

November 7, 2019

Environmental Assessment Branch
Nova Scotia Environment
P.O. Box 442
Email: EA@novascotia.ca

Dear Mr. Gordan Wilson:

**Re: Northern Pulp Nova Scotia - Environmental Assessment Registration Document-
Replacement Effluent Treatment Facility (Focus Report)**

The Northern Pulp Nova Scotia Replacement Effluent treatment Facility has many concerns for me and my spouse. As residents of Pictou County, Nova Scotia this issues hits us right in our backyard. I myself am a second generation fishermen and father of two - a four year old and a nine month old.

Besides my knowledge as a fishermen I am also a Red Seal Tradesmen trained as an Industrial Mechanic (millwright) which gives me some insight into the industrial workings of a pulp mill.

In Northern Pulp's EA submission of their focus report, there are many issues that are still of great concern for me. I believe that this time the proposal needs to just be rejected, as Northern Pulp has had plenty of time and have yet to put the time and energy into a clear science based report. It needs to be rejected and Northern Pulp told to go back to the drawing board, as a pipe into the Strait isn't going to work. Northern Pulp has not ensured the health and safety of the people of Nova Scotia and of the Northumberland Strait, which we fish and share with surrounding Provinces. I am asking that you, as the Minister for Nova Scotia Environment, reject this focus report of Northern Pulp's proposed effluent treatment facility for the following reasons.

1. Protection of Fish and Fish Habitat:

Since I am a lobster licence holder, the new treatment facility outfall is a major concern - what effects will it have on lobsters and their habitat as well as the lobsters' reproduction system which includes their larvae. This information is so important because it is what will allow the survival and future sustainability of our industry.

In Appendix R of Northern Pulp's original EARD is where you find the lobster study information which is very limited. Here in the executive summary it states, *"It is important to note that the values and distances in the Stantec reports (Stantec 2017, Stantec 2018) have been generated through modelling and not through onsite testing. Therefore, if modeling predictions prove to be inaccurate, then the predicted impact on lobsters as described in this report are invalid."*

This statement here concerns me as to how valid the receiving waters study is as well the lobster study. This area needs much much more information and in-depth studying to ensure our lobster and larvae are not harmed from the effluent leaving the outfall location.

In Appendix 7.3 of their focus report, they quote *"Several studies have identified linkages between reduced survival and developmental differences of American Lobster larvae (stages I-III) and post-larvae (stage IV) when exposed to elevated temperatures."* I have yet to find where they have done studies on the lobster, lobster reproduction and juvenile lobster.

Elevated temperatures are just one of the issues that the pipe discharge of toxic effluent will have on fish health and habit. Northern Pulp's plan to do monitoring after isn't complying with the focus report requirement to have baseline data to show what will happen to our fish species.

Appendix 7.3 of the focus report contains the statement "*the proposed pipeline route will directly interact with the known Atlantic Herring resource*" (**Figure 3-12**) This is not Science. Our herring stocks are in trouble and fishermen have taken drastic quota cuts and shorter season openings in order to protect this vital specie, and a pipe line and a outfall of toxic effluent isn't a pro-active approach to protect this fish resource. For these reasons, no risk should be taken to this vital industry and vital ecosystem of the Northumberland Strait, and the project should be rejected.

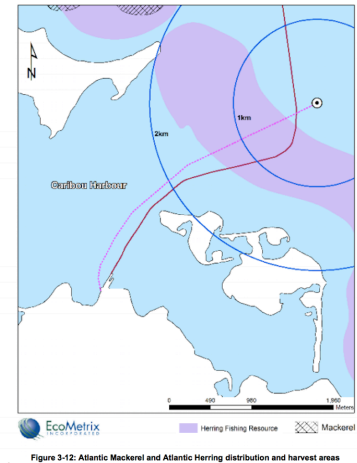


Figure 3-12: Atlantic Mackerel and Atlantic Herring distribution and harvest areas

2. Scallop Buffer Zone:

While on the topic of lobster, I would like to bring to your attention to a link on the DFO website that describes our scallop buffer zone. Here is how the buffer zone reads as to the conditions for the commercial fishers licence set out by DFO and enforced by DFO fishers officers as to the Fisheries Act and is found as scallop condition 7: *No person shall fish for scallops in that portion of scallop fishing area 24 in those waters adjacent to the Province of Nova Scotia within one [1] nautical mile from the nearest point of land in the counties of Cumberland, Colchester, Pictou, including Pictou Island in the Northumberland Strait, and Antigonish.*

With this pointed out I would then like to refer to Northern Pulp's focus report - section 7.3 Marine Environment Impact Assessment (**figures 3-11, 3-12, 3-13, and 3-14**) and then the wording on page 3.35 where they state the outfall location is outside of this buffer zone, but the pipe route is within the refuge. It is true the pipe route is within the refuge, but also the outfall location is within the refuge as well, as 1 nautical mile equals 1.852kms. If Northern Pulp worked with DFO more, they would have been shown and told that their figure in their focus report was incorrect and that the scallop buffer zone is one nautical mile from any point of land. This means their outfall is located inside a marine refuge area which is intended to protect the juvenile American lobster <http://www.dfo-mpo.gc.ca/oceans/oeabcm-amcepz/refuges/sfa-zpp-eng.html>.

Here are other limitations within scallop buffer zones that are set out by DFO.

Prohibitions:

- *Scallop dragging.*
- *No other human activities that take place in this area are incompatible with the conservation of the ecological components of interest.*

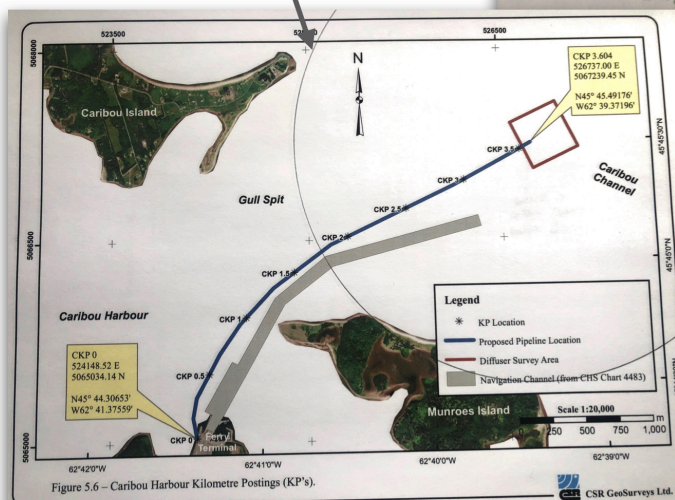
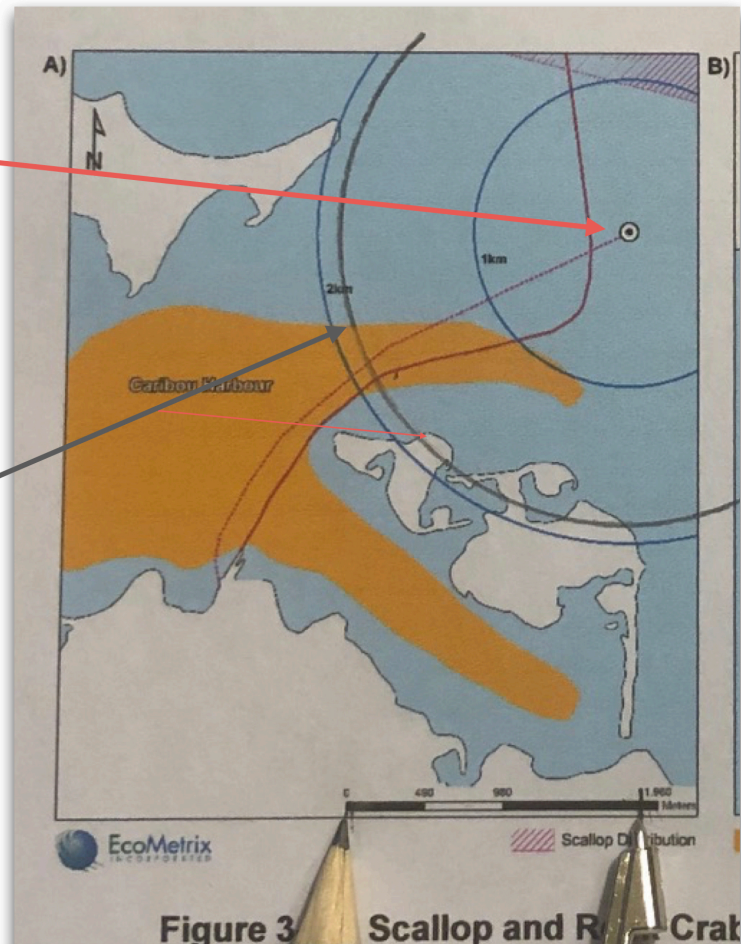
Another concern is that within this refuge to protect fish habitat, they will be digging a trench 3.6km long to lay the 36 inch pipe. To dig this trench as stated in Appendix 2.5, page 18, they will be moving 20,000 cubic meters of fill per km of pipe line. So for a 3.6 km pipe line, that's approximately 72,000+ cubic meters of material being dug within a marine refuge area. Now to put that into perspective a dump truck travelling down the highway carries on average 7.6 -10 cubic meters per load. If we were to pick 9 cubic meters as an average, that would be like filling 8000 dump trucks of material out of a marine refuge area that is designated to protect fish and fish habitat. So as I have stated before, for the reasons above I ask you to reject this project submitted by Northern Pulp.

Scallop Buffer Zone

1 nautical mile = 1.852 km

outfall is within
1 nautical mile of
scallop buffer zone

pencil lined circle area
represents one nautical
mile around outfall
coordinates



DFO Scallop Buffer Zone Regulations/Coordinates

Fisheries and Oceans Canada / Pêches et Océans Canada

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Point	Latitude North	Longitude West
28	46° 47' 15"N	60° 53' 46"W
29	46° 49' 12"N	60° 51' 38"W
30	46° 53' 33"N	60° 44' 27"W
31	46° 55' 34"N	60° 42' 32"W
32	46° 58' 42"N	60° 40' 47"W
33	46° 58' 59"N	60° 40' 21"W
34	46° 58' 41.8"N	60° 39' 56.8"W

6. No person shall fish for scallop in that portion of scallop fishing area 24, in those waters adjacent to the Province of Prince Edward Island inside rhumb lines (similar to straight lines plotted on a nautical chart) joining the following points in the order they are listed:

Point	Latitude North	Longitude West
1.	46°22'17"N	62°06'55"W
2.	46°20'39"N	62°06'54"W
3.	46°19'03"N	62°15'18"W
4.	46°04'39"N	62°15'38"W
5.	46°07'06"N	61°55'09"W
6.	46°04'42"N	61°53'06"W
7.	45°59'28"N	62°25'31"W
8.	45°56'47"N	62°30'38"W
9.	45°56'20"N	62°50'36"W
10.	46°02'25"N	63°04'17"W
11.	46°03'00"N	63°02'25"W

7. No person shall fish for scallop in that portion of scallop fishing area 24, in those waters adjacent to the Province of Nova Scotia within one (1) nautical mile from the nearest point of land in the counties of Cumberland, Colchester, Pictou, including Pictou Island in the Northumberland Strait and Antigonish.

8. No person shall fish for scallop in that portion of scallop fishing area 24, in those waters adjacent to the western coast of Cape Breton, Nova Scotia, within one (1) nautical mile from the nearest point of land, from the Canso Causeway, northward including Henry Island and Port Hood Island, to the Mabou Harbour entrance range lights.

Note: Unless otherwise specified, when the geographic boundary of an area is expressed in Latitude and Longitude those point references are based the Geodesic System North American Datum 1983 (NAD83). Positions are expressed in degrees, minutes, seconds.

Canada

Fisheries and Oceans Canada / Pêches et Océans Canada

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REGISTRATION(S) AND/OR FISHING LICENCE(S) - 2018

This document authorizes the registration card holder and/or licence holder to engage in fishing and related activities on the Atlantic coast of Canada subject to the provisions of the Fisheries Act, the Species at Risk Act and the Regulations made thereunder.

This licence and/or registration is issued under the authority of the Minister of Fisheries and Oceans Canada.

LICENCE HOLDER

FIN: [REDACTED]
ISSUANCE DATE: October 20, 2018
ISSUING REGION: GULF

Licence No. [REDACTED]
Species SCALLOP, SEA
Homeport CARIBOU/FERRY WHARF
Operator [REDACTED]
Vessel [REDACTED] NAME: [REDACTED] IGA: [REDACTED]

**2018 LICENCE CONDITIONS
VALID FOR FISHING SCALLOP
IN SCALLOP FISHING AREA 24**

This licence confers on the licence holder/operator, subject to the Fisheries Act and Regulations made thereunder, the authority to fish under the conditions set out below:

- FISHING AREA**
 - 1.1 These licence conditions are valid for fishing Scallop in Scallop Fishing Area 24.
 - 1.2 It is prohibited to fish in the portions of scallop fishing area 24 as described in Annex B -Definitions of the Scallop Buffer Zones.
- FISHING GEAR**
 - 2.1 These licence conditions authorize the use of the following gear: Drag(1)
 - 2.2 While at sea during the daily closed times, all scallop gear must remain on board the vessel.
 - 2.3 The maximum cumulative width of scallop drag buckets must not exceed 5.08 meters (outside measurement). The measurements must be taken on the outside of each bucket.
 - 2.4 All rings used in the scallop drag must have unobstructed circular openings, the inside diameter of which shall not be less than 82.6 mm with the exception of the first row of rings attached to the bucket frame where the inside diameter of all rings shall not be less than 76.2 mm. The use of rings or solid blocking in the end of the drag bucket is authorized. When using chain sweeps, the mesh used must create an opening equal in size to the 82.6 mm rings.
- WASHERS**

Canada

3. Total Suspended Solids - Depths & Tides

The outfall location is located just off the Caribou Harbour channel and the accumulation affects from the suspended solids in the effluent is another huge concern. One of the first meetings with Northern Pulp and the fishers was held at the Pictou County Wellness Center in early December of 2017. At this meeting, Guy Martin from KSH Solutions was asked the following question, "Where does the heavy solids go?" His response was, "Away".

On page 3.4 of Appendix 4.2 of the focus report, in table 15 it still states, the total suspended solids (TSS) is 48mg/L. When you do the long hand and work that out for their daily water usage of 85 million litres a day, that is over 4 tons of solids sent out into the Northumberland Strait daily. This is unacceptable. Four ton of solids won't just go away as KSH stated.

The accumulative affect and build up is unknown and needs to be addressed. The area in which the outfall is located, is stated in Appendix 2.2 to be 20m in depth, but around the outfall location the depth decreases to 18m within 100m from the outfall and continues to rise as you go outwards from the outfall. What will the accumulation in this area be and what will happen to the diffusers in this situation as they get taken over by accumulation of suspended solids. At slack tides every 6 hr, the suspended solids won't just go away!! So, because the cumulative effects of 4 tonnes per day of TSS are unknown I ask you to reject this project.

Northumberland Strait's tidal range is classified as Micro-tidal, when the **tidal** range is lower than 2 metres. (https://en.wikipedia.org/wiki/Tidal_range). Northern Pulp has not proven that such a low tidal range could effectively disperse 4 tonnes of TSS daily.

Water depths surrounding proposed pipe location & outfall

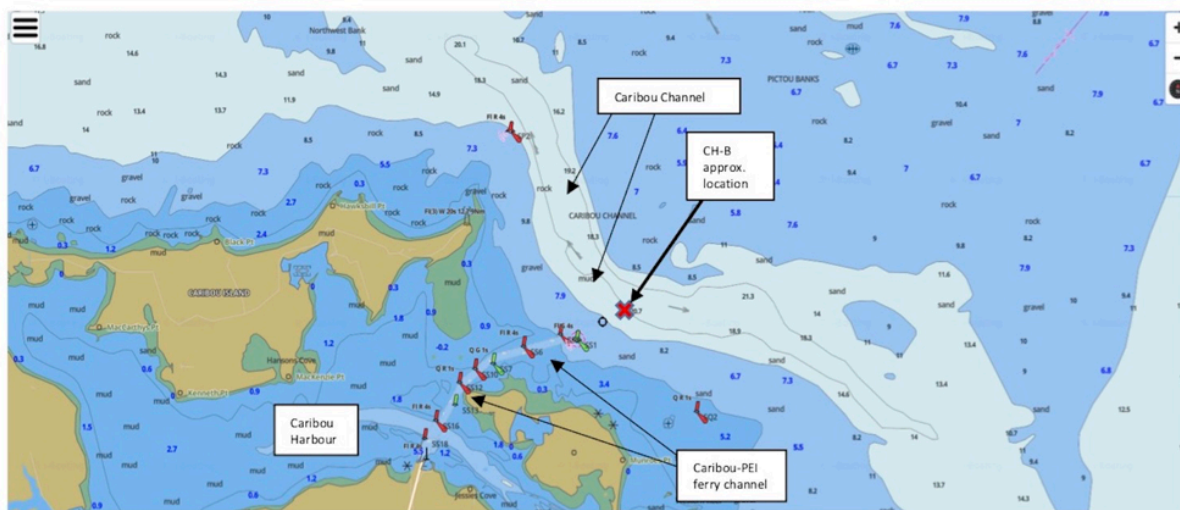
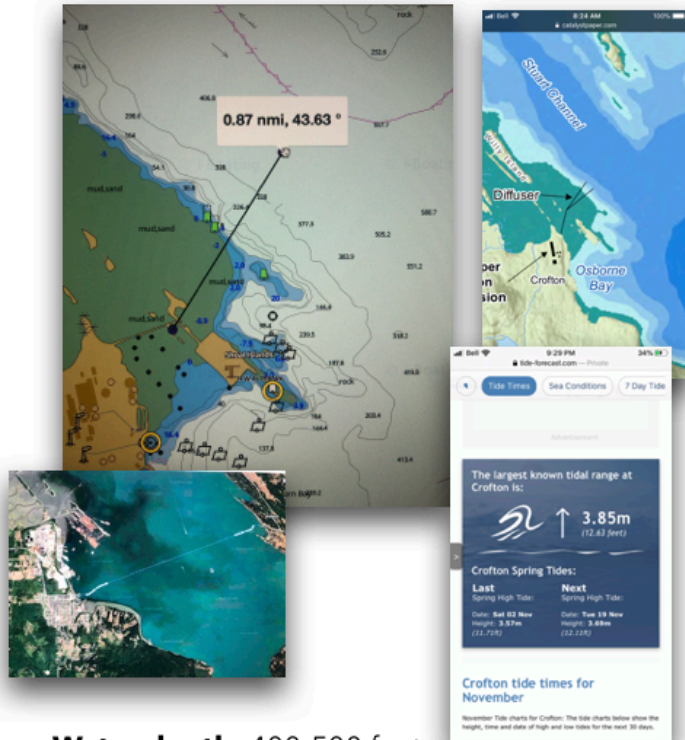


Chart of Caribou Channel and surrounding area

Northern Pulp's proposed outfall at point CH-B in the Caribou Channel is to be placed in a relatively small area with a depth of 20 metres. As this chart illustrates, the area becomes significantly shallower within a short distance. Depths are more typically between <1 to <8 metres in most of the surrounding Caribou Harbour and Pictou Banks area.

Comparison Of Outfall Depths & Tides

Catalyst Paper Outfall - Crofton, BC



Water depth: 400-500 feet
Distance from Shore: 1.96 nautical miles
Largest Tidal Range: 12.63 feet

sources: gpnauticalcharts.com; tideforecast.com;

Northern Pulp - Proposed Outfall

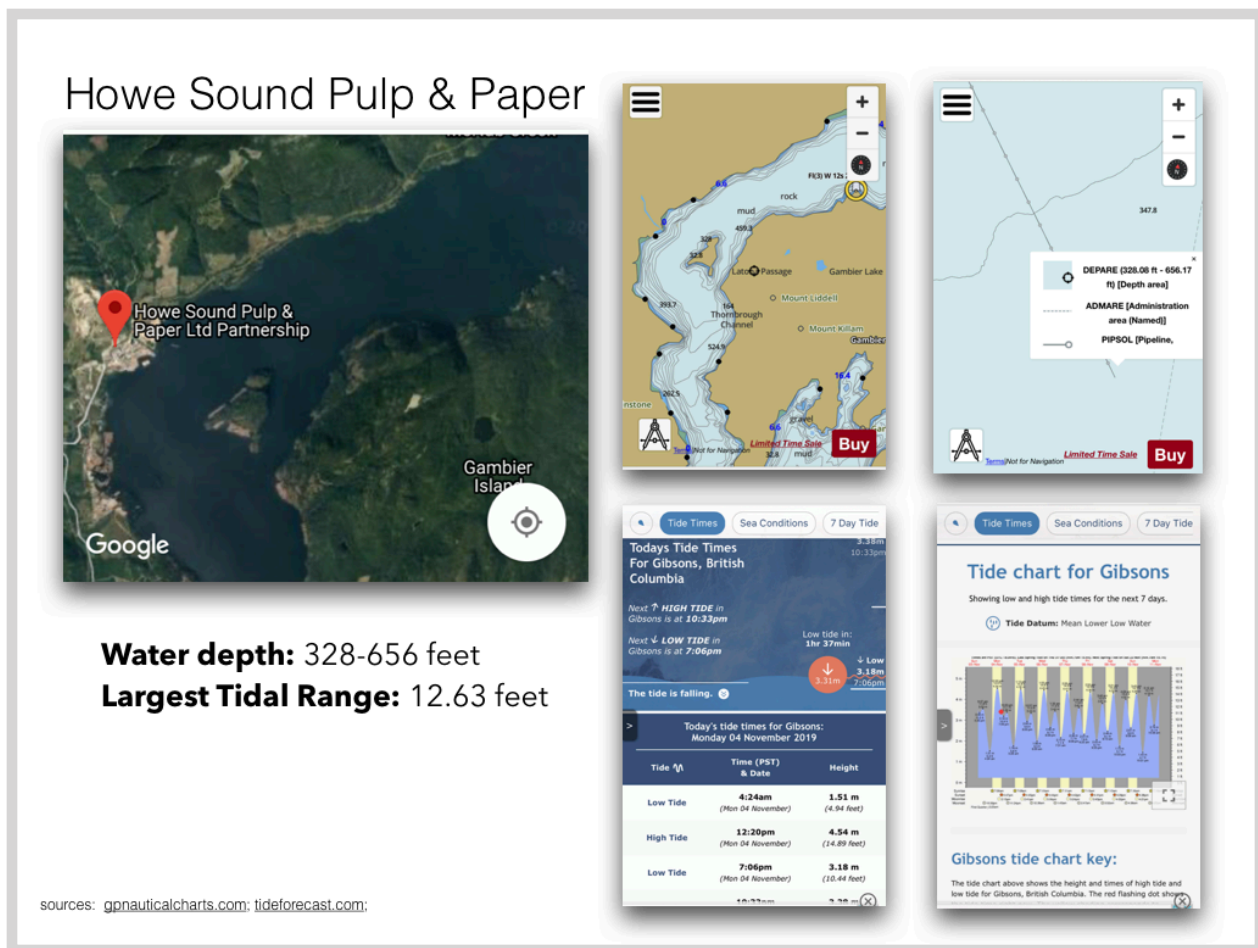


Water depth: 67 feet
Distance from Shore: 1.84 nautical miles
Largest Tidal Range: 6.1 feet

4. Shell Fish Closure Zone/Herring:

Also a concern not addressed in Northern Pulp's EA is what will be, or what is the probability of, a shell fish closure zone around the outfall. Will it be based on depth and volume of water affected? Will it be left up to DFO, not a Northern Pulp issue, but only to be an issue and concern to the fishermen?

Fishing areas in Howe Sound Bay have experienced restrictions on fishing and consumption of shellfish (<https://www.pac.dfo-mpo.gc.ca/fm-gp/rec/tidal-maree/a-s28-eng.html#cr-rest>). Will we experience similar restrictions should Northern Pulp's project receive approval?



The area of the proposed outfall is one of the last remaining herring school breeding/ spawning grounds, which I fish during the fall herring season 16F. As fishers, we have drastically reduced our quota to continue to protect and look after the herring stocks for generations to come. As DFO knows, the herring stocks are in very poor shape and as a precautionary measure, they have cut quota in hope to rebound the stocks.

What is this outfall going to do to these herring spawning grounds? This is just one more reason that this project can not go ahead.

5. Sea Ice

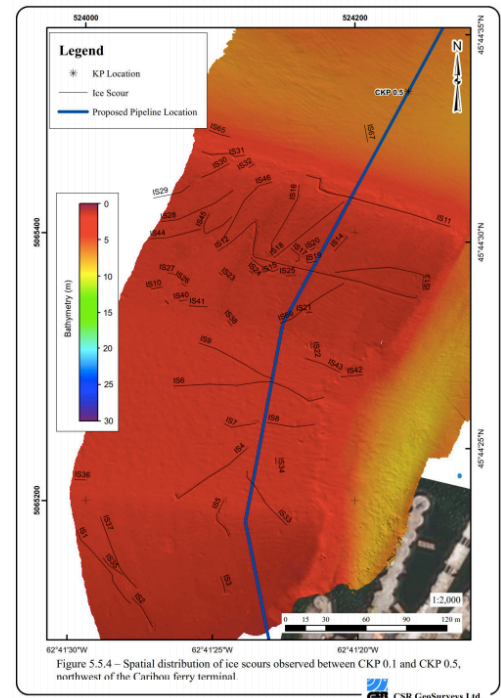
Between the sea ice issues addressed in appendix 2.2 and the pipe construction addressed in appendix 2.5, these two topics together form one major problem in regards to the Navigation Protection Act.

Figures 5.5.1 through 5.5.5 in appendix 2.2 show the ice scours. It is shown that there was 88 ice scours within Caribou Harbour in depths ranging from 0.22m to 19m. These scours range from 1.3m to 5.4 meters wide and 5m to 260m long and a depth of 0.4m.

With these scours and the water depth of only 0.22m to 19.06m (appendix 2.2 page119), what is the interference with the Navigation Protection Act?

As stated within the act **Prohibition 3**, *it is prohibited to construct, place, alter, repair, rebuild, remove or decommission a work in, on, over, under, through or across any navigable water that is listed in the schedule except in accordance with this Act or any other federal Act.*

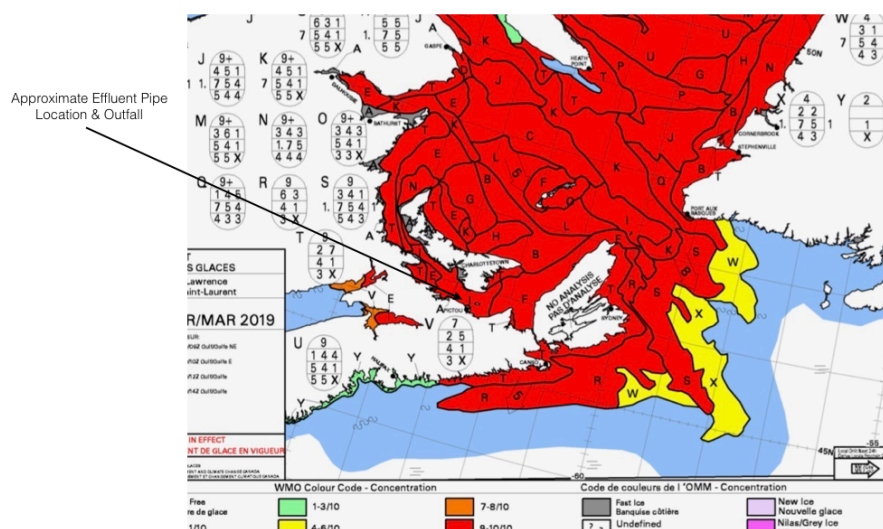
<https://laws-lois.justice.gc.ca/eng/acts/n-22/page-1.html#h-364597>



In appendix 2.5, they indicate that there plan is to dig a trench to the depth of 3m and install a 1m pipe with 2m of top soil on top. Then for sea ice scours protection in areas of concern which have yet to be decided on will be protected by armour rock which will decrease harbour depth by increasing the coverage over the pipe. How will this pipe line route, with very little depths to begin with, have enough water to avoid impeding on the Navigation Act for water travel by canoes, fishing vessels, ferry etc? How can this pipe line route be granted with the Navigation protection Act in place for the safe passage of travellers?

As stated in the focus report, the exact route has yet to be designed and mapped, so how can a proposal be approved without knowing if no navigation will be interrupted? The depth just isn't there. So for this reason the project submitted by Northern pulp must be rejected.

Ice Chart of Gulf of St Lawrence and Northumberland Strait: 03/09/19



These are just a few of my concerns as a fisher, but working full-time this winter as a millwright and with a new born in the house, having time to study this EA in such a short time has been challenging.

As a millwright, I would like to touch on the following.

6. Power Boiler

Now my next few points of concern are with the burning of the sludge and what will be taken out of the new effluent treatment system to be burnt in their power boiler and sent out into the air.

This power boiler does not have a precipitator! This is the same power boiler that failed emissions tests in 2015, 2016 and 2017. As stated in a news article in The New Glasgow News, dated Jan 22 2018, the reason for the failure of the emission limits was because of what was burned in it.

When Northern Pulp changed their burn mix, there were improvements. *"These included changes to what went into the boiler, and how it was burned, which led to more efficient burning of that material and fewer particles leaving the boiler. One significant improvement was to reduce the amount of sawdust and shavings, and to increase the size of the bark put into the power boiler. That had a significant improvement on performance."* - Northern Pulp Director of Communications, Kathy Cloutier. <https://www.ngnews.ca/news/local/northern-pulp-reports-improvements-in-quality-of-stack-emissions-179533/>

If this boiler is going to be responsible for burning the sludge, it concerns me that this was not addressed fully in the focus report. How they will get their mixture right to pass any emission limits test? How will the particulate matter be taken out of the air when there is no precipitator? I feel Nova Scotia Environment needs more information on this matter to insure public health is not at risk.

7. Plant Drainage

Now my final point that I'm going to mention and touch on is an in-plant issue that deals with their drainage and cleaning of their systems like the digester, pumps, and their pipe lines within the plant that are full of green liquor, brown liquor, white liquor, black liquor and any other chemical substances that are used in the pulp making process.

During shut-down periods, these substances get flushed with acid for cleaning purposes. During these shut-downs or during emergency break-downs within the plant, at any given time, these substances are flushed down a drain and out into Boat Harbour. Any process interruption is drained off and sent down a drain out into Boat Harbour as well.

No where in Northern Pulp's focus report does it mention how they will deal with kraft interruption or their cleaning processes for the items mentioned above. The focus report does not mention how the new system will handle these chemicals in their raw form or how the microorganisms that are used in the AST system will interact with these chemicals.

This is a major concern because these types of incidents happen far too often in this plant and more information should be required as to what will the effects be on the AST system. Any

slight mix up in their process will affect their AST system, which then affects the outfall discharge.

I want to thank you for your time in reading my submission and hope that you take my concerns as serious as I do for the health and well being of the Northumberland Strait -that all species and their larvae are protected and studied to ensure they will be around for years to come.

If fishermen are held to respect Marine Refugee Areas to insure safety of the juvenile lobster, so should Northern Pulp. There should be no risk put on any species in the Northumberland Strait that could cause adverse affects to a commercial fisheries and to human recreational enjoyment.

Let's get this assessment done right and protect the water and air from harm that can not be reversed. I look forward to hearing from you with regards to these issues, that this project is not given any approvals of any kind and is rejected.

Thank you and Sincerely,

Ryan MacDonald & Jackie Ewart