

PROJECT DESCRIPTION

Gwich'in Rachel Reindeer Wellness Camp



2022

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1 PROJECT DESCRIPTION PURPOSE AND SCOPE

The purpose of this document is to provide detailed information on the Gwich'in Rachel Reindeer Wellness Camp (the Wellness Camp or the Camp). It includes information on the site, its layout, existing and proposed facilities, potential environmental and socio-economic impacts from project activities, and an overview of the camp's closure and restoration strategies.

This document is intended to compliment the supplementary information materials provided by the Gwich'in Tribal Council (GTC) in its application to the Gwich'in Land and Water Board for a new Land Use Permit and Water Licence. The additional materials to be referred to include the GTC Wellness Camp:

- Fuel Spill Contingency Plan;
- Waste Management Plan;
- Wastewater Treatment Plant Manual;
- Drinking Water Treatment Plant Manual;
- Closure and Reclamation Plan; and
- Targeted Energy Audit.

2 SUMMARY OF OPERATION

The purpose of operating the Wellness Camp is to provide social and cultural programming, to rebuild the confidence of Gwich'in persons and their families and to extend their participation in healing processes. Camp services and workshops involve Traditional and Indigenous programming and include Elders, youth and families. Sessions help families learn about traditional skills and traditional healthy lifestyles. All activities take place in and around the Wellness Camp site.

2.1 Site Description

The land use area is approximately 0.5 ha in size and is located on Gwich'in Private Land on the east bank of the Mackenzie River's East Branch. It is located within Parcel B and is approximately 10.4 km S/SW of Inuvik, NT (Figure 1).

The coordinates for the Wellness Camp are: 68°16'2.95"N, 133°46'15.32"W.



Figure 1 – Location of the Gwich'in Wellness Camp relative to Inuvik, NT

Access to the site is by boat during ice-free months and by skidoo, truck and other land vehicles in the winter and spring months over a seasonal ice road along the East Branch during frozen conditions.

2.2 Site Characteristics

The property area is geographically located on the East Channel of the Mackenzie Delta, situated within the Northern Taiga Region, characterized by rolling hills and flat wooded plateaus.

Topographic relief is low with an elevation ranging from 15m to 68m above sea level. The area is just inside the tree line; vegetation cover is stands of dwarf birch, willow, northern Labrador tea, and various mosses and lichens.

Climate conditions are highly variable. The temperature can reach -45°C in the winter and $+30^{\circ}\text{C}$ in the summer. The average annual snowfall is 53cm during the months of October to May. Winds of 5-12 km/hr are fairly constant.

2.3 Existing Site Structures

The locations of cleared areas, buildings and structures are shown on Figure 2.



Figure 2 – Locations of Wellness Camp infrastructure.

The camp contains five buildings (Figure 2):

- the main building (approximately 400 m²) contains a meeting room, a kitchen / dining room, living quarters (12 rooms) and washroom, shower, and laundry facilities;
- the power plant (approximately 60 m²) contains the power generator and a 35,000 litre (L) (7,700 gallon) doubled-hulled Enviro-Tank just outside of it to store diesel fuel;
- the drinking water treatment plant (approximately 30 m²) contains the water purification system;
- the wastewater treatment plant (approximately 30 m²) is used to treat sewage and wastewater prior to discharge to the land approximately 50 m to the east of the building; and
- the maintenance person's living quarters (approximately 50 m²) is used for living quarters for the maintenance personnel.

The camp fuel and supply storage tanks on-site include:

1) a 35,000 L double-walled 'Enviro-Tank' fuel storage tank (shown as "diesel fuel tank" in Figure 2) for diesel fuel storage (Figure 3); and

2) three 4,500 L propane tanks for the kitchen stoves (Figure 4).



Figure 3 – One 35,000 L diesel fuel tank.



Figure 4 – Three 4,500 L propane fuel tanks.

Small footpaths may extend from the site, but there are no other known features as described in Section 19(3)(b) of the *Mackenzie Valley Land Use Regulations* that may be impacted from site activities.

2.4 Proposed Site Structures

River Dock

There is a ramp at the river's edge (Figure 2) but the GTC is proposing to install a basic seasonal floating dock in 2022. It would be put in the same location, with maximum dimensions of 15ft x 20 ft (T-shaped). The dock would be removed from the river in late fall, stored on the land during the winter months, and reinstalled once the ice clears the channel in late spring.

Solar Panel System

The GTC is planning to modify the Wellness Camp to make it more efficient and environmentally-friendly to operate. The intentions are to offset dependence on fossil fuels through installing ground-mounted and roof-mounted solar arrays; the combined power rating for both solar arrays is 61.6kW.

This solar system requires a Battery Energy Storage System (BESS) which will be housed in a 40 ft container on-site. The BESS contains inverters that convert the panels' DC electricity into useable AC power for the Wellness Camp. See Figure 5 for the proposed locations of the solar

panel system components.



Figure 5 - Proposed Locations of the Solar Panel System Components.

The solar system was designed to maximize the efficiency of the 75W generator currently at the site. The system is intended to be functional year-round, with components designed for the cold and long-term operational efficiency.

Biomass Boiler System

To further offset the Wellness Camp's reliance on non-renewable energy sources, the GTC is proposing to install a mixed fuel biomass heating system at the site. A two-boiler system will be installed to enable the use of both logwood and wood pellet fuels. These boilers will provide heat for the main building by connecting into the existing heating system.

Each boiler is anticipated to produce 29.9kW per hour when combusting fuel. The biomass boiler systems, buffer and expansion tanks will be housed within a 20 ft container. The container is anticipated to be located close to the power plant (generator building; Figure 1) at a distance that ensures safety but maximizes heat exchange efficiency. A wood pellet silo will also be set up on-site near the boiler container. The silo will be approximately 22 ft tall and 8.5 ft wide and hold 18 tonnes of pellets.

3 POTENTIAL IMPACTS FROM PROJECT ACTIVITIES

The environmental impacts of this facility are expected to be minimal due to the low-impact activities on-site. Activities at the camp consist primarily of workshops and meetings, with select on-the-land programming (e.g., teaching traditional activities). Regular human use of the land can impact the soils, flora and fauna (e.g., through foot-traffic trampling, berry picking) but are expected to be negligible.

There is the potential for the fuel being stored on-site to impact the environment and resources, in the event of a spill or mismanagement. The diesel fuel is stored in a double-walled tank, providing secondary containment measures for environmental protection. All tanks are inspected regularly to ensure their integrity. Refer to the GTC's *Fuel Spill Contingency Plan* for further details.

There is the potential for the use of water and discharge of wastewater to impact the environment and resources. The use of water and the deposit of treated wastewater at the Wellness Camp are currently licensed under GLWB Water Licence G13L3-001 (expiry August 27, 2022) but an application for a new Water Licence is being submitted concurrently with this LUP application (to align their issuances and expirations).

In accordance with the Water Licence, potable water is either trucked from the Town of Inuvik to the camp from the end of November to April, or pumped from the Mackenzie River East Branch, treated on-site, and used for general camp purposes for the rest of the year (see the Drinking Water Treatment Manual for further details).

Wastewater is treated and purified on-site, and then discharged into the environment in accordance with all appropriate quality standards. Residual sludge from the wastewater processing will be pumped out and transferred off-site for appropriate disposal elsewhere. Refer to the GTC's Waste Management Plan, and Wastewater Treatment Plan Manual for further details.

In some circumstances people at the Camp may utilize the outdoor pit toilets at the site. It is anticipated that any impacts on the environment from their use will be negligible.

Other wastes generated at the camp also have the potential to impact the environment and resources if not handled properly, including food waste, garbage waste, and used fuel waste (e.g., used oil). These are bagged or packaged appropriately and hauled back to Inuvik for disposal or re-use. Refer to GTC's *Waste Management Plan* for further details.

4 PROPOSED SITE CLOSURE AND RECLAMATION STRATEGIES

The Wellness Camp facilities are expected to remain in place for the long term. When it is time to dismantle the Camp, all infrastructure and supporting equipment will be completely removed from the camp site and disposed of appropriately elsewhere, and the site subject to all applicable restoration and reclamation procedures. Refer to the GTC's *Closure and Reclamation Plan* for further details.

5 CONCLUSION

It is anticipated that the Wellness Camp's operations will bring positive opportunities for Gwich'in Participants and others who are able to visit the Camp and its facilities and partake in programming and activities at the site. The responsible ongoing management of the Camp is expected to result in negligible impacts to the environment and socio-economics of the area. The successful operation of the Wellness Camp is hoped to encourage traditional activities, enhance cultural awareness and in general contribute to the strength and vibrancy of the people of the Beaufort Delta.