Saskatchewan Environment (SE) 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 **Diefenbaker Lake Cottage Development's** water quality and sample submission compliance record for the **January 1, 2009 – December 31, 2010** time period. **This report was completed on April 15, 2011.** Readers should refer to SE's "Municipal Drinking Water Quality Monitoring Guidelines, November 2002, EPB 202" 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/hecs-sesc/water/dwgsup.htm>.

Water Quality Standards

Bacteriological Quality

| Parameter/Location | Limit | Regular Samples Required | Regular Samples Submitted | # of Positive Regular Submitted (%) |
|-------------------------------------|--------------------|---------------------------------|----------------------------------|--|
| Total Coliform and E. Coli Bacteria | 0 Organisms/100 mL | 24 | 24(100%) | 0(0%) |

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 | 0.57 – 1.13 | 0.29 – 0.79 | 24 | 24 | 100% |

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 | 0.16 – 1.14 | 365 | 0 |

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 | 1.00 | 0.14–1.37 | 2 | 1.37 | 365 | 365 |

Chemical – Health Category

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 **October 05, 2009**. Sample results indicated that the future provincial drinking water quality standards were not exceeded.

| Parameter | Limit MAC*(m | Limit IMAC''(mg/L) | Sample Result(s) | |
|-----------|--------------|--------------------|------------------|---|
| Arsenic | 0.025 | | 0.0029 | "MAC = Maximum Acceptable IMAC = Interim Maximum Acceptable Concentration |
| Barium | 1.0 | | 0.0159 | |
| Boron | | 5.0 | | |
| Cadmium | 0.005 | | <0.00003 | |
| Chromium | 0.05 | | 0.0001 | |
| Fluoride | 1.5 - | | 0.33 | |
| Lead | 0.01 | | 0.0005 | |
| Nitrate | 45.0 | | 1.3 | |
| Selenium | 0.01 | | 0.0064 | |
| Uranium | 0.02 | | 0.0114 | |

General Chemical

All waterworks serving less than 5000 persons are required to submit water samples from SE's General Chemical category once every two years if a ground water source. The General Chemical category includes analysis of for alkalinity, bicarbonate, calcium, carbonate, chloride, conductivity, hardness (as CaCo₃), magnesium, sodium, sulphate and total dissolved solids.

The last samples submitted for General Chemical analysis was submitted on **October 05, 2009**. Sample results indicated that there were no exceedences of the provincial aesthetic objectives for the General Chemical category.

| Aesthetic Parameter | Objectives * (mg/L) | Sample Results |
|-------------------------------|--------------------------------|-----------------------|
| <i>Alkalinity</i> | <i>500</i> | <i>330</i> |
| <i>Bicarbonate</i> | <i>No Objective</i> | <i>403</i> |
| <i>Calcium</i> | <i>No Objective</i> | <i>131</i> |
| <i>Carbonate</i> | <i>No Objective</i> | <i>0</i> |
| <i>Chloride</i> | <i>250</i> | <i>15.6</i> |
| <i>Conductivity</i> | <i>No Objective</i> | <i>1410</i> |
| <i>Hardness</i> | <i>800</i> | <i>644</i> |
| <i>Magnesium</i> | <i>200</i> | <i>77</i> |
| <i>PH</i> | <i>No Objective (PH)</i> | <i>7.6</i> |
| <i>Sodium</i> | <i>300</i> | <i>82</i> |
| <i>Sulphate</i> | <i>500</i> | <i>458.7</i> |
| <i>Total dissolved Solids</i> | <i>1500</i> | <i>1175</i> |

Total Drinking Water Consumption during 2009

1,462,810 US gallons

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

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