



PO BOX 1500
YELLOWKNIFE NT X1A 2R3

July 28, 2022

Distribution List

A summary of the Giant Mine Remediation Project ambient air quality monitoring program (AAQMP) for the week ending July 23, 2022 is as follows:

Site Perimeter Monitoring Stations

- No 15-minute average particulate matter less than 10 microns in diameter (PM₁₀) concentrations above the established Risk Based Action Level (RBAL) of 159 µg/m³ were measured at the Site Perimeter Monitoring Stations during the week. Intermittent PM₁₀ concentrations measured during the week were elevated above typical seasonal background concentrations due to smoke from regional forest fires.
- No 15-minute average total suspended particulate (TSP) concentrations above the established RBAL of 333 µg/m³ were measured at the Site Perimeter Monitoring Stations during the week. Intermittent TSP concentrations measured during the week were elevated above typical seasonal background concentrations due to smoke from regional forest fires.
- Laboratory analyses from integrated samples collected from the Site Perimeter Monitoring Station B – Townsite on July 1, 2022 indicated a PM₁₀ concentration above the referenced standard as follows:
 - The 24-hour integrated PM₁₀ concentration measured at Site Perimeter Monitoring Station B – Townsite (72 µg/m³) exceeded the program standard for PM₁₀ of 50 µg/m³. The exceedance was investigated and appears to be due to wildfire smoke from regional wildfires. On this day, the average wind speed was 5.1 m/s, and winds were blowing predominately from the west-northwest, placing Yellowknife crosswind from the Giant Mine Site. All other analytical perimeters on this day were less than the analytical detection limit and/or below the program referenced standard.
- Laboratory results for integrated TSP, PM₁₀, and trace metals (including arsenic) analyses from samples collected on July 4, 2022, at the Site Perimeter Monitoring Stations were less than the analytical detection limit and/or below the program referenced standard. Laboratory analyses of integrated 24-hour arsenic, PM₁₀, and TSP filter samples collected at the Site Perimeter Monitoring Stations after July 4, 2022, are pending.
- Data completeness at the Site Perimeter Monitoring Stations for the week was 99.57% for continuous TSP and 99.40% for continuous PM₁₀.



Community Monitoring Stations

- No continuous PM2.5 or PM10 24-hour average concentrations above the program standards for each were measured at any of the Community Monitoring Stations during the week. Intermittent hourly PM2.5 and PM10 concentrations measured during the week were elevated above typical seasonal background concentrations due to smoke from regional forest fires.
- Laboratory results for integrated TSP, PM10, and trace metals analyses from samples collected on July 1, 4, and 7, 2022, at the Community Monitoring Stations were less than the analytical detection limit and/or below program standards. Laboratory analyses results for samples collected after July 7, 2022, are pending.
- There were no NO2 concentrations measured at the Niven Lake Community Monitoring Station above the NWT Ambient Air Quality 24-hour standard of 106 parts per billion (ppb) or the one-hour standard of 213 ppb during the week. Table 1 summarizes the maximum hourly concentration each day and the corresponding 24-hour average concentration measured at the Niven Lake Community Monitoring Station.
- Data loss for continuous PM10 and PM2.5 was observed during the week due to annual zero background checks being conducted at all three Community Monitoring Stations. Date completeness at the Community Monitoring Stations during the week was:
 - 62.5% and 63.7% for PM10 and PM2.5 at the Yellowknife Bay Community Monitoring Station.
 - 68.5% and 67.9% for PM10 and PM2.5 at the Niven Lake Community Monitoring Station.
 - 67.3% for PM10 and PM2.5 at the Ndilq Community Monitoring Station.
 - 97.62% for NO2 at the Niven Lake Community Monitoring Station.

Table 1: Niven Lake Community Monitoring Station NO2 Concentrations

Date	Maximum One-hour Average (ppb)	24-hour Average (ppb)
July 17, 2022	1.7	0.3
July 18, 2022	0.9	0.4
July 19, 2022	1.2	0.1
July 20, 2022	0.3	0.0
July 21, 2022	1.6	0.2
July 22, 2022	2.8	0.4
July 23, 2022	0.6	0.0

General Operation

- Integrated sampling for TSP, PM10, and trace metals was conducted at all three Community Monitoring Stations on July 19 and 22, 2022.
- The AAQMP operated as specified during the week ending July 23, 2022, with the following exceptions:
 - Minor data loss of continuous PM10 and TSP at some of the Site Perimeter Monitoring Stations due to battery failure.
 - Site Perimeter Monitoring Station G-West did not record PM10 and TSP data from 02:15 to 20:30 on July 20, 2022, due to an instrument remote communication issue and battery failure.
 - Site Perimeter Monitoring Station D-Beach did not record PM10 data from 13:30 to 16:00 on July 21, 2022 due to an instrument remote communication issue.
 - Annual zero background checks were conducted at all three Community Monitoring Stations during the week from July 19, 2022 through July 21, 2022 resulting in 50 hours of PM10 and PM2.5 data invalidated at the Niven Lake Community Monitoring Station; 53 hours of PM10 and PM2.5 data invalidated at the Yellowknife Bay Community Monitoring Station; and 52 hours of PM10 and PM2.5 data invalidated at the Ndilo Community Monitoring Station.

Sincerely,



Natalie Plato
Deputy Director
Giant Mine Remediation Project

c.c.: Distribution List