Tundra Flowline Information Requests-Tundra Responses to EAB-Final March 1-2022

Hello,

Thank you for the comments regarding the Environment Act review of the **Tundra North Gas Gathering Flowline** project.

We will respond in the order the comments are presented in the information request letter.

Tundra will highlight additional specific measures that will be implemented to address issues related to accidental spills or releases, to provide more context.

1. **Wildlife and Fisheries Branch**

a) As mentioned in Table 5.2 on page 58 of the EA document, wildlife nest sweeps will be conducted by qualified biologists between July 15 to the end of August (a minimum of 7 days prior to construction) along sections of the flowline right of way in suitable wildlife habitat, to determine the presence of migratory bird nests.

b) In addition to migratory bird nests, these sweeps will check for large raptor stick nests and mammal dens.

c) If a migratory bird nest, stick nest or den is found to be active, biologists will identify the wildlife species, determine its regulatory status, and document its location on the flowline right of way.

i. Species at risk (SAR) protected by the Federal *Species at Risk Act* will have construction set-back buffers implemented to minimize disturbance, as recommended by Environment & Climate Change Canada.

ii. Provincially regulated wildlife protected by the Manitoba *Wildlife Act* will have construction set-back buffers implemented to minimize disturbance, as recommended by the document '*Recommended Development Setback Distances from Birds; Manitoba Conservation Data Centre; June 24, 2015*'.

iii. If no recommended set-back buffers exist for the specific wildlife species, local provincial wildlife biologists will be contacted to discuss acceptable mitigation measures.

d) Once the wildlife sites (nests or dens) are deemed to be inactive, a wildlife sweep will be conducted to ensure there are no further active nests or dens within the set-back buffer.

i. If no further active nests or dens are found, then construction will be allowed to proceed.

2. **Water Quality Management Section**

a) Tundra Oil and Gas shall avoid using methanol for pressure testing, if possible. The original construction timelines are structured to complete this flowline in the fall of 2022, while ambient temperatures are above zero to allow for the use of a freshwater pressure test medium.

b) As per Manitoba Petroleum Branch regulations, a flowline needs to be tested within 6 months of operation. If Tundra experiences delays in construction activities or delays in the commissioning of this entire project, the final pressure test might be required during winter months.

c) To avoid potential risks around freezing the line during testing, best construction practices are to use a methanol / water mixture.

d) All of the test medium will be recovered and returned to the supplier. This was mentioned in Section 2.1, page 6 of the EA document.

3. **Groundwater Management Section**

Groundwater mitigation measures were identified in Section 5.20 'Mitigation' in Table 5.2 'Potential Environmental and Socio-economic Effects, Mitigative Measures, and Residual Effects' under "Water Quality and Quantity" on page 61 of the EA document.

a) Tundra is following the CSA Z662 oil & gas pipeline standards for the construction of this flowline. To meet and exceed the CSA standards, Tundra has implemented an 'emergency planning zone' (EPZ) between 30 m to 160 m of the flowline to ensure all potential receptors from accidental leaks, spills or releases are addressed with detailed response and mitigation plans.

b) In addition, Tundra will install a state-of-the-art leak detection system (LDS) from Atmos International that provides 24/7 monitoring of this flowline system. The LDS will allow Tundra to respond immediately to any accidental releases of solution gas. Tundra will then be able to respond appropriately to contain and/or prevent negative impacts to potential receptors (including ground water wells).

c) Tundra has compiled an inventory of recorded groundwater well locations in proximity to the flowline. The desktop assessment collected data on well depths and distance of the well to the flowline. Of the 44 recorded groundwater wells listed in the 2019 Manitoba water well database that were within 800 m of the flowline, 11 were shallow wells (less than 30 m depth) for domestic use or livestock production. As some well locations are given as the centre of a quarter section, Tundra will field-verify the actual location of the 11 shallow wells in relation to the flowline footprint, to develop an appropriate prevention & mitigation plan for potential groundwater impacts.

d) In addition, Tundra's Land Department has contacted all landowners which will have this flowline traverse their land, for permission to install the flowline. A list of landowners that

should be notified if accidental leaks, spills, or releases of solution gas were to occur, has been compiled.

e) The actual depth of the flowline trench is 5 feet 6 inches (or 1.7 m) and was mentioned in Section 2.6 'Trench Specifications' on page 6 of the EA document.

f) The planned horizontal directional drilling (HDD) under the Pipestone Creek crossings will vary from 1.7 to 3 m below the creek beds. There are no recorded domestic water wells within 200 m of the flowline, at either of the east or west Pipestone Creek crossings.

g) Tundra will follow the Department of Fisheries and Oceans HDD operational guidelines to ensure potential impacts to water and aquatic life are addressed, as per those actions mentioned on pages 38 & 39 and in Table 5. 2, page 61 in the EA document.

a. An on-site environmental monitor will collect water samples to measure 'total suspended solids' (TSS) and turbidity (NTU) prior to, during and after the HDD operations to detect potential accidental releases and ensure regulatory compliance.

4. **Public Comments on Public Registry 6135.00 by D. M. LeNeveu M.Sc. on behalf of 'What the Frack Manitoba'**

a) Tundra battery facilities are licensed and operated under the Manitoba Oil & Gas Act and regulations. Annual facility reports are submitted to the Manitoba Petroleum Branch which include gas processing rates and detailed third party gas analysis for each facility, including H_2S content. Greenhouse gas (GHG) emissions reporting is provided to Environment and Climate Change Canada according to the technical guidance on reporting of GHG emissions.

b) Gas analysis from the Tundra facilities on this flow line have varying levels of H_2S, ranging from 0.5% to 1.37%. Overall H_2S concentration in this line will be ~0.94%, based on estimated volumes at the time of commissioning. For engineering design, Tundra has assumed a H_2S concentration of 2% to ensure our design is more stringent and safer.

c) As per license conditions for public disclosure and safety reasons, Tundra places large signs at their facilities and all well sites for the public and local residences to be aware of H_2S presence in the solution gas.

d) As previously mentioned, Tundra is following CSA Z662 standards for the construction of this flowline. To meet the CSA standards, Tundra has implemented an 'emergency planning zone' (EPZ) between 30 m to 160 m from the flowline. To exceed this standard, Tundra also selected a flowline route which implemented a setback distance from all residences, greater than required by CSA.

e) Tundra will install a state-of-the-art leak detection system (LDS) from Atmos International that provides 24/7 monitoring of this flow line system. The LDS will allow Tundra to respond immediately to any accidental releases of solution gas. Tundra will then be able to respond appropriately to contain and/or prevent negative impacts to potential receptors.

d) Once all gas is gathered and transported to the Steel Reef compressor station, Tundra transfers possession of the solution gas (by sale) to Steel Reef Infrastructure Corp.

e) Steel Reef Infrastructure Corp. is licensed by the Saskatchewan Ministry of Energy & Resources. Therefore, the processing of the gas (including the H_2S sour gas) is regulated by the Saskatchewan Ministry authorities.

Tundra is looking forward to installing and operating this solution gas gathering flow line to thereby eliminate solution gas flaring emissions from the 5 Tundra battery facilities and achieve a GHG emissions reduction of ~180,000 tonnes of CO_2 equivalent into the surrounding atmosphere.

Thank you.

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