



379 Ronka Road
Worthington, ON
P0M 3H0
(705) 866-1677

LindaH@OntarioRiversAlliance.ca
OntarioRiversAlliance.ca

29 October 2013

Stephanie Hodson
Stakeholder Relations Officer
Xeneca Power Development Inc.
Email: SHodson@Xeneca.com

Dear Ms. Hodson:

Re: Wabagishik Rapids Proposed Waterpower Project

Vermilion River Stewardship (VRS) and Ontario Rivers Alliance (ORA) would like to jointly comment on the Wabagishik Rapids Generating Station Environmental Report (ER) as follows:

1. Guarantee of Proponent

On an important document such as this, and for the purposes of validity and assurances, it is critical to include the author's credentials and guarantee that the information and promises contained in the ER along with its studies and reports are accurate and complete. This important guarantee is missing from this ER.

2. Contaminated Sediment – Severe Effect Level

The Vermilion River system in the Greater District of Sudbury has already been highly compromised by over 100 years of mining waste and effluent, and a long history of 9 upstream wastewater treatment facilities releasing treated, undertreated and untreated effluent into its waters.^{1 2} A 1986 MOE Sediment Study for Wabagishik Lake³ underscores this history when it reported heavily contaminated sediment containing heavy metals such as nickel (24 times over the severe effect level (SEL), copper (5 times over the SEL), arsenic (3 times over the SEL); lead (1.5 times over the SEL), iron, and manganese over the SEL, and zinc, chromium and cadmium at elevated levels. On several occasions the VRS has requested that Xeneca undertake sediment sampling on Wabagishik Lake, and downstream in the bay area where silt and sediment have collected over the years, an area that is very vulnerable to the extremes of flushing, dewatering, erosion and scouring.

Xeneca was made aware of this study in the spring of 2013 in a public forum at the Walleye Club Conference, and yet none of its findings were addressed in this ER, except

¹ Flushing Out the Truth: Sewage Dumping in Ontario – Ecojustice Report - 2009

² The Great Lakes Sewage Report Card – Ecojustice - 2013

³ Historic 01003 Wabagishik Lake Data – Sediment Guidelines – Wabagishik Lake Water Quality Data 1983 to 1985 and 1993, and Wabagishik Lake Sediment Chemistry 1986

for a brief dismissal of the “*potential presence of contaminated sediment at the bottom of Wabagishik Lake*”⁴. This dismissal is misleading and unacceptable as Xeneca knows full well that the MOE’s sediment study revealed several heavy metals that were many times over the severe effect level.

If Xeneca were diligent in addressing environmental concerns at Wabagishik, they would have undertaken their own study when they found out about the heavy metal contamination. In neglecting to do so, Xeneca has eroded our confidence by failing to address the potential impacts on water quality, aquatic life and public health and safety.

Xeneca only subscribes to standard construction best management practices, but the handling of this contaminated sediment would require very high level containment and care in both construction and operation. If this sediment is not properly contained it will be stirred up and could ultimately be washed down into the Spanish River, and on into the North Channel of Lake Huron.

In consideration of this highly contaminated sediment reported to be at severe effect levels, it is doubtful Xeneca can claim that it will generate sustainable renewable energy, green energy, or have any kind of net benefit for the people of Ontario – especially with the small amount of power (approximately 1.5 MW) that would be generated.

Xeneca must undertake a sediment study both above and below the dam area to determine sediment composition, and then undertake a comprehensive plan to contain and control the sediment, both during construction and operation.

*“The objective of the Class EA is to help ensure that projects are planned in an environmentally responsible manner”, and that “proponents take into account the potential impacts and benefits of proposed waterpower projects as well as the interests of individuals, communities, agencies and organizations, as appropriate.” “Common to all of these processes are the themes of “environmental responsibility” and “public accountability”.*⁵ It is our position that Xeneca has not fulfilled the requirements of the Class EA for Waterpower for all the reasons noted herein, this project has not been planned in an environmentally responsible manner, and has not fully taken into account the interests of the environment, local stakeholders and the public.

3. Release of Heavy Metals

A recently released study reports on the impacts of wetting and drying of peat in wetlands from climate change that *“is predicted to cause an increase in frequency and severity of droughts in the boreal ecozone, which can result in the lowering of water tables and subsequent release of acidic, metal contaminated waters from wetlands. We believe that in areas where historical deposition of metals and sulphur was severe, these episodic pulses of metals could reach concentrations sufficiently high to severely affect aquatic communities in receiving waters and cause a delay in biological recovery.*

These results are important considerations for water quality of boreal surface waters in general, but this study also has particularly important implications for restoration efforts in smelter-impacted areas like Sudbury. Efforts to restore aquatic ecosystems in such areas and protect freshwater resources elsewhere must take into account

⁴ Wabagishik Rapids ER, P-187

⁵ Class Environmental Assessment for Waterpower Projects, April 2012, P-12

biogeochemical processes within the entire watershed, especially within wetlands. In addition, disruptions to biogeochemical cycles are likely to become more prevalent and spatial and temporal variation in water chemistry is likely to increase in a time of changing climate.”⁶ “This sulphate-release has been documented in wetland soils and riparian sediments in the Sudbury area and elsewhere, and can result in metal release with even small changes in soil moisture content.”⁷

This study is very relevant to this peaking facility where water will be held back from downstream flow, and will result in a wetting and drying of sediment and wetlands on a daily basis. The ER reports on the horseshoe-shaped riffle, “(Q_{TL}) during the day (25m³/s as per operating plan restriction (Ortech 2013). The daily variation in flow that occurs at these times will result in wetting and drying of channel substrate in this area of habitat. The area affected by drying has been calculated by comparing the area wetted under existing conditions during the average August flow rate of 15.5 m³/s and the proposed minimum flow in August of 5 m³/s. The affected area is 1,000 m² in size (Xeneca 2012b).”⁸

This area was specifically addressed because the Department of Oceans and Fisheries expressed concern for it. However, what other areas will be subjected to this wetting and drying? What about the downstream bay area where it is reported that navigation could be impacted, and how will the wetlands and tributaries be impacted by reduced water flow? Of course the figure of 1000 m² does not take into account the drying of the littoral zone of Wabagishik Lake, and whatever wetlands that could be impacted by the constant fluctuations of water levels from this peaking operation.

Xeneca must go back and do additional studies to address the impacts of daily wetting and drying of sediment and wetlands on the release of heavy metals into the environment, and how that will impact on public health and safety, aquatic life, water quality, and on the North Channel of the Great Lakes.

4. Headpond & Zone of Influence

Xeneca has defined the headpond as only extending to the outflow of the lake, when in fact all of Wabagishik Lake will be used as a headpond. This fact is supported in the ER many times when it is reported that “Wabagishik Lake will function as part of the headpond”⁹ and “once operational, any modification of flow that affects the headpond also affects the lake”.

Xeneca also points out that “Minor fluctuations in lake level will occur on a daily basis in conjunction with dam operations, and some ability to control lake levels during drought conditions may also be realized. The project is therefore considered a lake-coupled project, and the study area includes Wabagishik Lake.”¹⁰ We have yet to find one study that was completed for Wabagishik Lake.

This lake coupled operation will cause lake water levels to rise and fall daily with a 10 cm operating band. On close examination of the ER it raises the question of whether this was done to avoid having to carry out more extensive erosion, fisheries, wildlife, and

⁶ Szkokan-Emilson, E.J., Kielstra, B., Watmough, S., Gunn, J.M. (2013) Drought-induced release of metals from peatlands in watersheds recovering from historical metal and sulphur deposition. *Biogeochemistry* DOI: 10.1007/s10533-013-9919-0

⁷ 29 October 2013 letter from Erik Szkokan-Emilson to Xeneca – Re: Wabagishik Rapids GS ER

⁸ Annex III, Part 3, Preliminary Fish Habitat Compensation Plan, P-26

⁹ Annex III, Part 1, Natural Environment Characterization & Impact Assessment Report – P-160 of 174

¹⁰ Annex III, Part 1, Natural Environment Characterization & Impact Assessment Report – P-9 of 174

water quality studies on Wabagishik Lake. This is very disturbing as it appears to be an attempt to cut corners and avoid addressing the full environmental impacts of the project.

Xeneca's own ER points out that "*Impounding rivers for hydroelectric generation can change their water quality through warming due to decreased water flow and increased surface area exposed to sun, changes to water chemistry from water contact with newly flooded soil and changes in flow, increases in oxygen demand and changes in microbial activity in the flooded soil. Typically, water quality has a very rapid response to inundation, changing quickly and then stabilizing within a few years. The potential increase of available mercury in surface water is a particular concern with water impoundment. Mercury and methyl mercury may biomagnify within the food chain and can pose a health concern to humans and wildlife that consume fish. The rate of mercury accumulation in fish depends on a variety of factors including fish size, diet and trophic position, as well as site-specific factors such as the type of terrain flooded, hydraulic residence time and water level fluctuation.*"¹¹ This report didn't mention that sediment can also be a major contributing factor in methylmercury production.

This report clearly points out that this waterpower development could result in increased mercury concentrations in fish tissue, when there are already "Fish Consumption" restrictions for the Vermilion River below Lorne Falls, including Wabagishik Lake, all the way out to the confluence with the Spanish River.

This report goes on to say that "*although aluminum, copper and nickel concentrations exceeded the Ontario Provincial Water Quality Objectives (PWQO), the project area has relatively good water quality typical of a northern Canadian Precambrian Shield river with limited impacts from mining activities*". How can this be considered good water quality when it exceeded the PWQO in all of these areas?

It appears as though Xeneca feels justified in not doing any erosion, water quality, fish sampling, or study of aquatic life, reptiles, or birds on Wabagishik Lake. This appears to be because Xeneca has confined the headpond to the 800m area immediately above the dam, instead of all of Wabagishik Lake. This becomes apparent when Hutchinson Environmental Solutions Ltd. (HESL) reports, "HESL understands from Xeneca that the facility will not impound water in Wabagishik Lake."¹² This formed the basis of the Hutchinson study, and is obviously incorrect as Wabagishik Lake will be used to impound water for the hydroelectric facility, and the lake will be utilized within a 10 cm operating band – and more when you include the wave seiche effect.

5. Erosion, Shoreline Stability & Scour

Upstream of the Dam:

See our comments under "4. Headpond and Zone of Influence".

The Vermilion River below Lorne Falls dam, and all of Wabagishik Lake, a distance of 9.4 km, of what is referred to as the "zone of influence" (ZOI) in the ER, were not studied in the Geomorphic Report – even though daily peaking will fluctuate lake water levels within an operating band of 10 cm and will impact the entire area. The ER indicates that this 10 cm fluctuation is less than what might be caused by wave action or siege effect at

¹¹ Annex IV, Part 3 of 4 – P78, 2012 Pre-Development Water Quality and Fish Tissue Report

¹² Annex IV, Part 3 of 4 – Hutchinson Environmental Sciences – Surface Water Quality and Fish Sampling Guidance

present; however, as one regulator pointed out, this 10 cm would be in addition to the wind siege effect. The Report also states that “*the fluctuation of daily water levels upstream of the proposed dam can increase the amount of shoreline erosion that would occur without modified operation.*”¹³ And yet there were no environmental studies completed for this entire area. This is not only irresponsible, but unacceptable.

Xeneca reports “*For the Wabagishik Rapids development, fluctuation of daily water levels in the backwatered area upstream of the dam will likely not have an impact on bank stability due to the presence of bedrock lined channel in the backwatered zone.*”¹⁴ Agreed - this area is mostly gravel and rock with little vegetation. It is no surprise that Xeneca confined their definition of what constitutes the headpond to this area only – much cheaper and easier to mitigate any problems in this section of the rapids. This seems to have negated their sense of responsibility for any impacts this could have on the lake.

Xeneca dismisses all effects on the lake when it reports, “*While Wabagishik Lake will function as part of the headpond, it will not be newly inundated and water levels will not change substantially.*”¹⁵ In truth, water levels on Wabagishik Lake will change by the same amount as the water levels in the headpond area. This analysis makes no mention of the potential erosion impact on Wabagishik Lake and the upstream portion of the Vermilion River with water levels rising and falling within a band of 10 cm on a daily basis for approximately 80% of the year. However, Xeneca reports that there would be “*no notable erosion concern*”. We request a clear and traceable method of how they arrived at this conclusion.

Xeneca reports that changes in water levels created by the facility are less than half the magnitude of the fluctuations that occur under existing conditions¹⁶; however, Xeneca ignores the fact that water fluctuations on the Vermilion River and Wabagishik Lake do not rise and fall daily under existing conditions. In actual fact this entire area - W1 and W2 - were not even studied in the Geomorphic Assessment – this is gross negligence.

Xeneca must call the entire lake and river area above the dam, all the way up to the base of the Lorne Falls GS a **headpond**, and treat it as such, as that is what it is used for and that is what it is.

Downstream of the Dam:

Downstream of the dam, this peaking operation will operate within an operating band of 30 cm. On a daily basis large sections of the river would be dewatered only to be flushed with a wall of water when the turbines are turned on at peak demand hours, and flow velocity would instantly jump from the environmental flow of 5, 6.5 or 8 cms to 25, 26.5 or 28 cms. This rush of water flooding out from the turbines would be like turning a fire hose on a garden. Xeneca states that this is within the “natural fluctuations” in flow velocity, but natural fluctuations do not occur daily to this extreme, nor do they create an instant wall of water.

In the downstream bay area identified as W4 and W5 in the geomorphology report is where the greatest potential for erosion exists. W4 is described as a “*sediment sink*”

¹³ Geomorphic Report, Annex 1, Part 2, P49

¹⁴ Annex III, Part 1, P160 – Inundation Impacts and Proposed Mitigation

¹⁵ Annex III, Part 1, P160 – Inundation Impacts and Proposed Mitigation

¹⁶ Appendix C – Part 2, P-224

and W5 was “*primarily comprised of fine silts and sands or coarse gravel*”¹⁷ in this report. This bay area is filled with very fine silt that would very easily be disturbed and churned up with rapid flow velocity changes – Xeneca does not address this in the ER.

It is our position that due to the operation of this peaking facility, with rising and falling water levels and rapid increases in flow velocity, that there is potential for considerable erosion, sedimentation and scouring of the substrate that would send heavily contaminated sediment and soils downstream. This would have serious repercussions for all downstream aquatic life and habitat, as this heavily contaminated sediment would eventually end up in the North Channel of Lake Huron.

Xeneca’s ER does not adequately identify and mitigate the serious risk to the public and riparian land owners that might be swimming, boating or fishing within the downstream zone of influence.

1. What rationale did Xeneca use when it decided to exclude areas W1 and W2 from the Geomorphic Assessment?
2. Xeneca must provide a clear and traceable method of how they arrived at the conclusion that there would be “*no notable erosion concern*” on Wabagishik Lake.
3. Xeneca must commit to a Biological Monitoring Plan that includes erosion monitoring both downstream of the dam, as well as upstream – all the way to the base of the Lorne Falls GS. Please provide a clear and traceable method of how Xeneca was able to conclude that there would be no notable erosion concern on Wabagishik Lake?
4. Xeneca must have a plan in place to deal with this contaminated sediment, and to prevent it from being dispersed into the water column.
5. Erosion, shoreline stability and scour concerns have not been adequately addressed in the ER. Xeneca must do an in-the-field erosion study to determine the potential for erosion and/or disturbing the heavily contaminated sediment located in the bay area.

6. Littoral Zone of Wabagishik Lake

In the ER Xeneca reports, “*a very conservative estimate of total littoral area can be generated by assuming a 5m average width for the littoral zone and multiplying this by the shoreline perimeter of the lake as follows: Shoreline perimeter = 25 km (25,000 m) Average Littoral zone width = 5m Therefore the littoral zone area is estimated at 125,000 m² or 12.5ha. Within this estimated 12.5ha of littoral zone, any impacts on biota in the littoral zone habitat are predicted to be minimal and not significant. There will be an increase in the frequency of water level fluctuation, relative to a natural system. As noted above, a 10cm fluctuation in water level is less than what might be caused by wave action or seiche effect. As a result, the plants and other biota living in the littoral zone can be expected to withstand the 10cm daily fluctuation in water levels.*”¹⁸

Xeneca also reports, “*Plants and other biota living within the riparian zone can generally be expected to withstand the 10cm daily fluctuation in water levels based on their adaptation to the dynamic riparian environment.*”¹⁹

¹⁷ Annex 1, Part 2 – Geomorphic Assessment – P-11 & 12

¹⁸ Wabagishik Rapids GS ER, 6.4.2 Aquatic Impacts – Upstream Operational P-109 of 174

¹⁹ Annex III, Part 1, Natural Environment Characterization & Impact Assessment Report – P-161 of 174

1. What formula did Xeneca use to arrive at an average littoral zone width of 5m?
2. How did Xeneca arrive at the conclusion that the biota living in the littoral zone could be expected to withstand a 10cm daily fluctuation in water levels?
3. What studies were done to determine what the dynamic riparian environment would consist of?
4. How did Xeneca arrive at the conclusion that impacts on biota in the littoral zone habitat would be minimal and not significant?
5. What studies were completed to make these determinations?
6. Did Xeneca add the additional 10cm wind and wave seiche effect (as reported by the proponent) to the 10cm operating band when calculating the lake stage measurements and effects on littoral zone and biota?

7. Mercury in Fish Tissue

Ministry of Environment [Fish Consumption restrictions are already in place on Wabagishik Lake](#) and posted on-line. These restrictions are in place all the way out to the confluence of the Vermilion River with the Spanish River, and this was not mentioned anywhere in the ER or its study documents. Any additional increase in mercury in fish tissue could make fish totally unavailable for local residents and First Nation communities. The very fact that there are already fish consumption restrictions in place should have necessitated a proper fish tissue sampling study.

The ER reports that “*MOE (2012) recommended that reference sampling be conducted upstream of barriers to fish migration. There is no barrier to upstream fish migration at the proposed Wabagishik Rapids facility. Therefore, upstream reference sampling will not be conducted for the facility as fish can freely migrate from the project area, upstream, and ‘upstream references’ would not provide an accurate reference of naturally occurring mercury concentrations in fish.*”²⁰ If Wabagishik Lake were properly considered as the impoundment for this proposal, the upstream barrier to Wabagishik Lake is the Lorne Falls GS.

The ER also states, “*The Wabagishik Rapids hydroelectric facility will not impede fish movement through the project area so the study design to assess mercury concentrations in fish was based on a before/after approach with one site that will be compared between years.*”²¹ There is no fish passage included in this design, and the gross head of the facility is 6 meters. Therefore, the dam and power house would most definitely be a barrier that would impede fish movement through the project area.

“*HESL understands from Xeneca that the facility will not impound water in Wabagishik Lake*”.²² Wabagishik Lake would most definitely be used to impound water for the proposed facility, for without using the water resources of Wabagishik Lake the facility would have very little capacity to generate power. Wabagishik Lake is clearly part of the headpond and needs to be acknowledged and treated as such.

1. Considering the facts, what is Xeneca’s rationale for not doing proper upstream reference sampling of fish tissue, as directed by MOE?
2. What is Xeneca’s rationale for not including Wabagishik Lake as part of the headpond, but instead terming it a “zone of influence”.

²⁰ Annex IV, Part 3 - Wabagishik Rapids, Surface Water Quality and Fish Sampling Guidance, Sec. 2, P-8 of 227

²¹ Wabagishik Rapids GS ER, P-207 - Potential Impacts related to Inundation (Mercury)

²² Annex IV, Part 3 - Wabagishik Rapids, Surface Water Quality and Fish Sampling Guidance, Sec. 2, P-7 of 227

3. How would the decision for fish tissue sampling have been different if Wabagishik Lake had been considered to be part of the headpond?

6. Modified Run-of-River

Xeneca is calling this proposal a modified run-of-river when it is actually a peaking operation. According to Table 3²³ this operation will be in peaking mode 78% of the time, or for 285 days of the year – which seems very optimistic. According to this Table, it also appears this operation would be shut down for 7 days of the year – which also seems very optimistic.

Xeneca must refer to this operation as a peaking facility to accurately report to the public and First Nations.

7. Operating Strategy

The operating strategy filed with this ER sets out possible operating strategies, but is only in draft form, and as such cannot be seriously considered. The Installed Capacity (IC) of this proposed generating station is 3.4 MW, and Xeneca's prediction of actual power to be generated is 1.7 MW. This seems very optimistic when, depending on river flows, there are some periods when the generator will be shut down completely, and several winter and summer months where power would be generated at minimum turbine speed – all because of low flows. There needs to be a cost/benefit analysis done, taking into account the predictions of climate change, impacts on fisheries and the riverine ecosystem to ensure this waterpower project is environmentally, socially and economically sound and sustainable over the long-term.

Xeneca must provide an approved and final operating strategy for public review and comment.

8. Cumulative Effects

Xeneca reports that as a result of its operating restraints, which have not been finalized, "cumulative impacts downstream of the Domtar dam are anticipated to be minimal." And yet, *"Wabagishik Rapids GS operation (combined with flows from the Nairn Dam) may result in pulses that could have a potential impact on hydroelectricity generation at the Domtar Dam because excess flows may result in an increased need for Domtar to spill water"*, and *"may increase manpower requirements for operations"*.²⁴ We submit that there is no clear and traceable way to know how Xeneca came to this conclusion.

Xeneca must also include the effects of the three additional proposed hydroelectric facilities planned for upstream of the Wabagishik Rapids Site; the 9 City of Sudbury Wastewater Treatment Facilities releasing treated, undertreated and untreated effluent; the heavily contaminated sediment; as well as the planned and existing mines taking water and releasing effluent into the Vermilion River Watershed.

Cumulative effects refer to the accumulation of human impacts over time, from all sources – including heavily contaminated sediment. If enough impacts accumulate, this can push ecosystems or individual species past ecological "tipping points" from which they may not recover.

²³ Annex 1, Part 1 - Proposed Operating Plan & WMP Amendment, P-19 – Table 3

²⁴ Wabagishik Rapids GS ER, P-282

9. Blue Green Algae

The lower Vermilion River and several of its connecting lakes have had blue-green algae blooms reported for the last 3 years, and most recently Ella Lake had a reported blue-green algae bloom that lasted from November of 2012, right through the winter months until ice break-up in April. Ella Lake is part of the impoundment for Lorne Falls hydroelectric dam, which is immediately upstream of Wabagishik Lake. We are concerned that Wabagishik Lake will meet the same fate as Ella Lake, and for good reason.



November 2012



March 2013

There are numerous studies that associate impoundments with inducing blue-green

algae (cyanobacteria) blooms. *“The building of dams and regulation of rivers has created more habitats suitable for cyanobacteria. The general opinion now is that “cyanobacterial blooms” are increasing in frequency worldwide. Exposure to hepatotoxins (microcystins, nodularins and cylindrospermopsins) has been reported to induce several health disorders depending on the route of exposure, the quantities absorbed and the toxicity of the cyanobacterial strain. Harmfulness ranges from minor disorders (headaches, nausea, diarrheas) to lethal deterioration of hepatic functions. It is also thought that chronic exposure to low concentrations can promote liver cancer. In 1996, 60 patients died in Brazil after haemodialysis with contaminated water (Pouria et al. 1998). WHO considers that freshwater contamination by cyanobacteria, and the toxins they synthesize, constitutes a major worldwide threat that can limit utilization of water resources (Chorus & Bartram 1999).”*²⁵

Xeneca reports, *“Following development, the water temperature in the impoundments may warm from increased river surface area, which may result in lower dissolved oxygen concentrations as the water’s capacity to retain oxygen decreases. The magnitude of dissolved oxygen decrease will depend on how much the water warms and other factors such as changes in water turbulent flow, which recharges water with oxygen, changes in aquatic plant growth and oxygen demand from the conversion of inundated soil to sediment.”*²⁶ This sounds like the perfect recipe for more blue-green algae.

As a matter of fact, Hutchinson made a report on a recurring blue-green algae problem in Callander Bay, and explains how *“this lack of oxygen (anoxia) in bottom waters has important implications for phosphorus cycling in Callander Bay. If periods of stratification are maintained for a sufficiently long period of time, there is a risk of complete oxygen depletion near the sediments. Phosphorus is normally bound to sediments under oxygenated conditions, but can be released into the water column under anoxic conditions. This process is called internal phosphorus loading. In lakes that maintain thermal stratification over the summer and only mix in late fall, phosphorus released by internal loading is confined to the deep cool dense layer of water (the hypolimnion) and remains mostly unavailable for uptake by algae until mixing of the water column in late fall. Callander Bay, however, mixes frequently over the summer months and so phosphorus in bottom waters from internal loading could be introduced into the surface waters at the height of the growing season, promoting aquatic plant growth.”*²⁷

Increased retention time in the headpond and Wabagishik Lake, and the potential for internal loading from the sediments has not been adequately addressed in the Environmental Report. The 1986 MOE sediment study reports heavily contaminated sediments that are several times over the SEL for heavy metals, and nutrient rich, so there is a strong potential for internal loading when flows are reduced and oxygen levels are depleted. Xeneca’s ER has not addressed the issue of contaminated sediments, even though they were made aware of the MOE study months ago.

Blue-green algae can be lethal, and it is unacceptable that local residents, wildlife and fauna would be placed at risk for the sake of “green energy”. Xeneca must undertake a comprehensive sediment study to provide a quantitative analysis and a projected post-construction estimate of increased potential for toxic blue-green algae.

11. Ice and Flooding

²⁵ [Cyanobacteria, cyanotoxins and potential health hazards in small tropical reservoirs](#)

²⁶ Wabagishik Rapids GS ER, P208 – Pre-and Post-construction monitoring of water quality and fish, P208

²⁷ North Bay-Mattawa Source Protection Area – Approved Updated Assessment Report, Hutchinson Environmental Sciences Ltd.

The ER reports Xeneca was “asked to provide details on the increase in water levels at the bridge as a result of the project and asked to specify how the bridge piers would be protected from ice and water”; and were asked to confirm “whether they would accept liability for any damage to the bridge as a result of the undertaking”.²⁸ However, there was no indication in the ER whether an MOU was signed or whether Xeneca agreed to accept liability.

It appears the extent of Xeneca’s safety and mitigation plan is summed up in a nutshell when the ER reports, “Extreme cold weather conditions may lead to a build-up of ice at the intake that could necessitate plant shut-down and an interruption to the delivery of electricity to the provincial supply grid. Such an interruption will affect project revenues until the ice is naturally or artificially cleared.”²⁹

Xeneca claims it would be “unlikely that the project would result in ice jam formations at the bridge as a result of the project”³⁰, but it is unclear how that conclusion was arrived at, how ice jams and flooding would be prevented, and what emergency mitigation measures would be undertaken to protect public safety.

Xeneca reports that the potential for spring ice damming and/or flooding on Wabagishik Lake is “high”, magnitude “low”, likelihood of effect “low”, and that the residual effect would be “not significant”.³¹ This is the perspective of a developer who does not live on Wabagishik Lake; however, the stakeholder who expressed concerns because of past ice-jams and flooding on Wabagishik Lake will not be reassured by the lack of planning in this ER.

Xeneca’s idea of a resolution: “Potential impacts can be mitigated by regular water level monitoring and proper operation of facility”³². This is not adequate and does not reassure the public.

The extent of Xeneca’s “Special Event Operation” plan is that during floods and safety emergencies the procedure will be to operate as normal for a “high flood operation”, and on the occasion of “extreme flood operation” it appears that the plan is to “evacuate the facility”. This is not a plan – Xeneca’s plan is to leave.

Ice jams at the outlet of Wabagishik Lake have happened in the past and have resulted in flooding and damage. Stakeholders must be assured that Xeneca has studied the entire possibility and scope of an ice jam, and that there is a strategy in place to prevent this from happening, and if it does there must be a plan of action to minimize and control any impacts or damage.

Xeneca must do a comprehensive study and report to indicate how they would handle ice jams during spring break-up.

Extreme rain events even throughout the winter months have become a normal occurrence, so in the event of flooding as a result of Xeneca’s operation there must be a legal and binding commitment to cover any losses or damage to riparian landowners.

²⁸ Wabagishik Rapids GS ER, Snowmobilers, P-116

²⁹ Wabagishik Rapids GS ER, 8.8.1 – Extreme Winter Conditions, P-241

³⁰ Wabagishik Rapids GS ER, Snowmobilers, P-116

³¹ Wabagishik Rapids GS ER, Table 35 - Residual Environmental Effects and Significance, P-252

³² Wabagishik Rapids GS ER, Table 33 – Potential Residual Effects, P-190

12. Dam Decommissioning

With climate change scientists predicting a future with the possibility of extreme drought conditions, there is a very good possibility that this hydro project may no longer be economically feasible. Ontario is littered with old and derelict dams that are no longer in use, along with access roads, and in the case of hydro dams, transmission lines and poles that must be monitored and maintained (at a cost, usually to the taxpayer), and ultimately removed for safety and/or ecological reasons. This all takes dollars that taxpayers should not have to pay. Developers reap the rewards for at least the 40 year life cycle of their contract, and a portion of these funds must be secured for dam decommissioning.

If the FIT contract were to be terminated, profits reduced, or costly repairs were needed due to damage caused by ice or flooding, or if climate change reduced the amount of water available for energy production, the payback from these small rivers could make this facility unprofitable. This could result in bankruptcy and/or abandonment. There is no commitment in this ER for setting provisions aside to decommission the facility and its infrastructure if events such as the foregoing should occur. Provisions for dam decommissioning are essential.

Xeneca must be required to secure funds up front for future dam decommissioning in the event this facility is no longer socially, environmentally or economically sustainable and needs to be removed.

13. Lake Sturgeon & Walleye

Xeneca has decided to compensate for the loss of the best spawning habitat available to the Walleye and Lake Sturgeon population, anywhere on the lower Vermilion-Spanish river system. Xeneca is planning to move the spawning area downstream of the dam to Graveyard Rapids, so without fish passage, Lake Sturgeon and Walleye could not migrate upstream into Wabagishik Lake because of a 6m gross head dam blocking their way.

While the Natural Environmental Characterization Report stated that it is unlikely for sturgeon to pass through the upper reaches of Wabagishik Rapids, it acknowledges that it is physically possible under the right conditions. Suitable spawning conditions do exist at Lorne Falls for Sturgeon, and MNR have said there are anecdotal reports of historic catches of Lake Sturgeon in Wabagishik Lake³³. This is contrary to Xeneca's response to First nations in the ER, "*further information from the district MNR staff and anecdotal data collected during the study period indicate that there are no Lake Sturgeon in the area*"³⁴. Xeneca has also not provided the MNR data indicating that there are no Lake Sturgeon in the area.

In fact it is not revealed in the ER, that none of Xeneca's efforts resulted in finding Lake Sturgeon - it took an independent consultant hired by Vale to discover Lake Sturgeon in the lower reaches of the Vermilion. This indicates that further studies need to be undertaken before Lake Sturgeon can be ruled out in Wabagishik Lake, especially when the ER reports, "*it can be concluded that it is technically feasible for lake sturgeon to*

³³ Appendix C, Part 2 – P-58 – MNR Comments on the Draft ER – 1413 - EC

³⁴ Wabagishik Rapids GS ER, Table: 33 , P-170

pass upstream through Wabagishik Rapids during the 5th percentile and median flow scenarios.”³⁵

The ER’s conclusion contradicts its own Natural Environment Characterization and Impact Assessment Report’s statement that *“there are no confirmed records of Lake sturgeon in Wabagishik Lake, although there is potential that lake sturgeon can ascend Wabagishik Rapids. The dam will restrict the lake sturgeon population to its current range, which may or may not represent a change from existing conditions”³⁶*.

There is not enough information currently available to know where the Walleye and Lake Sturgeon even come from – upstream or downstream, so the loss of spawning habit has not been adequately assessed, nor have the impacts to the recreational fishery and First Nation subsistence fishery which could be seriously impacted by this habitat loss and blocking of fish migration.

There is not enough information in the ER regarding the “compensation plan” (location, area, habitat characteristics, and feasibility) to adequately comment; however, this plan should have been in place before the ER was submitted for comment. We question how effective any compensation plan can be below a peaking operation with the daily extreme variation in flow, the wetting and drying of channel substrate and habitat, and the resulting change in the benthic community. The public must be consulted on how this valued population of Walleye and Lake Sturgeon will be protected and provided for.

Lake Sturgeon are listed as an endangered species. Therefore, to confirm definitively whether they are in Wabagishik Lake it is recommended an extensive telemetry study should be carried out over multiple years.

This ER informs that no fish passage will be provided. We submit that Xeneca must provide upstream and downstream fish passage to enable Walleye and Lake Sturgeon to bypass the dam into Wabagishik Lake.

Xeneca must undertake further studies to ensure this sensitive population of Lake Sturgeon is protected and conserved.

If this project goes ahead, it could have a very negative impact on water quality, so any Monitoring Plan for Lake Sturgeon should take place over a minimum of 25 years in order to properly assess recruitment, abundance, and any changes.

14. Fish Friendly Turbines and Fish Passage

No fish passage or fish friendly turbines have been included in this project design. Section 22(2) of the Fisheries Act states, *“The design of the dam and/or other barriers must allow for the safe passage of both ascending and descending migratory fish.”³⁷* Also, the Class EA for Waterpower recommends that waterpower structures *“incorporate fish passage structures into project design where appropriate.”³⁸* The ER acknowledges that not providing upstream fish passage *“carries some risk for fisheries management”*,

³⁵ Annex III – Part 1, P-142

³⁶ Annex III – Part 1, Natural Environment Characterization and Impact Assessment Report - P-158

³⁷ Class EA for Waterpower, Table 1 Key Legislative Considerations for a Waterpower Project, P-14

³⁸ Class EA for Waterpower, Appendix B: Examples of Typical Mitigation, 1.6 FISH AND WILDLIFE, P-91

*but plans to finalize fish passage matters during the permit process with OMNR and DFO*³⁹.

ORA requests that Xeneca be required to adhere to the recommendations of the Class EA for Waterpower, and incorporate fish passage into the project design to allow fish to migrate freely upstream and downstream.

ORA requests fish friendly turbines to reduce fish mortality.

15. Public Safety

This proposal poses many risks to public health and safety. The risk of increased methylmercury production and resulting restrictions or loss of edible fish, increased risk of blue-green algae, and the unaddressed risk of flooding have already been addressed separately.

There is also a risk to the potential safety of people swimming, boating and fishing below this peaking dam. Unless access is restricted then peaking will present a risk to public safety. Xeneca has not presented a plan of how this risk has been assessed, and how the public will be protected. This must be done before a Statement of Completion is filed.

16. Public Consultation

There are many aspects of this ER that are insufficient, incomplete or undecided, and therefore the public must have an opportunity to be consulted and offer input before a Statement of Completion can be issued. The approach taken by the proponent is we will address it in the permitting stage, but we the public must have an opportunity to have our input. Proper erosion studies, or any other kind of study, were not even attempted on Wabagishik Lake, which Xeneca has termed the upstream zone of influence. Also, the critical operating parameters are still in draft form, and consequently mitigation measures cannot be properly addressed.

17. Site Release

Xeneca states in the ER that they have been engaged in the aboriginal consultation process as a component of the Crown Land Site Release Process in parallel with the Class EA process and where possible completed in parallel. However "*a separate report updating MNR on the status of the consultation process will be completed independently of this Class EA*"⁴⁰. However, in another ER for a proposal on the Serpent River, there was evidence that MNR and MOE representatives both made clear recommendations in writing to Xeneca, recommending that they wait until the Site Release process was completed before formally commencing with the Waterpower Class EA process. MNR and MOE staff made a valiant attempt to follow their policy and procedure, and their legal obligations to the public, by protesting Xeneca commencing through the EA process, and attempted to protect the environment and natural resources. However, Xeneca pressed on in spite of their warnings.

³⁹ Annex III, Part 1, P-164

⁴⁰ Wabagishik Rapids GS ER – 6.5.3 – P-126

It is noted that in an ER on another of their proposals, pressure tactics were applied on by Xeneca in their letter dated 27 May 2011, from P. Gillette to Richard Linley, MNR, where two MNR staff were reported, "*This is most obvious at the Serpent River sites, but Fishery Management Plans seem to be issued in a negative manner at all our FIT sites. The two key individuals raising these issues are and*"⁴¹ (names are removed for privacy reasons).

It is very disturbing to see MOE and MNR staff make numerous recommendations on the Draft ER that were totally ignored by Xeneca. This shows contempt for the process and best practices advice of our regulators.

Xeneca has not yet been awarded Site Release at Wabagishik Rapids, and as previously communicated to Xeneca, "any environmental assessment work undertaken before Site Release is completely at the proponent's risk".⁴²

Agency staff must be left to do their jobs, and not be pressured by upper management or Xeneca to do anything other than act in the best interests of the natural environment and riverine ecosystem.

Xeneca's timelines and interests must not take precedence over policy, procedure, provincial regulations, the public, and most of all the health and well-being of the community, the environment, and the riverine ecosystem.

18. **Aboriginal Consultation:**

The Wabagishik ER contains the following statements, "*In November 2012, Xeneca, with the assistance of several Aboriginal Communities convened an EA Peer Review Group which would assist the various communities in reviewing aspects of the Project development. In addition to reviewing the Environmental Assessment, this group would also take on review of business to business (B2B) items. The B2B discussion between Xeneca and Aboriginal Communities are not part of the EA process and are for the most part confidential, therefore they will not be discussed further in this document. For the purposes of the Class EA Sagamok Anishnawbek was appointed the lead for the Environmental Assessment review. The members of the EA Peer Review group agreed that within reason, and in some cases with Elder approval, what the lead group (Sagamok) concluded from their review, they would also generally endorse.*" And that, "*Whitefish Lake First Nation (Atikameksheng Anishnawbek) was present at the November 5, 2012 coordination meeting for the EA Peer review group and have agreed with the idea in principle; however, they have remained independent from the group to date.*"⁴³

There was no information contained anywhere in the Environmental Report (ER) that would support Xeneca's claim that the members of the EA Peer Review Group or Sagamok First Nation agreed to endorse this project, or that Whitefish Lake First Nation or any other First Nation community agreed with the idea in principle, and there is also no explanation or description of what that "*idea*" is.

Any B2B relationship, incentives, or funding/payment/partnership that would include funding from any government source is relevant to this ER and must be transparent, made available to the public for our review, and be part of the Wabagishik Rapids GS

⁴¹ Four Slide Falls GS ER – Serpent River - Appendix C, P-91, 2011, May 27 – Patrick Gillette to Richard Linley, MNR

⁴² Four Slide Falls GS ER – Serpent River - Appendix C-P-76 to 81, 2011, May 18 – MNR memo to Xeneca

⁴³ Wabagishik Rapids GS – ER, 6.6.15 First Nations EA Peer Review Group, P-157

Environmental Report. Any B2B arrangement must be open for public scrutiny so we know how much our fresh water and fishery is worth to all parties involved, what portion of funding taxpayers will be contributing, and what has transpired in the process of agreeing to any arrangement or accommodation.

Ontario Rivers Alliance and Vermilion River Stewardship are requesting all correspondence and documentation relating to the Peer Review Group and the B2B negotiations, to be made available immediately for our review. The public must have a clear, traceable and transparent accounting of how Xeneca has arrived at the conclusion that the Peer Review Group would generally endorse or agree with the idea in principle.

A 19 September 2013 letter from Sagamok Anishnawbek⁴⁴ was included in the Final ER. However, it did not reflect an endorsement of the project, but did report some of their asks had been met, and stated a desire to receive and review the Final ER and to continue discussions and engagement.

As a matter of fact, in spite of MOE's request to include all aboriginal correspondence and documentation in the final ER⁴⁵, there was very little correspondence from First Nations included, except those that shone a favourable light on the project. In fact, many letters which appeared in the Draft ER did not make it into the Final ER. This is not congruent with the transparent requirements of the Class EA process.

1. What is the "idea" that the Peer Review Group have agreed upon?
2. Please provide all correspondence and documentation relating to the Peer Review Group and the B2B negotiations.
3. Please include the MOU document signed between Sagamok Anishnawbek and Xeneca.
4. Please include all First Nation correspondence pertaining to this ER and Notice of Completion.

19. Vermilion Stakeholders' Advisory Committee (VSAC)

It is also interesting to note that there is no information contained in the ER pertaining to the VSAC. This is a committee that was established by Xeneca to advise and deliberate on the pros and cons of all four of the Vermilion River hydroelectric proposals, and certainly would have been referred to if there were favourable reports regarding the Wabagishik Rapids proposal.

1. Please provide all minutes, documentation and correspondence relating to the VSAC, along with any partnerships or funding applications, agreements, or arrangements made with any and all members of the VSAC Committee.

20. Trust and Confidence

Over the almost three years since first becoming aware of this Proposal in November of 2011, there has been a continual undermining of trust and confidence in Xeneca and that this "modified run-of-river" proposal would be good for the Vermilion River Watershed, its local communities, or the citizens of Ontario. What follows is an outline of

⁴⁴ Appendix E – P-252

⁴⁵ Appendix C – Part 3, P-68

the many reasons why trust and confidence have been broken.

1. Vermilion River Stewardship (VRS) registered as a stakeholder on 8 December 2010, and asked several questions of Xeneca.⁴⁶ There was no response until France Gelinas, NDP MPP intervened and reminded Xeneca of their obligations to consult. Xeneca then responded on January 15th, 2011, offering to share information when available.
2. VRS requested the Powerpoint presentation Xeneca made to City Council in March of 2010, and Mark Holmes responded by emailing only part of the presentation because he said the file was too large to email. When I informed him that I could receive a large file and was requesting the entire file, the full presentation was sent, and the only page that had been missing was the corporate and financial structure of the company which revealed this proposal was funded by OP Trust – our government pension fund.
3. After the first PIC I attended for the proposed Wabagishik Rapids GS, I received a call from a North Bay OPP Special Operations police officer who informed me he was present at the PIC and watched me the entire night, looking for an opportunity to talk to me, but couldn't because I was constantly surrounded by people. He informed me he was accompanied by an Espanola Police Department officer. I asked him if Xeneca requested he attend and he told me "no". A few days later I received an anonymous email with a picture attached of an email from the OPP to Mark Holmes asking whether their presence would be required at the PIC the next night. (This document is available upon request.)
4. VRS made a formal request in writing to Xeneca for documentation pertaining to the Vermilion River proposals on 8 February 2011⁴⁷, and was informed by Xeneca that *"all the information that you have requested regarding the PICs will be available in the Waterpower Class EA when it is finalized."*⁴⁸
5. VRS sent an email to Xeneca restating the request contained in the 8 February letter, and admonishing Xeneca for not notifying the VRS of the 22 March Public Information Centre (PIC), and of continuing to erode confidence and trust in Xeneca and in the EA process.⁴⁹
6. VRS filed a Freedom of Information Application (FIPPA) with MNR to gain access to several documents in April of 2011. In August VRS was granted permission. But before we could receive the documents Xeneca appealed the decision. At which time VRS decided to abandon the application because the documents had become available through the Canadian Environmental Assessment Act when it was triggered.
7. Mark Holmes negotiated with me for several months to talk me into joining the Vermilion Stakeholder Advisory Committee (VSAC). In a 4 March 2011 email to me he offered, *"further to your question on the "power" of the committee, if the committee brings forward an issue that is a show stopper, then it will have done its job and the project will either be abandoned or modified to avoid the problem."*

⁴⁶ Appendix D – Part 2 - P119

⁴⁷ Appendix D – Part 2, P-128

⁴⁸ Appendix D – Part 2, P-140

⁴⁹ Appendix D – Part 2, P-148

He asked me to recommend some local representatives to be part of VSAC, so one of the people I recommended was Charles Ramcharan, a local Laurentian University professor. I soon regretted this recommendation, because at the very first meeting "*Charles discussed research ideas with Graeme and potential research projects with Xeneca. Charles is also asking Xeneca for sponsorship for a seminar series and scholarships for a new Environmental Science Program.*" (VSAC Minutes not made available in the ER) Ramcharan informed me by telephone he was vying for as much as \$400,000 in funding from Xeneca. I objected to Xeneca funding any study or course for him on the grounds that it was a conflict of interest because Ramcharan would stand to benefit from the project going forward. VRS subsequently wrote a letter to Xeneca, dated 10 July 2012 (not included in the ER) informing that a VRS Board Motion had been passed that if meeting protocols were not followed and if Charles Ramcharan did not resign from the VSAC that I would resign. Erin Calder responded on behalf of VSAC on 18 July 2012 (not included in the ER) refusing VRS's requests. On 25 July 2012 (not included in the ER) VRS wrote to Xeneca and Erin Calder submitting my resignation from the VSAC. These documents are available by clicking [here](#).

8. Uwe Roeper on several occasions promised to provide me with unsecured documents in the ER that could be searched, copied, highlighted, etc. However, as per my 4 October 2013 letter to Xeneca, this was not done – all but one document had been scanned which made it impossible to search, copy, highlight, etc. Xeneca did provide unsecured documents, but not until the 11th of October – 11 days after commencement of the comment period, and valuable time was lost.
9. In a 16 November 2012 meeting with Uwe Roeper and Mark Holmes, the Meeting Notes prepared by Xeneca noted, "*MH asked if LH had received Xeneca's September 2012 letter responding to questions on siltation and sediment concerns. Responding affirmatively, LH said it was a thorough answer. LH also noted that recent correspondence sent to Al Hepburn regarding concerns over the Big Eddy Project in Pembroke had been received. She also noted Mr. Hepburn had complemented the thoroughness of the response*"⁵⁰ These comments that were purported to have come from me did not. In fact I remember referring to Al Hepburn's letter as thorough, and I never would have referred to any of Xeneca's reports as being thorough.

There have been many other occurrences that have served to continue to undermine our trust and confidence in Xeneca as a company, and in the fate of the riverine ecosystem and public health and safety if they are allowed to build this hydroelectric facility. I would also refer you to our concerns set out in this letter – where this sloppy, negligent and inconsistent ER has done nothing but continue to erode all confidence and trust in Xeneca and its proposal.

21. Water Management Plan - Domtar & Vale

The ER points out that the downstream zone of influence only extends to the confluence of the Vermilion River with the Spanish River, when concerns have been expressed by the regulators and Domtar, that Xeneca's operation could have serious negative impacts on Domtar's ability to operate their hydroelectric facility and to dilute their effluent, and

⁵⁰ Wabagishik Rapids GS ER – Appendix D, Part 2, P-232 – 16 November 2012 Meeting Notes written by Xeneca.

this could have serious repercussions further downstream. There appears to be no Memorandum of Understanding (MOU) between Xeneca and Domtar at this time. This should have been completed before the ER was issued for comment. Xeneca must ensure it will not have a negative impact on other established operators.

It also appears that the residents living in the Bay area directly below the dam could be seriously at risk from the rapid fluctuations in water levels and flow velocity when the turbines are turned on and flows instantly increase from 5, 6.5 or 8 cms to the minimum turbine speed of 20 cms, increasing flows to 25, 26.5 or 28 cms. This is not adequately addressed in the ER, and there appears to be no MOU in place to protect this family and their interests.

Again, it appears this operation could seriously impact on Vale's ability to operate its Lorne Falls hydroelectric facility, and yet no MOU is in place to secure its interests or to finalize Xeneca's operating plan.

This ER and Notice of Completion have been filed prematurely.

On behalf of VRS and ORA, I have met with Xeneca representatives on at least three occasions, other than PICS, with regard to the Vermilion River proposals, and sent additional letters to Xeneca setting out our many concerns and requesting answers as follows:

- 2011, 26 October – Wabagishik PIC Questions – 20 October
- 2012, August 3 – Wabagishik PIC Questions – 25 July
- 2012, August 7 – Wabagishik PIC Comments – 25 July
- 2012, August 9 – Requesting Xeneca do Silt Sampling

Please respond by 4:00 pm on Thursday, 31 October 2013.

Yours truly,



Linda Heron
Chair, Ontario Rivers Alliance
Chair, Vermilion River Stewardship

Cc: Honourable Jim Bradley, Minister of Environment - Minister.MOE@Ontario.ca
Ellen Cramm, Environmental Planner/EA Coordinator - Ellen.Cramm@Ontario.ca
Chief Steven Miller - Atikameksheng Anishnawbek – Chief@WLFN.com
Chief Shining Turtle – Whitefish River First Nation – Chief@WhitefishRiver.ca
Art Jacko, Economic Development Officer, UCCMM – Ajacko@UCCM.ca
Erik Szkokan-Emilson - ErikJohnline@riseup.net