

Environmental Assessment Branch
Nova Scotia Environment
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Please see below my comments on the *Focus Report for a Replacement Effluent Treatment Facility Project by Northern Pulp Nova Scotia Corporation*

I am an environmental engineer from Pictou, NS; this project is of significant importance for me both personally and professionally.

I previously provided comments on Northern Pulp's Environmental Assessment Registration Document (EARD). Some of my concerns and questions have been addressed in the focus report, in particular those concerns relating to lack of baseline data collected for the EARD, however, I continue to have significant concerns about the environmental impacts of the project moving forward and I believe critical information required to properly assess the impacts of the proposed project are missing from the EARD and the focus report.

I implore Nova Scotia Environment to ***not approve this project as currently proposed and to require an Environmental-Assessment Report.***

I have the following comments / questions about the pipeline installation:

The terms of reference for the focus report requested more information on the proposed pipeline routing including maps / drawings of the new routing. In the focus report there is still much uncertainty surrounding the pipeline routing, including:

- The location where the pipeline is proposed to enter the marine environment has not been identified;
- Figure 2.1-1 shows approximate locations only for the project footprint and diffuser location; and,
- Table 2.1-1 notes that "*An alternate route was identified, as the design has not been finalized.*"

The pipeline routing provided in appendices 2.1 and 3.5 are preliminary and conceptual respectively; therefore it is unclear to me what the final pipe routing is.

Further to this, the letter from the NSTIR's Executive Director of Maintenance and Operations provided in Appendix 2.1 of the focus report only indicates that NSTIR will continue discussions with Northern Pulp regarding installation of the pipeline in the highway 106 ROW. There is no specific mention of the pipeline being installed in the ROW in the letter provided. It is possible that NSTIR will not allow the pipeline to be installed in the ROW as the pipeline may impact future ROW maintenance required by NSTIR or pose an environmental liability to NSTIR. I am concerned the project will be approved and the proposed pipeline routing will again be modified. A letter of intent or approval in principle between Northern Pulp and NSTIR should be provided prior to approval of the proposed project.

I do not believe the focus report addresses the requirements of the terms of reference to provide more certain information on the pipeline routing.

Additionally, the focus report indicates that "*...the anticipated crossing methodology for both wetlands and watercourses will likely be based on trenched technology (in the EARD,*

consideration was given to using trenched and trenchless technology, boring techniques (e.g., horizontal directional drilling), for both for wetland and watercourse crossings)....”

I am concerned the project has decided to no longer utilize trenchless technologies to minimize impacts to wetlands. This is presumably due to the fact that the pipeline is no longer permitted to be installed in the shoulder of highway 106 and cannot avoid wetlands by veering more towards the centre of the highway as originally proposed. As stated in the focus report the project will result in permanent direct wetland loss. Section 0.1.7.3 of the focus report states that *“For the wetlands crossed by the pipeline trench, a conservative estimate of direct wetland loss has been identified based on the potential to affect the wetland within the 15 m work space, and for the portion of the pipeline adjacent to Highway 106. The remaining wetland area within the NSTIR ROW (east of the highway) is assumed to be potentially affected.”* This seems to indicate that the report is calculating wetland impacts stopping at the ROW boundary. It should be determined what actual amount of wetland loss will occur as a result of the proposed pipeline installation.

For the marine portion of the pipeline the focus report states that *“The ice scours observed within the Caribou area occur within water depths ranging from 1 m to 9 m likely formed during the winter of 2018/2019. Ice scours were not observed within the area of the proposed diffuser. Of the 133 scours observed in the Caribou area, 15 had a maximum-recorded scour depth on the marine floor of 0.4 m. Ice scour depth information was required to determine the depth of burial of the pipeline. The results of the ice scour investigation indicate that burying the pipeline 3 m under the seabed in Caribou Harbour is appropriate, given the ice scour conditions present”*

The conceptual design of the pipeline proposed to be installed in Pictou Harbour indicates cover of 2m. The focus report indicates that ice scours up to 0.3m in depth were observed in Pictou Harbour. Why was less cover determined to be appropriate for this portion of the marine pipeline? Additionally the conceptual design for the marine pipeline notes that the it is unlikely that the effluent diffuser would be impacted by ice scour given the 20m water depth. What is the height of the proposed diffuser from the seafloor? Also I am concerned one year of field investigation does not provided not enough background information to made a conclusion that the diffuser will not be damaged throughout the life of the project.

I have the following comments / concerns about air quality

The focus report states that *“...ammonia, chloroform, total reduced sulphur (TRS), and hexavalent chromium were predicted to have infrequent ground-level concentrations above their respective criteria.”* It should be noted that this is a comparison against air quality criteria from the province of Ontario. The report also notes that the occurrences of these exceedances is infrequent and the model is conservative.

However, the results of this air quality modeling further demonstrate the need for a full Environmental-Assessment Report. Table 0.1.1-3 which summarizes residual environmental effects related to the atmospheric VEC only includes lists emissions of H₂S / odour as a VEC associated with the activity to operate the ETF and power boiler. The impact of the contaminants noted above is not addressed in the focus report. Further the impact of these air contaminates are also not assessed in the human health risk assessment (HHRA) provided in appendix 9.2 which only consist of “problem formulation” as the full HHRA has not been completed. A full Environmental-Assessment Report should be completed with a complete HHRA. In my opinion it is not sufficient to note possible air contaminates as a result of the

project air quality modeling but not address potential impacts, instead indicating these are likely only resulting from conservative modelling.

I have the following comments / concerns about effluent entering the marine environment:

The report states that “...any potential environmental effects on water quality during the operation and maintenance phase will be highly localized.” and “that water quality at the end of the mixing zone for the three-port diffuser will reach ambient conditions within less than 2 m from the diffuser in terms of total nitrogen, total phosphorous, DO, pH, temperature, and salinity. Colour will return to baseline conditions within 5 m of the diffuser.”

What is the cumulative effect of absorbable organic halides (AOX) which include Dioxins? As per the Receiving Water Study background concentrations of AOX is n/a (assumed to be negligible). The treated effluent contains a concentration of 7.8 mg/L of AOX with a concentration of 0.05 mg/L at the end of the mixing zone 100m from the diffuser. Given the high volume of treated effluent discharge at 62,000,000 L / day and the 50 year projected lifespan of the project what are the long term impacts of AOX presence above existing conditions? This is of particular importance given that AOX are known to be persistent and accumulate in the environment. (<https://webarchive.nationalarchives.gov.uk/20110313212212/http://www.environment-agency.gov.uk/business/topics/pollution/39123.aspx>)”

The response to my question in the focus report was to “Refer to section 4.2 for comments concerning the receiving water study.”

The focus report does not address the cumulative effect of AOX. In fact the modeling only shows simulated effluent concentrations for a period of one month. It is unclear what the cumulative impacts to the marine environment will be over the lifespan of the project.

The focus report indicates that in order to achieve higher levels of sCOD reduction “NPNS has plans to add oxygen delignification after the completion of the ETF...” information on oxygen delignification is provided in addendum #3. This is irrelevant and misleading since this technology is not part of the scope of the proposed project.

A major concern I have pertaining to the proposed project is the lack of information on the decommissioning phase of this project.

The focus report notes that “Northern Pulp will be responsible for: 1. Operation, maintenance, and inspection of ETF components, the effluent pipeline, and marine outfall and diffuser assembly; 2. Sludge management and operation of the facility’s power boiler for incineration of sludge, including air quality monitoring; 3. Monitoring of effluent quality discharged to the receiving environment; 4. Ensuring the effluent pipeline system is operated in accordance with applicable regulations; 5. Maintenance of above and below ground facilities; 6. Emergency response; and 7. Awareness and education of local stakeholders, including members of the public and emergency responders.” There is no reference to Northern Pulp being responsible for decommissioning the ETF. **Who is responsible for decommissioning the proposed ETF?**

The focus report does not address environmental impacts during the decommissioning phase of the project. The EARD noted the following in terms of the decommissioning phase: “Decommissioning of the project would occur at the end of mill life following the completion

of operations. Once the ETF or pipeline is nearing the end of a useful service life, a decommissioning plan will be developed and will be submitted for a separate review requiring NSE approval.”

No investigation has been completed to understand what level of contamination will be left behind at decommissioning phase. Is this project likely to create another major environmental contaminated site in Nova Scotia comparable to the Sydney Tar Ponds and the Boar Harbour Effluent Treatment Facility? Will the soils (including the earthen walls of the new spill basin) and groundwater around the ETF be contaminated as part of the proposed project?

The long term impact of contaminating the existing site through use of an on land effluent treatment facility should be investigated through a Environmental-Assessment Report to understand total impacts of the proposed project. It is unacceptable to view the proposed project simply as a modification to an existing treatment system.

A great deal of information is provided in the EARD and the focus report. Ultimately these reports are stating that there will be no adverse effects to the environment from the proposed project as the ocean will dilute all pollution entering the marine environment and that best practices will be applied during construction and operations to mitigate all potential environmental impacts.

However, given the scope of the EARD there are still large questions remaining for the project including:

- What is the socio-economic impact on lobster fisheries and tourism of the proposed project?
- What is the impact to the Pictou Landing First Nation (PLFN)? and,
- What is the long term environmental legacy resulting from the project after the mill / ETF is decommissioned?

It may be possible that the answer to the above questions is that there will be no lasting socio-economic impacts, no impact to the PLFN and no environmental legacy, but it is also possible that this project could have devastating socio-economic impacts to the Town of Pictou's fisheries and tourism industries, negative impacts to the PLFN and the proposed project could create a major contaminated site which ultimately Nova Scotia tax payers would be liable to remediate.

Again, I implore Nova Scotia Environment to ***not approve this project as currently proposed and to require an Environmental-Assessment Report.***

Respectfully,

Jeff Hilchey, P.Eng