

File No: 6135.00

February 4, 2022

Andrew Brigden
Tundra Oil & Gas Limited
295 3rd Avenue
Virden, MB R0M 2C0
andrew.brigden@tundraoilandgas.com

Dear Andrew Brigden:

Re: North Solution Gas Gathering Flowline Project

The Environmental Approvals Branch has completed its review of the Environment Act Proposal and related Technical Advisory Committee (TAC) and public comments for the proposed North Solution Gas Gathering Flowline Project. Additional information is required based on this review.

1. Please provide responses to the following comments from the TAC. The full TAC comments are available on the public registry for context.

Wildlife and Fisheries Branch

What process will be followed and mitigation applied if stick nests or dens are observed along the right-of-way during construction?

Water Quality Management Section

The proposal indicates that flowline testing will use methanol as the test medium. Please discuss/explore alternatives to using methanol that are less toxic to surface water.

Groundwater Management Section

Groundwater wells in the local study area can be shallow and the potential exists for contamination migration through groundwater. The proposal does not evaluate the potential impact of the flowline construction and operation on the current groundwater resources of the area. The actual depth of the directional drilling activities beneath the two Pipestone Creek crossings and at the other locations along the flowline right-of-way are not provided. The potential for impacts to aquifers and local shallow groundwater wells must be considered. If there are any potential impacts, a plan providing a description of the proposed environmental practices to be employed to prevent and mitigate the impacts is required. The plan should include an inventory of groundwater wells within the area and notification to land owners that could potentially be impacted.

2. Please provide a response to the attached comments from D. M. LeNeveu M.Sc. on Behalf of What the Frack Manitoba.

If you have any questions regarding this matter, please contact me at Elise.Dagdick@gov.mb.ca.

Sincerely,



Elise Dagdick
Environment Officer

- c. Daniel Chranowski, Matrix Solutions Inc.
Public Registry

**Comments on Public Registry 6135.00 North Solution Gas Gathering Flowline Project
Tundra Oil & Gas Limited
by D. M. LeNeveu M.Sc.
on Behalf of What the Frack Manitoba
Dec. 18, 2021**

The EAP for Tundra Oil and Gas for the 46 km flow line from five existing Tundra battery facilities near Kola Manitoba to the Steel Reef Infrastructure Corp. compressor terminal, northwest of Sinclair, Manitoba does not contain any information on the sour gas content of the solution gas to be transported. From Sinclair the gas will be transported and refined at a processing facility in Saskatchewan. The Tundra Daly Oil Field and the Tundra oil fields near Tilston are documented to contain high levels of H₂S a deadly toxic gas.^{1,2,3} The Greenhouse Gas Reporting Program data search gives the CO₂ emissions from the Tundra Oil and Gas Battery Daly 12-24-010-29 W1M as 22,822 tonnes of CO₂ equivalent for 2019.⁴ The SO₂ release from flaring of H₂S is not given. However the Battery Application from Tundra Oil for Daly 8-28-9-29 W1M states;¹

“It is anticipated that this Battery will be classified as a Class 3 battery due to the volume of the worst case 1.8% H₂S.”

Appendix A_1 of the EAP has a photograph of Tundra Daly Battery site 12-24-010-29 W1M reproduced in Figure 1 showing the flaring of sour gas. The information provided here conclusively proves the Tundra flowline will carry H₂S.



11. Looking east toward Tundra Daly 12-24-010-29 W1M battery site.

Figure 1. Tundra Daly Oil Battery with up to 1.8% H₂S in solution gas flared

No entries were found in the NPRI Canada data base for toxic sulphur dioxide (SO₂) emissions from any oil batteries in Manitoba even though the above documentation shows that SO₂ would be emitted from batteries flaring sour gas in Manitoba and in particular from the Tundra Daly Battery. Tundra only reported to the national data bases the CO₂ equivalent emissions for this battery and other facilities totalling 23 entries and 464 kilotonnes CO₂e for 2019. The SO₂ emissions were not reported to the NPRI data base.

Tundra has not revealed the sour gas content of the solution gas to be transported in the flowline. A sour gas flowline would require evacuation procedures, notifications, air monitoring equipment and evacuation plans in the event of a sour gas leak. Local residents along the line would have to be consulted and informed of the evacuation plans and the leakage potential.

There is no information as to the fate of H₂S in the gas at the processing plant in Saskatchewan. H₂S in the solution gas would have to be removed and disposed of. Disposal of the removed H₂S would have potential environmental consequences that have not been accounted for. Flaring of the H₂S removed from the solution gas would result in an increase in sulphur dioxide air emissions that would require reporting and monitoring. Added precautions might be required such as higher emissions stacks or restrictions on the amount of emissions. It is recognized that flaring of H₂S is not an acceptable environmental practice and should be curtailed.⁶ One option is deep underground injection of acid gas that is currently being done in Alberta.⁷ Another alternative that is arguably more environmentally responsible is to recover the sulphur from the H₂S and sell it in the form of sulphuric acid as is reportedly being done in the Boundary Dam Carbon Capture Power Plant in Saskatchewan.⁸

Tundra has deliberately avoided revealing that the flowline will carry sour gas. The EAP should clearly state the concentration of H₂S in the solution gas and comprehensively describe the mitigation measures regarding leaks and ultimate disposal of the H₂S in the solution gas.

References

1. Tundra Oil and Gas Partnership, Battery Application for Daly 8-28-9-29 Sept. 3, 2020 https://www.gov.mb.ca/iem/petroleum/applications/tundra_08_28_09_29/08_28_09_29_battery.pdf
2. Health Assessment of Residents Residing Near Oil Batteries in the Tilston, Manitoba Area Allen Kraut, MD, FRCPC Associate Professor Departments of Community Health Sciences and Internal Medicine University of Manitoba Initial draft June 30, 2000 Final report November 20, 2000 <https://www.gov.mb.ca/health/publichealth/docs/tilston.pdf>
3. Informational Notices: Informational Bulletin - Tilston Air Quality Manitoba Conservation, September 2000 <https://www.gov.mb.ca/iem/petroleum/infonotes/tilsbule.html>
4. Environment and Natural resources Canada The Greenhouse Gas Reporting Program data, 2018 <https://climate-change.canada.ca/facility-emissions/GHGRP-G11735-2018.html>
5. National Pollutant Release Inventory Data Search, Sulphur Dioxide, Manitoba 2017 https://pollution-waste.canada.ca/national-release-inventory/archives/index.cfm?do=results&process=true&lang=en&opt_report_year=2017&opt_facility_name=&opt_npri_id=&opt_cas_name=7446-09-5&opt_cas_num=&opt_province=MB&opt_postal_code=&opt_urban_center=&opt_province_comm=&opt_naics6=&opt_naics3=&opt_naics4=&opt_nai6code=&opt_csic=&opt_media=all&submit=Submit
6. Informational Notice 02-1 Interim Guidelines for Implementing Regulatory Changes Relating to the Permitting and Operation of Batteries, Manitoba Industry Trade and Mines, Feb. 15, 2002 <https://www.gov.mb.ca/iem/petroleum/infonotes/02-1.pdf>
7. Acid-gas injection in the Alberta basin, Canada: a CO₂-storage experience Stefan Bachu and William D. Gunter, Geological Society, London, Special Publications, 233, 225-234, 1 January 2004, <https://doi.org/10.1144/GSL.SP.2004.233.01.15> <https://sp.lyellcollection.org/content/233/1/225>
8. Saskatchewan public deserves better answers on \$1.5 billion Boundary Dam carbon capture project, Murray Mandryk, Jan 08, 2016 <https://leaderpost.com/opinion/columnists/saskatchewan-public-deserves-better-answers-on-1-5-billion-boundary-dam-carbon-capture-project>