

**REPORT TO VUNTUT GWITCHIN FIRST NATION
ON THE EAGLE PLAINS LODGE**



A Water Quality Study under the Arctic Environmental Strategy

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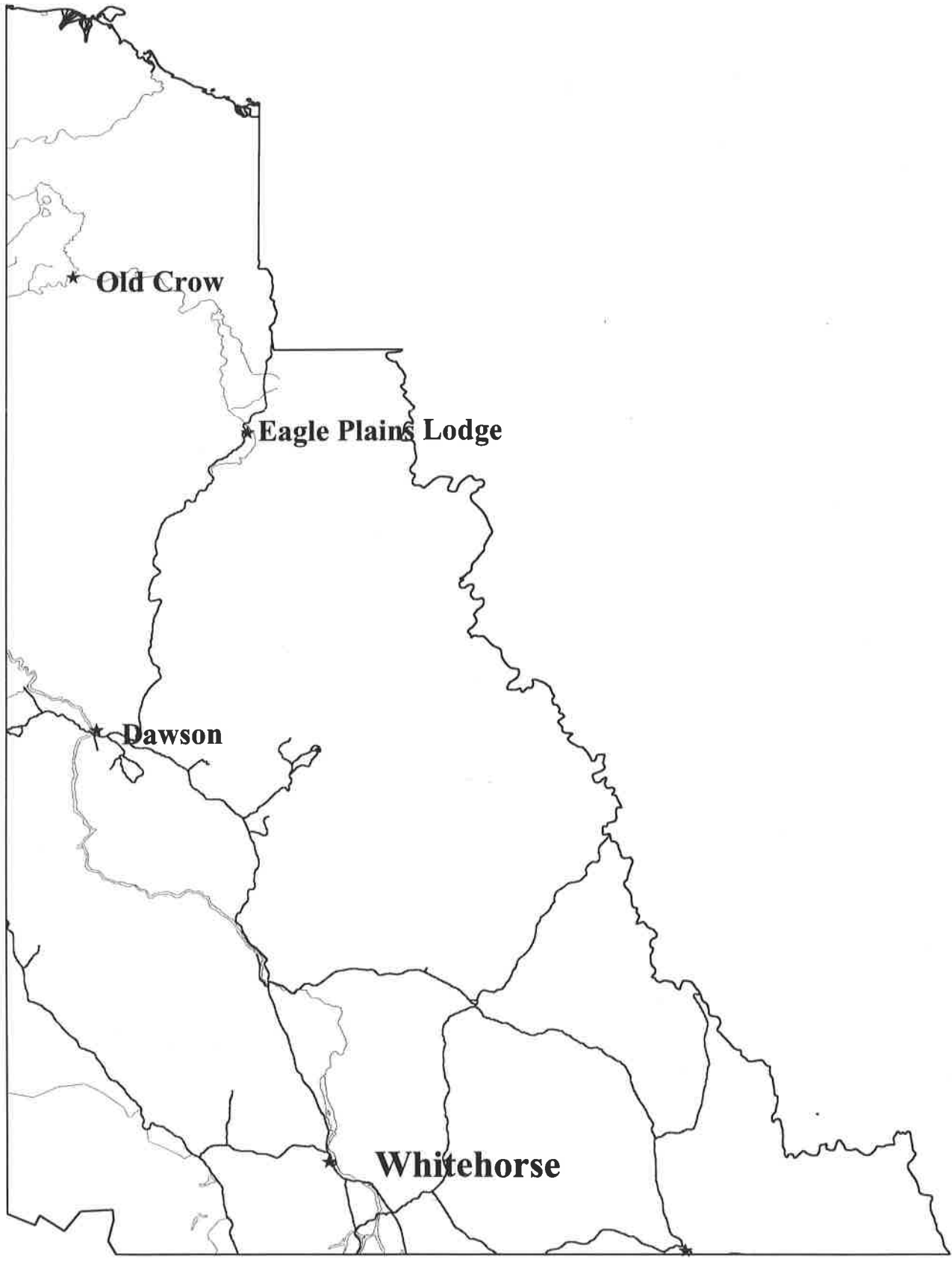


A Water Quality Study under the Arctic Environmental Strategy

by

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December 1993



* **Old Crow**

* **Eagle Plains Lodge**

* **Dawson**

* **Whitehorse**

BACKGROUND

The Vuntut Gwitchin Nation Band Council is based at Old Crow in the Yukon Territory. Old Crow is the most northern community in the Yukon, situated 120 kilometres inside the Arctic Circle. The community is located on a flat plain at the juncture of the Old Crow and Porcupine Rivers. Many members of the community maintain a traditional lifestyle of hunting, trapping and fishing.

The Eagle Plains Lodge was constructed in 1978 on the Dempster highway some 40 kilometres south of the Arctic Circle. The Lodge provides rooms, fuel, food and repairs. It is the only service facility on the highway between Dawson City and Fort McPherson in the Northwest Territories.

STUDY

An investigator with the University of Calgary visited the community in 1991 and during discussions with Band Council members determined that a significant number of individuals were still drawing water from the Porcupine and Old Crow Rivers, despite the availability of trucked water distribution from an artesian well located within the community.

The investigator from the University of Calgary sampled a branch of the Old Crow River, near it's juncture with the Porcupine on the northeast edge of the Old Crow townsite. The sample indicated the presence of *Giardia* cysts in significant numbers. At this time, a Band Council member, brought to the attention of the investigator the possibility that sewage discharge from the Eagle Plains Lodge might be responsible for contamination of the water in the Porcupine River. Concern was expressed, on behalf of the Vuntut Gwitchin Nation, that this was adversely effecting the quality of life in Old Crow.

The Water Resources Division, of the Northern Affairs Program in Whitehorse, was contacted in the spring of 1993 by a member of the Vuntut Gwitchin Nation, who repeated the concern regarding the sewage discharging from Eagle Plains Lodge. In September of 1993, an researcher from the Water Quality Section and an Inspector from the Water Rights Section of Northern Affairs, travelled to Eagle Plains and examined the sewage treatment site and the area surrounding the Eagle Plains Lodge.

RESULTS

The Eagle Plains Lodge is located above the Eagle River at an elevation of 700 metres, on the Dempster highway 300 kilometres from Dawson City and five kilometres from the bridge over the Eagle River. It disposes of sewage in a sewage pit located behind the Lodge (photo A) on a downward slope, some 50 metres distant and 10 metres downhill. The pit is located in permafrost, which it has melted to an unknown degree (photos B and C) and may be continuing to melt from the bottom down. Sewage within the pit would be subject to that action of evaporation and exfiltration. The slope in which the pit is located, continues down for 200 vertical metres, to a drainage (photo D) which eventually reaches the Eagle River some ten kilometres distant. The Eagle River flows 150 kilometres from this point to the Porcupine River. The Porcupine River flows an additional 150 kilometres to it's juncture with the Old Crow River at the community of Old Crow.

SUMMARY

There is currently no point-source flow of sewage into the Eagle River or any of it's tributaries and it is unlikely that there ever was. The sewage being discharged into the pit would certainly be subjected to evaporation in the warmer months of the year, which is the period of peak demand on the system. Infiltration through the permafrost to bedrock, where presumably there is groundwater present, would likely diffuse through the surrounding material and be subject to considerable filtration and bio-degradation. Given the distances involved and the considerable differences in volume, the possibility of sewage discharging from the pit having any effect on the Eagle River is extremely remote. Any effect on the Porcupine River would be negligible and certainly exceeded by natural inputs to the River along it's course. During the cold months, the pit would certainly freeze and remain in that state until thaw.

RECOMMENDATIONS

There is no need for concern on behalf of the Vuntut Gwitchin, regarding the ability of sewage at the Eagle Plains Lodge to influence water quality at Old Crow. The quality of water in the Porcupine River above the Old Crow townsite is entirely subject to natural influence and would vary with the normal hydrological regime.

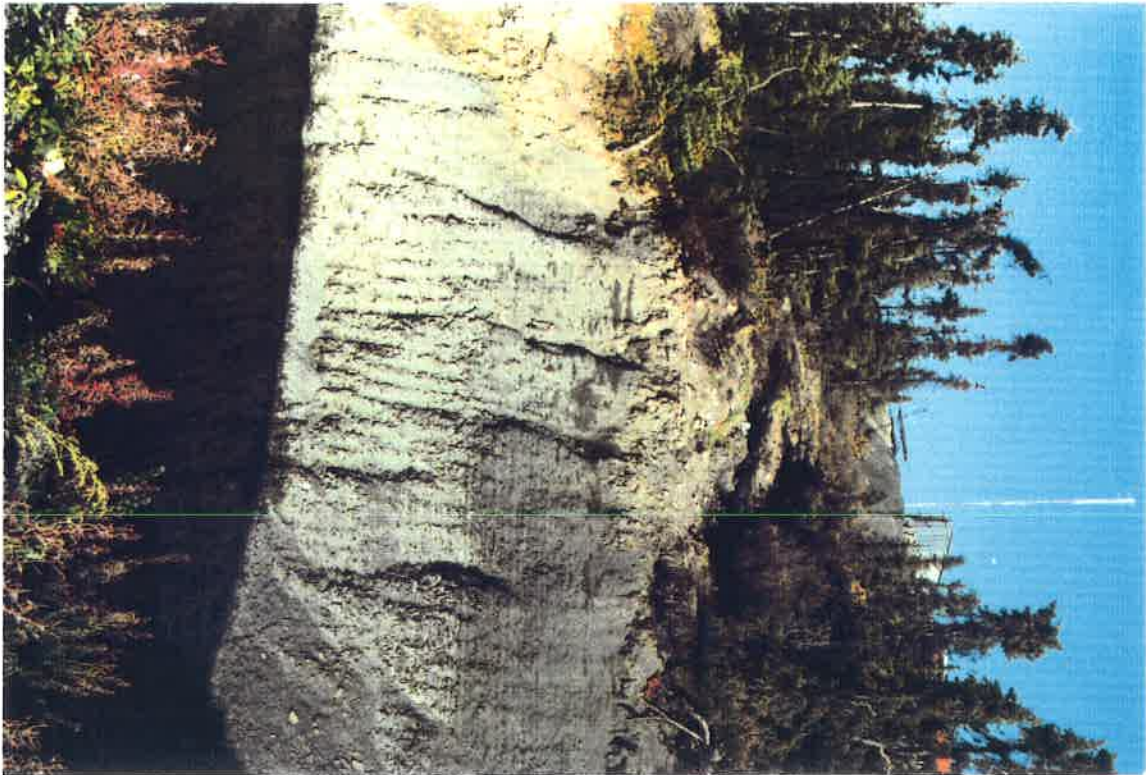


Photo A: View of sewage pit and rear of Eagle Plains Lodge site



Photo B: Discharge pipe to pit - showing bank erosion

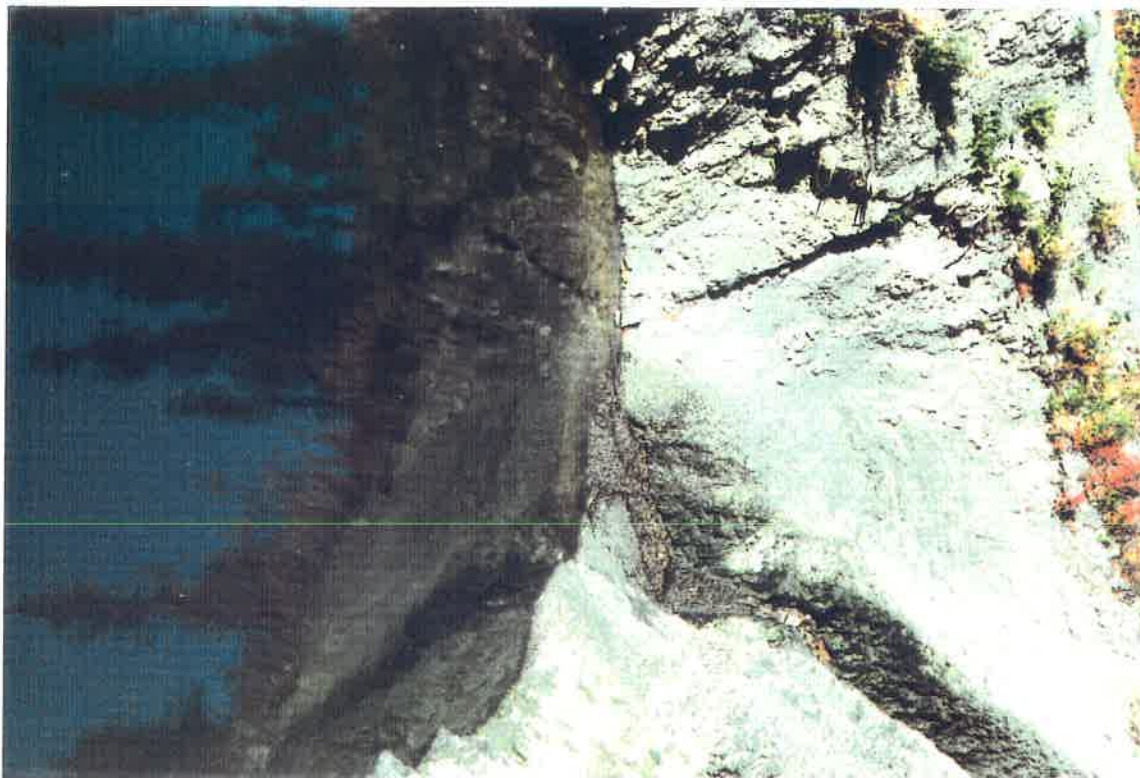


Photo C: View of sewage pit showing level and bank material



Photo D: Edge of sewage pit overlooking drainage to the Eagle River

