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November 12, 2015

City of Iqaluit
Department of Engineering
P.O. Box 460
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via email

Attention: Mr. Paul Clow, Project Officer

**Re: City of Iqaluit Sewage Lagoon
EPP Requirement Investigation**

Hi Paul:

Pursuant to your request, we have undertaken a review of the City of Iqaluit Sewage Lagoon to determine if an Emergency Preparedness Plan (EPP) should be implemented.

Background and Description

The Iqaluit Sewage Lagoon was constructed south of the FOL barracks, on the tidal plain at the head of Koojesse Inlet circa 1978. The lagoon is formed by 2 man-made berms (east and west) and the natural topography to the north and south.

The sewage lagoon has not been in use for several years, the water treatment plant constructed circa 2006 removes the need for the lagoon. However the lagoon is required as an emergency back-up in the event of a failure at the water treatment plant.



Observations

According to the 2007 Dam Safety Guidelines (DSG), an EPP should be developed and maintained for all dams/berms where lives are at risk, or if the implementation of emergency procedures could significantly reduce the consequences of failures. These consequences are normally evaluated on the basis of dam-breach analysis and inundation mapping. The level of detail required in the EPP is commensurate with the consequence of failure.

Based on our review of the Sewage Lagoon, we have determined the following:

- There are no lives at risk in the event of a berm failure. Localized seepage is to be expected with un-lined ("leaky") lagoon technology. In the event of a berm failure or washout as the immediate surrounding area of the lagoon is unpopulated; no risk to human life is expected.
- Environmental and Cultural Values: long term loss is not anticipated; there are no historical sites in the vicinity. The lagoon will continue to have localized seepage, and in the unlikely event of a berm failure or washout, the environmental impact will be minimal and temporary in duration.
- Regarding Infrastructure and Economical consequences; the immediate area contains limited infrastructure and services. The drainage path is towards Koojesse Inlet, with no threat to the airport and surrounding infrastructure.

Recommendations

Based on our observations noted above, we believe that the Iqaluit Sewage Lagoon has a Low-Risk Dam Classification; therefore, an EPP is not required at this time. However, the consequences of failure should be reviewed periodically in conjunction with the requirements outlined in the current DSG for any amendments or revisions.

Limitations

This report was prepared for the sole use of The City of Iqaluit.

This report was prepared exclusively for the purposed project and site locations outlined in this report.

The report is based on information provided to, or obtained by Concentric as indicated in the report, and applies solely to site conditions existing at the time of the site investigations.

Concentric's report represents a review of available information with an established work scope, schedule, and budget.

The material in the report reflects Concentric's judgement in light of the information available to it at the time of preparation.

Any uses that a third party makes of this report, or any reliance on decisions made based on it, are the responsibilities of such third parties.



Concentric accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made based on this report.

Should there be any questions, please contact the undersigned.

Yours sincerely,

Concentric Associates International Incorporated

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