Morning Brenda,

TDS of 2500 mg/L was selected because this is a common screening value for effluent release to surface water, such as through the US EPA. Since we aren't releasing this excess drill water to surface water, removal of this criteria is reasonable. The TDS limit was not included as a way of screening contaminants, since contamination can be independent of TDS.

The proposed screening steps for contaminants involves first assessing land use of the site and determining the likelihood of contamination and possible contaminant. For example, if drilling is near the diesel power plant, diesel fuel would most likely be the contaminant. Diesel will have a strong odor and can be detected visually. The drilling team will be aware of the possibility of diesel contamination and inspect core carefully for evidence of its presence. If there are any indications there could be contamination, drilling will cease and the soil core and drilling fluid will be stored in tanks and transported off-site for disposal at an approved facility. Soil samples will be sent to Taiga Labs for hydrocarbon analysis to confirm findings. If lab results confirm the presence of a contaminant, the Community Government will be notified immediately. If drilling is taking place along the road outside of the community center, there is very low likelihood the ground will be contaminated, but similar odor and visual detection will apply. Following installation of the well, it will be sampled annually for a range of possible contaminants.

I hope this response clarifies the board staff's concerns. Please let me know if you have any more questions or need more information.

Stephanie

Stephanie Wright (She/Her), PhD
Assistant Professor
Queen's University
Department of Civil Engineering

From: Brenda Van Hauvart <bvanhauvart@wlwb.ca>
Sent: Friday, March 15, 2024 3:30 PM
To: Stephanie Wright <stephanie.wright@queensu.ca>
Cc: rachel.lackey@mail.mcgill.ca; Anneli Jokela <ajokela@wlwb.ca>
Subject: Re: Follow-up on LUP Application Public Review

Hi Stephanie,

you can provide the response by email. It will be included as part of the information prepared for the Board 'consideration.

Masì,

Brenda Van Hauvart, M.Sc., (she/her)

Regulatory Specialist

Wek'èezhìı Land and Water Board
#1-4905 48th St. | Yellowknife, NT | X1A 3S3
email | www.wlwb.ca

From: Stephanie Wright <stephanie.wright@queensu.ca>
Sent: Friday, March 15, 2024 1:21 PM
To: Brenda Van Hauvart <bvanhauvart@wlwb.ca>
Cc: rachel.lackey@mail.mcgill.ca <rachel.lackey@mail.mcgill.ca>; Anneli Jokela <ajokela@wlwb.ca>
Subject: RE: Follow-up on LUP Application Public Review

Hi Brenda,

Thank you for your email. We can provide this response, but I wanted to confirm if you would like it through the online system or through email. If it is in the only system, do edit the current responses or create new ones?

Thanks,

Stephanie Wright (She/Her), PhD
Assistant Professor
Queen's University
Department of Civil Engineering

From: Brenda Van Hauvart <bvanhauvart@wlwb.ca>
Sent: Friday, March 15, 2024 11:31 AM
To: Stephanie Wright <stephanie.wright@queensu.ca>
Cc: rachel.lackey@mail.mcgill.ca; Anneli Jokela <ajokela@wlwb.ca>
Subject: Follow-up on LUP Application Public Review

Dzę nezį (Good day) Stephanie,

Board staff are preparing information for the Board on the Queen's University LUP Application and have a follow-up question from the public review. GNWT-Lands - North Slave Region comment 2 noted that the Application (i.e., Section 2 of the Waste Management Plan) proposes the sampling of TDS for excess borehole drilling wastewater. The recommendation from the reviewer is to remove this sampling since

non-toxic drill waste can be deposited in a natural depression 100 metres from the nearest watercourse. Queen's University said in response that they agree with the recommendation and will remove this step if required by the Board.

There were other comments about the screening procedure used to ensure drill cuttings are free of contaminants before disposal in a natural depression. Queen's University responded that while they generally expect the soils to be contaminant-free, drilling would cease if visual inspection or odor suggests the presence of contaminants.

In the Waste Management Plan, it is indicated that excess drilling fluid will be tested for total dissolved solids (TDS) prior to discharge to the land to ensure any discharged fluid does not exceed 2500 mg/L. If the TDS of the drilling fluids is more than 2500 mg/L, the fluid will be stored in tanks and transported off-site for disposal at an approved facility. It is unclear to Board staff what was the rationale behind the 2500 mg/L threshold for TDS. Is it intended as a screening mechanism for identifying contaminated soil?

To better understand what the objective of setting that trigger was and to be able to better assess if sampling of TDS can be removed, please provide information on the rationales behind setting the 2500 mg/L of TDS trigger and the proposed procedure for determining if excess borehole drilling wastewater is non-toxic and suitable for disposal in a natural depression (if TDS sampling is removed).

Information on this submission is due to the Board next week. Could Queen's University provide a response by 12pm MT on Monday, March 18?

Masì,

Brenda Van Hauvart, M.Sc., (she/her)

Regulatory Specialist

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#1-4905 48th St. | Yellowknife, NT | X1A 3S3
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