

February 11, 2002

Environment Canada
Prairie and Northern Region
123 Main Street, Suite 150
Winnipeg, Manitoba
R3C 4W2

Attn: Brock Goalen

Re: Eureka Surveillance Network Program 2001

In accordance with the requirements of Water License NWB4EUR9904, issued by the Nunavut Water Board on March 29, 1999, please find attached the results of the Surveillance Network Program (SNP). The SNP required the collection of samples from three locations at the Eureka Weather Station. The locations and results are outlined below.

EUR-1 Raw water supply prior to treatment

One water sample was collected from the water reservoir on August 3, 2001. Aurora Laboratory Services in Vancouver, British Columbia analyzed this sample for nitrate, nitrite and the BTEX parameters. The analytical results are located in Appendix A. The results are summarized in Table 1.

Table 1: EUR-1 Analytical Results

| Parameter | Reservoir |
|---------------------|------------------|
| Benzene (mg/L) | <0.0005 |
| Toluene (mg/L) | <0.0005 |
| Ethylbenzene (mg/L) | <0.0005 |
| Xylene (mg/L) | <0.0005 |
| Nitrate (mg/L) | 0.018 |
| Nitrite (mg/L) | 0.011 |

EUR-2 Runoff from the Solid Waste Disposal Facilities

Runoff from this location is to be sampled annually during periods of melt water flow. Site personnel at the Eureka weather station were unsuccessful in acquiring the samples in 2001 due to minimal water available other than ponded water at the landfill toe. Extra effort will be made in acquiring the necessary samples in 2002.

EUR-3 Runoff discharge from the Sewage Lagoon, just prior to entering the ocean

The annual discharge from the sewage lagoon occurred on August 2-3, 2001. Two, four hour discharge periods were necessary to release the grey water from the lagoon. The estimated volume of water discharged was 1,600 m³. Samples were collected two hours into the discharge period on each day (EWW-1 and EWW-2). They were sent to Aurora Laboratory Services in Vancouver, British Columbia for analyses. The analytical results are summarized in Appendix A. The results are summarized in Table 2.

Table 2: EUR-3 Analytical Results

| Parameter | Nunavut Guidelines ¹ | EWW-1 | EWW-2 |
|-------------------------------|---------------------------------|-------------|-------------|
| BOD (mg/L) | 100 | 54 | 58 |
| PH | 6-9 | 10.2 | 10.5 |
| Total Suspended Solids (mg/L) | 120 | 215 | 229 |
| Nitrate (mg/L) | -- | 0.05 | 0.06 |
| Nitrite (mg/L) | -- | 0.052 | 0.049 |
| Total Phenols (mg/L) | -- | 0.06 | 0.07 |
| Sodium (mg/L) | -- | 162 | 137 |
| Magnesium (mg/L) | -- | 27.6 | 23.3 |
| Total Silver (mg/L) | 0.1 | <0.01 | <0.01 |
| Fecal Coliform (CFU/100ml) | -- | 500 | 300 |
| Conductivity (uS/cm) | -- | 1260 | 1270 |
| Ammonia Nitrogen (mg/L) | -- | 5.12 | 4.19 |
| Oil and Grease (visual) | No visible sheen | No sheen | No sheen |
| Sulphate (mg/L) | -- | 135 | 135 |
| Potassium (mg/L) | -- | 20 | 17 |
| Calcium (mg/L) | -- | 52.8 | 44.3 |
| | | | |

¹ As outlined in the water license

BOLD values indicate that the analytical results are above the Nunavut Guidelines.

Both of the collected samples slightly exceeded the Nunavut water license requirements for pH. In addition, both the samples exceeded the Total Suspended Solids criteria of 120 mg/L. The elevated total suspended solids may have been caused by a disturbance to the bottom of the lagoon during discharge.

Should you require any additional information regarding the 2001 SNP, please do not hesitate to contact me at 780-497-3886.

Sincerely,

Jared Buchko
Senior Environmental Engineer
Environmental Services

Appendix A:

Analytical Results