

What you should know about Northern Pulp's Proposed New Treatment Facility

1. Why Northern Pulp's proposed new AST facility is not an acceptable option.

Northern Pulp's proposal to use an Activated Sludge Treatment (AST) effluent treatment system similar to the system used at Port Hawkesbury Paper for their treatment facility ignores the differences between the mills. Both mills produce pulp, but PHP is a thermo-mechanical pulp (TMP) mill, while NP is a chemical bleached kraft mill.

Port Hawkesbury Paper uses peroxide bleach and thermo-mechanical refining (no chemicals) to break down the lignin in wood fiber to produce pulp. Northern Pulp uses chemicals to produce pulp, plus additional chemicals to bleach the pulp. Northern Pulp bleaches with **chlorine dioxide** (ECF), and while, switching to ECF was an improvement from an older method used pre-1997, it does not eliminate the presence of dioxins, furans or other toxins in the effluent. **NOTE: Environment Canada has "Effluents From Pulp Mills Using Bleaching" listed as a toxic substance. This includes any mills still utilizing a chlorine or chlorine dioxide process.**

NP does not have an oxygen delignification system as most other modern pulp mills do. Oxygen delignification aids in reducing chemical usage and environmental impact. In addition, many mills recycle water, while NP does not.

A chemical-bleached kraft mill like Northern Pulp produces approximately 4 times more wastewater than Port Hawkesbury Paper. NP's waste water contains toxins that are not found in PHP's waste water, or in the waste water of most mills using AST systems that employ the use of oxygen delignification and recycle water.

The new system proposed by Northern Pulp for treating effluent would use a multi-stage process to separate liquids and solids and then aerate. **The wastewater would still contain toxic chemicals and traces of heavy metals which would accumulate at the 'point source' outflow location in the Strait.**

2. Hasn't the effluent been ending up in the Strait all along? How would the proposed new system be different?

Some supporters of piping NP's waste effluent into the Strait have said there is no reason for alarm, because "the effluent has been going out into the Strait for years anyway." This is only partially true.

A study conducted in 2005 showed that healthy mussels deployed into the Pictou Harbour and exposed to mill effluent and untreated municipal sewage for 6 months had developed leukemia. Another study (1969) showed that the effluent had never been flushing properly with a large amount settling back into Pictou Harbour. Because the old system was never flushing properly, most of the effluent has been confined to the local shoreline and has been flowing back into Pictou Harbour, rather than into the Strait. This was a good thing for the Strait, but not for area residents, especially Pictou Landing First Nation.

In Northern Pulp's proposed new system, waste water would go straight out from the new Abercrombie Point treatment facility into "deeper waters." This could result in the pollutants affecting a far wider area because of "improved flushing." And pollutants would still impact the local area around Lighthouse Beach, due to accumulation of toxins and traces of heavy metals near the new proposed outflow location.

3. What is in the effluent?

Northern Pulp's own reports say that they release over 1000 kg (one metric ton) of suspended solids in their waste water each day. Test results have revealed the presence of dioxins, furans, chlorinated compounds, halogenated organic compounds and traces of heavy metals. These substances are known to have negative impacts to aquatic life. The study prepared for Northern Pulp by engineering consultants KSH Solutions Inc. clearly shows that there will be very little change in wastewater quality with the new AST facility. **NOTE: But the 300-acre Boat Harbour basin which currently helps settle and cool the treated waste water will be absent in this new AST system.**

4. Supporters of piping the effluent into the Strait say waste water will be diluted in the larger body of water, so the effluent will not cause harm to the fisheries or the larger environment. But that's not accurate.

Even diluted, the toxins can have serious effects on aquatic life and the overall environment. Levels may be low at any one moment, but cumulative impacts over the longer term would have negative effects on aquatic life and the aquatic environment. In the case of NP's effluent, the volume of contaminants contained in the waste effluent is significant. Studies show that exposure even to low concentrations of heavy metals and other chemicals over time can disrupt reproduction, weight gain, and food sources of aquatic life. Also, bioaccumulation of toxins including heavy metals in aquatic species is of great concern.

5. Hot water is a hazard to marine environment.

NP presently releases 80 to 90 million litres of wastewater per day. This waste currently enters Boat Harbour at a temperature of approximately 40 degrees C. A cooling tower as proposed by NP for its new treatment facility should lower waste effluent temperature to 32-36 degrees C. This would represent a 20 to 28-degree C water shock to marine life, if this water entered a marine habitat. This thermal shock would kill any marine life within meters of the discharge point.

This thermal loading should be contrary to the Fisheries Act. Yet this issue is not addressed in KSH's design proposal for a new facility. There is no plan to bring wastewater to within 1 to 5 degrees of the natural habitat.

Note: The KSH study appears to have been based on 53 million litres of effluent per day. The actual current number is 80- 90 million litres per day. This raises questions as to whether the proposed new facility will work properly?

Conclusions:

- ❖ **A fast track environmental review is unacceptable.** In-depth provincial and federal environmental reviews of all potential impacts, including time for meaningful participation by the public and independent scientists, are required.
- ❖ **Don't put the fisheries at risk.** Damage to the fisheries would have long term consequences. Damage could take decades to repair, if ever. The financial impacts on NS, Prince Edward Island and beyond would be significant.
- ❖ **Northern Pulp's power boiler is already failing air emissions tests.** Burning waste sludge containing toxins in a faulty power boiler is unacceptable.

❖ **The Northumberland Strait is not a Dumping Ground and there IS another option.**

Northern Pulp's owner, Paper Excellence, owns two mills in Western Canada that are chlorine-free Bleached Chemical Thermo Mechanical Pulp (BCTMP) mills with "zero-effluent" or "closed-loop" treatment facilities. Paper Excellence already has the internal expertise to run a zero-effluent facility. The technology exists. It would mean that Northern Pulp's owner's, Paper Excellence, would have to invest in a major upgrade to convert to a thermo-mechanical mill. It would be technically possible for NP to upgrade to a BCTMP mill, which would allow them to run a zero-effluent mill. This would be expensive, but pennies compared to what the fishing industry is worth, not to mention the health of area residents. If the mill really plans to remain in Pictou County for decades, as mill manager Bruce Chapman has stated, NP should install the best and safest closed-loop, zero-effluent facility. Again, this would be pennies compared to the profits from decades of operation.

❖ **Don't do the wrong thing again.**

The Boat Harbour experience shows clearly that words of reassurance are cheap, but a wrong decision would be very costly for our communities, and for all of NS. Even if operated as intended, without any failings, there is enough evidence to show that Northern Pulp's proposal to pipe partially treated effluent into the Strait can lead to harm. How much harm and how widespread is not clear. The fact that Northern Pulp has not been able to comply with its present Industrial Approvals, and that the provincial government has not monitored conditions of its environmental approvals or enforced compliance, as reported by the NS Auditor General, makes NP's proposed new system even more risky.

6. Proposal to burn contaminated sludge in power boiler raises new threats to air quality.

The KSH treatment system proposal includes a plan to burn the waste sludge. The waste sludge contains toxins which would be released through the stacks of the mill's power boiler.

The proposal is to **"dewater the sludge prior to mixing it with bark and other woodwaste for combustion in the mill's power boiler."** **This is the same power boiler that is currently and repeatedly failing stack emissions tests.**

Problems with air quality from mill emissions have been documented for years. Lack of appropriate monitoring and enforcement already puts area residents at risk. Now, Northern Pulp is considering adding sludge containing toxins to the combustion mix, increasing health risks from NP's air emissions.

Many pulp mills in Canada now have closed-loop effluent systems – zero effluent released into the water or air. It **CAN** happen here.

Sources of Information Include:

Detecting p53 family proteins in haemocytic leukemia cells of *Mytilus edulis* from Pictou Harbour, Nova Scotia, Canada, S.D. St-Jean, R.E. Stephens, S.C. Courtenay, and C.L. Reinisch

Tidal Flushing of Pictou Harbour – Fisheries Research Board of Canada No. 146

Environment and Climate Change Canada Website – List of Toxic Substance – Effluents From Pulp Mills Using Bleaching

Spatiotemporal assessment (quarter century) of pulp mill metal(loid) contaminated sediment to inform remediation decisions – A Study by S.D. St-Jean, R.E. Stephens, S.C. Courtenay, and C.L. Reinisch – by Emma Hoffman, James Lyons, James Boxall, Cam Robertson, Craig B. Lake, Tony R. Walker

Middle River of Pictou Water Availability - by RV Anderson Associates Limited

Boat Harbour Soil Sample Results – Jif Consulting MAXXAM Job Number: B4A9744

Public Presentation by Donnie Burke and Ken Swain of NS Lands

Comments on NS 2011-076657-R03 - N. McCubbin Consultants Inc.

Water Use Reduction Projects Northern Pulp – AMEC Foster Wheeler

Assessment of public perception and environmental compliance at a pulp and paper facility: a Canadian case study – by Emma Hoffman, Meagan Bernier, Brenden Blotnicky, PeterG.Golden, Jeffrey Janes, Allison Kader, Rachel Kovacs-Da Costa, Shauna Pettipas, Sarah Vermeulen & Tony R. Walker

Northern Pulp's Current Industrial Approval

Pilot study investigating ambient air toxics emissions near a Canadian kraft pulp and paper facility in Pictou County, Nova Scotia – by Emma Hoffman, Judith R. Guernsey, Tony R. Walker, Jong Sung Kim, Kate Sherren & Pantelis Andreou

<https://www.pulpandpapercanada.com>

Northern Pulp – Effluent Treatment Overview Presentation

Personal correspondence with industry professionals

An Encyclopedia

The Oxford Dictionary