

APPENDIX G

Bio Consulting Report

BIO CONSULTING

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**Engineering Northwest Ltd
Att'n: Kathy Bemben
Dan Currie**

**Re: Environmental Risk Assessment,
Red Rock Municipal Wastewater Treatment Facility.**

The following is a preliminary assessment of environmental liabilities for development of the Red Rock Municipal Wastewater Treatment Facility. This assessment considers lagoon operations/locations as presented in Engineering Northwest's Drawing No. A1-09080-61, Feb 2010 (Preliminary).

**Respectfully submitted,
G. Persson**

The lagoon options for locations 2 through 5 are sensitive environmentally. These lagoon locations would all drain to North Trout Creek. Impacts to the creek would include:

- Nitrification of the lower reaches of the creek
- Increased biological oxygen demand (BOD) and increased chemical oxygen demand (COD).
- Increased sediment loading, particularly associated with storm events and melt waters.

These impacts would lead to habitat degradation of the cold water creek. Further study of these locations would be needed to determine the assimilative capacity of the creek, over the range of flow conditions. Geotechnical investigations of the sites would be needed to determine soil porosity, rates of infiltration, and any potential ground water impacts to these locations.

These locations would also impact the existing fresh water supply to the Municipality. The fresh water supply is located downstream of the outfall from locations 2 through 5. Fresh water supply will be impacted by:

- Increase in total suspended solids (TSS) and total dissolved solids (TDS)
- Increase in nutrient levels
- Increase in bacterial counts
- Increase in metals levels, which may impact water treatment for provincial water quality objectives.

These are negative impacts to existing infrastructure in providing potable water to the community. Potable water quality will be aesthetically impacted by a change in taste, color and odour.

The constructability of the lagoon, options 2 through 5, have socio-economic as well as environmental considerations.

- Construction of up to 4 km of piping for waste stream delivery, with associated risk for breakage, leakage and/or delivery capacity limitations (range of 1000 m³day to 5,000 m³day) over such distance.
- A distance increase, risk increases and long term maintenance costs increase.
- A crossing of North Trout Creek would be required for the required piping. This will create risk of environmental impact both during and post construction. This crossing would most likely occur immediately upstream of the fresh water intake (area 2 excepted)

- The locations 2 through 5 are all upwind of the community, given a prevailing flow from the northwest.

The design and implementation of waste water treatment facilities, for the community, is an opportunity to minimize liability, risk and cost. Option 1, for a lagoon location, does not have the same environmental liability as options 2 through 5. The risks associated with the fresh water intake are removed with this location.

The advantages to Area 1 over Areas 2 through 5 are as follows:

- No negative impact to habitat or water quality of North Trout Creek.
- No additional burdens to the fresh water supply (BOD, COD, TDD, TDS, colour, odour, taste)
- Common outfall point to the receiving waters (Lake Superior) of all municipal/industrial waste water streams.
- The outfall is downstream/down current of the fresh water intake.
- The location is within the municipality foot print, minimizing pumping distance and associated infrastructure, present and future.
- The location optimized potential for system upgrade, to more advanced treatment methodologies, should system capacity or efficacy of treatment need enhancement.

The disadvantages of Area 1 include:

- Potential odour issues, with onshore winds, to the community.
- Potential impingement to peregrine falcon habitat on the bluffs, southwest of the location (Area 2 would have this concern as well)

The lagoon option, in particular areas 2 through 5, drain directly to North Trout Creek. Further degradation of the aquatic environment is in conflict with the mandate put forth by the remedial action plan for Nipigon Bay. Any new municipal infrastructure, dependant on external funding, cannot conflict with long term objectives towards remediation of Nipigon Bay. This is one of four sites on Lake Superior where concerted efforts are being made to make significant remedial advancement a reality. A lagoon treatment system draining to North Trout Creek does not seem viable.

A field inspection conducted May 25th, 2010, for Sites 1 and 2, indicated that Site 2 was too close to North Trout Creek. Storm events and/or spring freshet would conceivably cause direct drainage to North Trout Creek. Site 2 is within 170 meters of potential peregrine habitat. While any other suitable option remains viable, (Site 1 or the existing WWTP location) Site 2 should not be considered for environmental reasons.

The Ministry of Natural Resources has been contacted (Lisa Nyman, Species at Risk Specialist) to determine if values mapping and species at risk presence would impede or impair the implementation of Site 1 or the ex-WWTP location. OMNR response to this inquiry will be forwarded as an addendum to this report. The resulting finds could put timing restrictions on construction of a lagoon at Site 1 (i.e. post August 15th, after the nesting season is complete).

In conclusion, the environmentally viable locations are limited to Site 1 and the ex-WWTP location as indicated on the attached figure (Engineering Northwest No. A1-09080-61, Rev B).