

ORA Concern	Xeneca Overview Response
Zone of Influence	<p>The zone of influence (ZOI) was assessed in strict accordance with the requirements of the Class EA process and regulatory guidance provide by MNR on June 6, 2013. A detailed discussion of the definition of ZOI and the determination of the extent of the ZOI is given in the ER documentation (in Section 1.2.1, as well as Uwe Roeper's September 6, 2013 rationale document that is included in Appendix A.) Extensive operating restrictions have been incorporated into the proposed Operating Plan to avoid impacts beyond the ZOI. For the upstream ZOI, the proposed water level changes related to daily operation have been restricted to +/- 5 centimeters (i.e. less than normal wave height.) The upstream extent is physically defined as the extent of Wabagishik Lake. It has been confirmed with hydraulic analysis that there is no effect upstream of the lake. For the downstream ZOI, the Operating Plan strictly limits the range of water level fluctuations that are permitted. Extensive modeling and hydraulic analysis has been done to confirm that these operating restrictions are technically enforceable. For the river downstream of the ZOI, a statistical analysis was carried out in accordance with a methodology provided by MNR to determine if any potential residual fluctuation would be different than existing conditions. The analysis showed that there would be no significant difference in river fluctuations between the pre-project and post-project conditions. Based on the extensive work done, we are satisfied that the ZOI was defined in strict accordance with regulatory requirements and the Class EA process.</p>
Fish Spawning Area	<p>The impact on fish spawning areas was one of the most thoroughly assessed aspects of the Class EA process. As a first step, and informed by aquatic studies, stakeholder input and First Nations knowledge, the initial design of the facility was revised to locate the dam 255 meters further upstream, so as to minimize impacts on local spawning beds (i.e. it ensures that over 14,000 m² of local downstream spawning beds remain unaffected.) Further, the ER commits to compensate residual impacts that remain despite dam relocation. The final ER acknowledges a 1,000m² area of habitat immediately downstream of the proposed dam that will be affected by the daily fluctuations in water levels (although not during spawning), 6,840m² of habitat upstream of the proposed dam that will be affected by inundation, and 500m² of habitat that will be affected by the footprint of the proposed dam. The final ER commits to mitigate this impact through fish habitat compensation that will be located downstream of the proposed dam, as outlined in the preliminary fish habitat compensation plan included with the ER. The design of the habitat compensation will be guided by detailed 2-dimensional modeling and regulatory oversight. The 300m section of Wabagishik Rapids downstream of the proposed dam has been identified as the first-priority location for compensation fish habitat (Annex III.) This prioritization was determined in conjunction with MNR District and DFO biologists. As part of this prioritization, the second priority is the location where the faster water velocities extend into the bay below Wabagishik Rapids, and the third priority is Graveyard Rapids further downstream on the Vermilion River. Furthermore, Xeneca has committed to run-of-river operation during spawning to ensure that no flow alteration occurs due to operations during this critical habitat period (detailed in the Operating Plan, Annex I.) Further operating restrictions have been committed to during egg incubation that follows spawning. The biological effects study clearly indicates that, with compensation and operation constraints, impact to the fishery will be minimal. A post-construction monitoring and adaptive management strategy are also included in Annex III of the final ER to ensure that any unforeseen effects can be identified and strategies are in place to mitigate or avoid negative effects on the fishery. As well, Xeneca has entered into a partnership agreement with community groups to build a community fish hatchery and education centre at the site (Section 7.2.) In conjunction with robust monitoring programs, the hatchery can be used to augment fish stocks within the river system.</p>

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Consultation	<p>Extensive stakeholder and Aboriginal consultation has been ongoing since 2010. The duration and extent of the consultation effort has greatly exceeded the requirements under the Class EA process and is documented in Appendix D. Three Public Information Centres (PICs) have been advertised in local media (Espanola Mid-North Monitor and Sudbury Star), on the Xeneca website and through email notification. Notifications for all PICs were also provided to Aboriginal Communities. In addition, invitations were extended to Aboriginal Communities to hold PICs in the Aboriginal Communities. Specific meetings with individuals, representatives from Aboriginal Communities and stakeholder interest groups have been organized. Website postings, emails, phone calls and print and radio media have also been used as outreach to interested stakeholders, Aboriginal Communities and community bodies, such as the City of Greater Sudbury, Township of Nairn, Township of Spanish Sables, Town of Espanola and Township of Foster Truman. Numerous requests for one-on-one meetings/presentations have been made, and have all been met. Throughout the past four years, Xeneca has encouraged questions, engagement and comments. In addition, a Memorandum of Understanding has been signed with the Sagamok Anishnawbek Community. Aboriginal Community representatives have participated in archeology studies. On request of Aboriginal Communities a traditional ceremony was held with Community members and Elders at the project site. Also, an equity partnership offer has been put forward to Aboriginal Communities for consideration. Lastly, the ER was released as Draft ER in 2012 for all interested parties to review and comment on before the release of the Final ER. A group of local Aboriginal Communities retained a qualified third-party consulting firm to review and comment on the Draft ER. Outcomes of this special consultation effort have been incorporated into the Final ER in 2013. No further comments were received from Aboriginal Communities after the final ER.</p>
Existing Facilities	<p>Extensive consultation has occurred with private riparian landowners, business/commercial interests as well as recreational users engaged in activities within the ZOI (detailed in Appendix D of the final ER.) Two commercial facilities are potentially affected: the Lorne Falls generating station at the upstream end of Wabagishik Lake and the Domtar Dam facility downstream of the proposed project. Extensive consultation has occurred with the owners of both facilities and bilateral negotiation has occurred on avoidance of potential negative impacts and indemnification against any unexpected effects. Xeneca has committed to agencies to make best efforts to seek a signed agreement prior to issuance of permits, or, alternatively, to take self-imposed additional operating constraints as outlined in the Operating Plan. To date, Vale has indicated agreement with letter of intent. Domtar has retained advice from an independent consultant. The consultant has completed a review of the impact information. Xeneca has accepted the results of the review. A Memorandum of Understanding is in draft with Domtar and being negotiated. The memorandum is consistent with the Operating Plan presented in the final ER.</p>
Power & Economics	<p>The expected energy production and economics has been correctly presented in the Class EA process and in the public consultation process. As correctly described in the Operating Plan, there are times when the facility operates at less than full capacity of 3.4 MW and less than maximum powerhouse flow rate of 64 m³/s. This variability in output relates to the natural variability in water flow throughout the year. This aspect was carefully considered in determining the viability of the proposed project and is an inherent aspect of every waterpower facility in Ontario. Nonetheless, provincial policy encourages the production of electricity from clean and renewable waterpower. Small waterpower projects such as the Wabagishik GS are identified under the province's Long Term Energy Plan and by the Independent Electricity System Operator (IESO) as highly desirable forms of generation. Small waterpower generally has a small ecological footprint, low life-time costs and is widely supported by the people of Ontario.</p>
Project Guarantee	<p>The Class EA process is a formal regulatory process that binds the proponent to the commitments made under the process. In addition, regulatory agencies typically incorporate many of the commitments made in the Class EA process as mandatory conditions in the subsequent permits and approvals process. In this manner, project proponents are firmly tied to the commitments made. With respect to authorship, all documents in the final ER identify either the corporation or the professional that issued the document. It is our understanding that some consulting firms do, and other do not, identify the individuals who worked on the report. In either case, qualified consulting firms and professions with directly applicable experience were used for each aspect of the environmental assessment work. This approach is established and accepted practice in the environmental assessment process.</p>

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Disturbance of Contaminated Sediment	<p>Disturbance of sediment related to the construction and operation of the proposed project was extensively considered in the Class EA process. The dam location was moved from its originally proposed location to a location 255 meters upstream. This relocation was made, in part, to move the dam site construction to a location where substrate consists of mainly bedrock, rather than sediment. This effort helps to ensure that the sediment disturbed during construction is minimal. Disturbance of sediment related to operation of the project was assessed by considering the potential for fluvial erosion. The Parish geomorphology report (Annex 1 of the ER) notes that the project footprint is located in a very stable area, consisting mainly of bedrock and coarse cobble and boulders. As such, the project operation is not expected to significantly disturb sediments. In addition, the Operating Plan (Annex I) limits the maximum rate of flow from powerhouse operation to (64 m³/s). This rate of flow is below the "channel forming flow rates" typically associated with fluvial erosion. Channel forming flows occur naturally during spring run-off when rates of flow are naturally high, causing natural erosion and re-deposition of sediments. For comparison, the two-year return period spring flood flow is 268 (m³/s). As a result of these studies, it can be concluded that sediment disturbance related to construction and operation will be minimal. The final ER commits to a long-term water quality monitoring program to validate the study predictions.</p>
Release of Heavy Metals	<p>The wetlands in question relate to two small creek tributaries that enter the river several hundred meters downstream of the proposed dam site. The two small wetland areas were specifically studied in the environmental baseline study efforts (Annex III.) The Operating Plan (Annex I of ER) strictly limits the daily water level fluctuations from facility operations to +/- 15 centimeters for this area. The average daily water level in this area will remain unchanged, due to a commitment to release all upstream flow every day. The combination of limiting the daily water level fluctuations, combined with maintaining the average water level within existing conditions will ensure that no significant wetting and drying occurs in these wetland areas. For comparison, the annual seasonal range of water level fluctuations in this area exceeds 150 centimeters under existing conditions. As result, these sediments have been exposed to many years of wetting and drying under natural conditions. A robust long-term water quality monitoring program is in place to validate the study results.</p>
Wabagishik Lake	<p>Significant effort was made to address all potential impacts that could be reasonably associated with the proposed project.</p> <p>Please refer to the Operating Plan (Annex I), which clearly outlines how the facility will be operated. In the ER, Wabagishik Lake was determined to fall within the upstream "Zone of Influence" as it is expected that lake level fluctuations of up to +/- 5 centimeters can occur due to daily operation. This aspect is considered in significant detail in the ER and the potential environmental effects were carefully assessed in the ER. However, the lake is not formally considered part of the headpond as no new inundation is proposed for the lake bed. The proposed operation will follow the natural lake level throughout the year, subject only to the limited daily operations effect of +/- 5 centimeters.</p> <p>Extensive study of the lake was carried out as outlined in the ER, including geomorphology, hydrology, water quality, aquatic habitat and other studies. Terrestrial studies, such as bird and reptile, were not carried out around the lake since no change to the natural seasonal lake level conditions is proposed and not terrestrial impacts around the shoreline were derived.</p> <p>Shoreline erosion was considered as part of the ER. To address concerns on erosion (and other matters) raised during the public consultation process, the formal commitment was made to limit the impact on lake levels as described (i.e. to follow natural seasonal levels and limit daily operational impacts to +/- 5 centimeters). It was concluded that +/- 5 centimeters of daily variation is less than the average wave fluctuation height and it was determined that such fluctuations would not have an erosional impact on the shoreline.</p>

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Hutchinson Environmental Studies	<p>The consultant Hutchinson was responsible for planning the water quality program for the zone of influence (ZOI.) In the first sampling round in 2010, it was not clear that the lake, although located upstream of the proposed Project, would be hydraulically affected. In 2011, the proponent, with help from Hutchinson and in collaboration with MOE developed an expanded water quality monitoring program to address, in part, stakeholder questions raised on water quality. For the 2012 and 2013 baseline studies, the expanded monitoring plan and the expanded ZOI was known. However, it was also determined that there would be very limited impact on the lake. The Operating Plan (Annex I of ER) outlines strict operating restrictions to minimize impacts on lake levels upstream. The operating commitment is to follow natural seasonal levels and limit daily operating impacts to +/- 5 centimeters. It was concluded that +/- 5 centimeters of daily variation is less than the average wave height and that no effect on water quality would occur in the lake with these strict operating restrictions in place. Nonetheless, the lake has been included in the baseline study program for water quality and in the long term Monitoring Plan (see Annex III in ER) to ensure that these predictions are accurate. A number of other baseline habitat assessments were made of the lake.</p>
Erosion/Sedimentation	<p>A geomorphic study including erosion potential has been completed and is included in the ER. The Parish geomorphology study in Annex I of the final ER notes that the project footprint is located in a very stable area, consisting mainly of bedrock and coarse cobble and boulders. As such, the physical structure, its construction and operation are not expected to release trapped sediments as there are virtually none at the site. Nor are sediments within Wabagishik Lake or downstream of the site expected to be significantly disturbed by the facility as they are largely inert except under very significant channel forming flow conditions that may occur naturally under spring flood or extreme weather events.</p> <p>The two-year return period flood for Wabagishik Rapids project is 268 (m³/s), whereas the maximum flow fluctuation due to operation of the GS will be about 44 (m³/s) -- significantly lower than the annual flood flows in the river. Simply put, the operation of Wabagishik GS will not create the channel-forming flows that could disturb contaminated sediments that have been trapped for decades within the lake or river system.</p> <p>The Construction Management Plan in Annex II of the ER outlines plans to minimize or avoid sedimentation issues during construction. The operating parameters of the project (in Operating Plan, Annex I) further support Xeneca's assertions.</p> <p>Given the aforementioned points, the need to test sediments for contamination is not required for this project, however, samples taken during geophysical and geotechnical studies will be analyzed and Xeneca would be pleased to share those results with any interested stakeholders.</p>
Biological Monitoring Plan	<p>The technical studies in the EA (geomorphology study and hydraulic modeling) concluded that the proposed operation will not disturb sediment upstream in Wabagishik Lake or downstream. To confirm these predictions, long term erosion monitoring was included in the Monitoring Plan (Annex III in the ER). Monitoring of erosion at Lorne Falls, located at the far upstream end of Wabagishik Lake (i.e. 10 kilometers upstream) was not included because it was considered completely impossible for the proposed project operation to cause erosion that far upstream. It should be noted that strict operating restrictions have been committed to in Operating Plan (in Annex I of ER) in order to minimize impacts on Wabagishik Lake.</p>
Littoral Zone in Wabagishik Lake	<p>As noted in Section 5.1 of the final ER, the ER commits to strict operating restrictions so that lake levels upstream in Wabagishik Lake do not change by more than +/- 5 centimeters due to daily operation of the facility. In addition, the operation will follow natural lake levels throughout the seasons. The seasonal lake levels change by over 150 centimeters over time. Impacts associated with any lake level fluctuations are anticipated to be limited to the shallower, littoral areas of the lake. These littoral areas, estimated to cover 12.5 ha, already fall within the existing natural zone of fluctuation of Wabagishik Lake subject to the effects of wave action, seasonal level changes and seiche effects. Although there will be an increase in the frequency of small water level fluctuations, impacts to biota in the littoral zone are predicted to be minimal and not significant, as the ± 5 cm water level fluctuations resulting from operations are within the range of naturally-occurring fluctuations on the lake.</p>

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Methyl Mercury	<p>This issue of methyl mercury due to inundation of previously non-inundated areas has been studied thoroughly and we would refer you to the Hutchinson "Baseline Water Quality and Fish Tissue Mercury" report in Annex IV. The study establishes a current condition (baseline) water quality assessment and involves future monitoring to measure any changes that may occur. The assessment also looks at potential changes to methyl mercury levels, the conditions that may cause those changes to occur and the long-term effects. The generation of methyl mercury requires anaerobic conditions, a source of organic material and a source of mercury. The proposed new inundation related to the proposed Project is very small (0.4 hectares) in relation to the size of the existing aquatic habitat in the ZOI. The proposed inundation is shallow and channel-like, ensuring that stagnation and anaerobic conditions are not likely to occur. The ER further commits to removing the shrubs and vegetation in the proposed inundation area so as to minimize the available organic material. In the context of these circumstances, the potential for transient changes in mercury are exceedingly small. However, mercury monitoring has been included in the Monitoring Plan (Annex III of ER) to confirm these projections over time.</p>
Definition of Facility	<p>"Run-of-river with modified peaking" is defined by the OWA: "Many run-of river plants allow for limited storage of water over the course of the day or days. This allows the plant to produce more electricity during periods of high demand i.e., during the day/work week, and save water during periods of low demand i.e., at night/weekends. This type of plant can provide electricity service to the system, but with limitations imposed by the amount of storage and flexibility available (generally through a headpond.)" As such, the consultation and terms used therein are accurate. Extensive consultation has occurred on the plant operation. This consultation has included one-on-one consultation with other operators and affected riparian landowners in the ZOI. Special effort has also been made to ensure that all cottagers and adjacent landowners were provided with information on the proposed operation. PICs, meetings and release of draft ER were some of the key consultation platforms used. Specific information on the consultation efforts is included in the ER (Appendix D.)</p>
Request for Final Operating Plan and a Cost/Benefit Analysis in Final ER	<p>The Operating Plan (Annex I of ER) outlines all aspects of the proposed operation that are needed for the environmental assessment in the remainder of the ER. Specific emphasis was placed on documenting all operating restrictions that are significant to the environment and the public. These restrictions include limiting daily changes in flows and levels related to operations and avoiding daily operation during spawning. The cost/benefit aspects and the social benefit aspects are considered in the socio-economic section of the report. Operating Plans for greenfield projects are typically finalized during the Water Management Planning process and permitting under the Lakes and Rivers Improvement Act. However, it should be noted that all commitments made in the ER (including the operating restrictions in the Operating Plan) are binding. Additional stipulations may be added by regulatory agencies during the subsequent regulatory process. Climate change has been considered in the assessment of this project. Flow data records dating back to 1939 have been analyzed. Data from the last 30 years of flow records have also been analyzed in order to assess the years believed to be most affected by climate change. In addition, flow records from private operators on the river system have been analyzed and compared to longer term data sets. Comparing recent to more long term records provides inconclusive evidence that there may be subtle changes in climatic patterns, but not sufficient to change the environmental assessment process. Also, Xeneca is designing the facility to the 1:100 year flood which takes into account severe climatic conditions that may be associated with climate change.</p>
Cumulative Effects	<p>Facilities and structures already on the Vermilion system are included as part of the "existing conditions." Water quality issue has also been studied thoroughly, and we would refer you to the Hutchinson "Baseline Water Quality and Fish Tissue Mercury" report in Annex IV. The study establishes a current condition (baseline) water quality assessment and involves future monitoring to measure any changes that may occur. The assessment also looks at potential changes to methyl mercury levels, the conditions that may cause those changes to occur, and the long term effects. Erosion studies have been conducted (please see the Parish Geomorphology Report in Annex I of the ER) within the project area including Wabagishik Lake. The ER contains thorough hydraulic analysis, Hec-Ras model results, bathymetry and flow modeling that clearly assess potential effects of the project, including erosion potential, within the Zone of Influence including Wabagishik Lake and downstream to the Domtar headpond. Further, a comprehensive monitoring program and adaptive management strategy is in place to ensure modeling results are confirmed and environmental commitments are met. In summary, cumulative effects relevant to the Wabagishik Rapids project have been considered in the ER and assessments can be found in the Water Quality, Environmental and Geomorphological Reports, as well as in the Operating Plan.</p>

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Blue-Green Algae	Blue-green algae occurs under conditions that are usually predicated upon high nutrient (i.e. sewage effluent or fertilizers) levels and stagnant, warm water conditions. The ER shows that none of those conditions will be created or exacerbated by the Wabagishik GS. The Operating Plan commits to pass the entire daily inflow volume each day, even when daily operation is in effect. This flow passing will ensure that no change in stagnation, dissolved oxygen and temperature will occur. The Monitoring Report (Annex II of ER) commits to long term water quality monitoring to confirm these predictions and to adaptive management if unexpected conditions arise.
Public Safety (ice jams, extreme rain events and flooding resulting from the rain/ice events)	Public safety is of paramount concern to Xeneca. Xeneca has committed to maintain water flows and levels that will ensure continued navigability and recreational use as it currently exists. In accordance with the federal Navigable Waters Act, Xeneca will post warning signs in areas determined to be susceptible to ice instability as a result of the operation of Wabagishik Rapids GS. Water level fluctuations will be gradual, as changes in operating levels will be ramped over time (60 minutes - noted in the Operating Plan, Annex I.) Xeneca's safety plan, which will be prepared during the detailed design phase of the project, will be based on best practices within the Ontario industry and will be audited by a third-party professionally accredited engineering firm. 1. Ice jams - According to cottagers living near Wabagishik Lake, ice jams occur naturally near the Wabagishik Rapids project site, specifically in the fast-water section just upstream of the proposed dam site. Ice jams tend to occur in a narrow fast-water section of the river. When the project is built, this fast-water section will be submerged and will become part the project headpond. In fact, the dam construction will reduce or eliminate the chances of ice jamming in this particular section of the river. Neither project construction nor its operation will increase the likelihood of ice jam occurrence within the project zone of influence. In the very unlikely event of an ice jam near the project area, Xeneca will work closely with regulatory agencies and address the issue accordingly. 2. Extreme rain events - Xeneca has already committed to indemnify Vale and Domtar against losses that occur as a result of operation of the Wabagishik GS. Xeneca carries insurance that would also cover liability in the unlikely event of facility failure. 3. Flooding from rain/ice events - As stated in the previous two answers, operations of the Wabagishik Rapids GS will not exacerbate flooding. The facility is built to withstand floods occurring in the 1:100 year range.
Riparian Landowners	Extensive consultation has occurred with private riparian landowners, business/commercial interests as well as recreational users engaged in activities within the ZOI (detailed in Appendix D of the final ER.) The Operating Plan (Annex I of ER) firmly commits to limit daily water level changes related to operations. All proposed level changes upstream and downstream are well within the range of levels that occur under existing conditions for any given time of year. Two commercial facilities are potentially affected: the Lorne Falls generating station at the upstream end of Wabagishik Lake and the Domtar Dam facility downstream of the proposed project. Extensive consultation has occurred with the owners of both facilities and bilateral negotiation has occurred on avoidance of potential negative impacts and indemnification against any unexpected effects. Xeneca has committed to agencies to make best efforts to seek a signed agreement prior to issuance of permits, or, alternatively, to take self-imposed additional operating constraints as outlined in the Operating Plan. To date, Vale has indicated agreement with letter of intent. A Domtar mitigation letter is currently in draft form, and is in process pending the results of a third-party review of the Operating Plan.
Dam Decommissioning	The proposed waterpower facility is planned and will be built as permanent structures with no expectation toward eventual decommissioning. This approach is consistent with the industry experience in Ontario where many facilities are now over 80 years old, including those on the Spanish and Vermillion system. The Wabagishik GS is under a 40-year contract with the Province of Ontario. The design life of the project is 80 years. However, in the event the need for decommissioning is identified, an environmental assessment will be carried out at that time. If necessary, plant revenues would be placed into a decommissioning fund until amounts needed to meet the standards of that period are acquired and committed to the decommissioning process.

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Extensive effort was made in the environmental baseline studies to assess and mitigate impacts on Sturgeon and Walleye spawning (Annex III.) The baseline studies show that the lower end of Wabagishik Rapids is an important spawning area for Walleye and Lake Sturgeon populations downstream of the proposed dam in the lower Vermillion and Spanish Rivers. To mitigate footprint impacts, the facility was relocated upstream 255 meters, away from the main spawning beds. The ER assesses any residual impact on spawning areas, provides mitigation through operations restrictions and proposes compensation for any residual footprint impacts of the project. With the mitigation efforts committed to, the primary spawning area in Wabagishik Rapids will remain in a 300m length of Wabagishik rapids downstream of the proposed dam. This area is the most accessible spawning habitat for these fish populations. The dam and associated operations will not negatively impact the function of this spawning habitat. The operating plan commits to run-of-the-river operation during the spawning periods of both species, and special continuous operations during the Lake Sturgeon larval drift period. These operations are outlined in the operating plan included in Annex I of the EA.

To address the loss of some smaller spawning areas in the area of the proposed headpond, a fish habitat compensation plan has been included as part of Annex III of the ER. This plan includes three priority locations, the habitat suitability criteria, and consideration for the MNR's management objectives specific to the habitat area. The overall objective is to satisfy the requirements of the Fisheries Act, which prohibits causing serious harm to commercial, recreational and Aboriginal fisheries. To account for changes in the specific distributions of flows downstream of the dam, the 2-dimensional modelling used in the design will be used to account for these changes and inform the habitat improvements accordingly. In addition, and in response to requests by Aboriginal Communities and local stakeholders, Xeneca has committed to collaborate on a fish nursery project that will be operated at the site by United Walleye Clubs of Ontario. The project is expected to benefit the extensive fishing and angling activity on the river.

Lake Sturgeon and Walleye

As documented in the consultation section of the ER (Appendices C and E), fish passage was a topic of significant interest during consultation with regulatory agencies and Aboriginal Communities and received specific follow-up study. The expert consensus was that downstream passage is not significantly reduced. Special analysis work showed the existing amount of upstream fish passage is limited due to steep conditions in Wabagishik Rapids. No Sturgeon were found upstream of Wabagishik Rapids. Agencies and aboriginal representatives appear to have acknowledged the study findings. Hence, a need for upstream passage was not deemed to be significant. Instead, stakeholders requested that Xeneca participate in a fish hatchery initiative at the site, which Xeneca committed to (Section 7.2.) In general, the habitat requirements for aquatic species identified within the zone of influence exist where the species occur, whether upstream or downstream of the proposed dam. The fish habitat compensation plan directs compensation fish habitat downstream of the proposed dam to ensure sufficient spawning habitat is available for Walleye and Lake Sturgeon. Therefore, fish passage is not required to maintain ecological functioning and is not contemplated at this site.

As further explanation, the ER acknowledges the potential for both Walleye and Lake Sturgeon to ascend Wabagishik Rapids under certain existing conditions. This is based on modelled analysis of water velocities and the fish's swimming capabilities, and leaves some uncertainty as to the actual behaviour of the fish. For Lake Sturgeon, past MNR records show no confirmation of the presence of Lake Sturgeon in Wabagishik Lake. The lack of confirmed presence in Wabagishik Lake provides some indication of the behavioural tendencies of Lake Sturgeon. It does not completely eliminate the possibility of their passage through Wabagishik Rapids and their presence in Wabagishik Lake, but it does provide an indication. The MNR and Xeneca agree that the likelihood of Lake Sturgeon occurring in Wabagishik Lake is low, and the risk of isolating an area of utilized habitat is also low. Studies can never completely eliminate risk of this nature, particularly studies related to a small population of Lake Sturgeon. In addition, the MNR has expressed concern about repeated handling of the individuals in the population that occurs downstream of the proposed dam, because capture and tagging of these individuals for a telemetry program poses some risk of negative effect. The MNR has indicated that they are willing to accept the level of risk associated with the existing information, with one condition. The MNR has also made it clear that constructing the dam without provision for fish passage is contingent on creating additional spawning habitat for Lake Sturgeon downstream of the proposed dam as part of the fish habitat compensation plan. The spawning habitat will serve the Lake Sturgeon population that is known to exist in the Spanish River and the lower Vermillion River downstream of the proposed dam.

Walleye are known to reside both upstream and downstream of the proposed dam. Xeneca and the MNR agree that the upstream and downstream Walleye populations can be managed separately, provided fish habitat compensation for Walleye is provided downstream of the proposed dam (Annex III.)

Impacts to Fish Species/Fish Passage

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Fish Mortality	<p>The ER commits to the use of a Kaplan design turbine, which has lower fish mortality than most other designs (Section 3.3.5, Section 7.1.5 (pg 221) & Table 33, "Fish injury or mortality" (pg. 195.)) The design of intakes and trash racks was designed to allow only smaller fish to pass through. Studies have shown that small fish have a much lower mortality rate than large fish when passing through a turbine. The potential fish mortality impact has been documented in the ER and appears to meet the design and mortality criteria set forth by the federal Department of Fisheries and Oceans.</p>
Completedness of Final ER	<p>Xeneca respectfully disagrees that the ER is incomplete. The technical studies were specifically designed to meet and exceed the requirements of the Class EA technical guide. Extensive effort was made to address comments made and various technical studies were expanded over time to address specific comments from stakeholders, aboriginal communities and regulatory agencies. The consultation timeline was greatly expanded from the 18-month estimated in the Class EA process to over 36 months to provide ample opportunity for engagement and follow up. The consultation effort related to meetings, PICs and information postings on the web has greatly exceeded the requirements of the Class EA process. Diligent effort has been made to address every comment made in the Class EA process. In addition, a draft ER was issued in 2012 to all interested parties for review and comment, thereby greatly expanding review opportunities contemplated in the Class EA process.</p> <p>The technical baseline studies have been extremely extensive, including Hec Ras modeling, hydrology and hydraulic assessment, bathymetry, LiDAR surveys, geomorphology work, temperature assessments, rigorous water quality sampling protocols, thorough aquatic and terrestrial biological studies, archeology and socio-economic analysis.</p> <p>The effects of the proposed project and its operations are well understood. Where fish habitat is impacted, a compensation plan is in place to maintain ecological function. Robust monitoring programs, detailed operational plans and post-operational monitoring are established to confirm adherence to commitments and ensure modeling is accurate. In addition, if unexpected results occur, an adaptive management plan is in place.</p>
B2B Relationship/Incentives/Funding with Aboriginal Communities	<p>The programs and terms of programs available for First Nation participation are available through the Ontario Power Authority (OPA) website and, as such, the process is open and transparent. Any B2B arrangement is a private commercial arrangement between the proponent and those First Nation Communities that wish to participate. The specific B2B arrangements are not subject to public scrutiny.</p>
Transparency/Documentation About VSAC Correspondence in Final ER	<p>The Vermilion River Stakeholder Advisory Committee (VSAC) was established as an independent, third-party stakeholder advisory body. As such, they keep their own minutes for their own use, and, ultimately, it would be their decision to request inclusion of their material in Xeneca's ER. Xeneca was never requested to include VSAC meeting minutes in our Environmental Report. Should any stakeholder wish copies of VSAC meeting minutes, we would ask that they please contact Erin Calder, Chair of VSAC.</p> <p>Linda Heron's July 10, 2012 and July 25, 2012 letters were not included in the ER for the same reason - stakeholder advisory committee correspondence is not included in Xeneca's ER unless requested by VSAC.</p>
Trust & Confidence	<p>Xeneca has made every attempt to work with all stakeholders and stakeholder groups, including the ORA. Xeneca has held many meetings and teleconferences with ORA members. Xeneca has always strived to work in good faith and to consider all comments from concerned stakeholders. The record of consultation, inclusiveness and responsiveness is included in the record of consultation contained within the ER (Appendix D.)</p>
Socio-Economic Impacts	<p>Xeneca has always been clear that, while significant economic activity occurs during construction, these highly automated plants do not require staffing by more than one or two persons during operation. Benefits in the form of clean, cost effective, safe power generation with long-term royalties and fees paid to the people of Ontario are accrued by the public over the 40-year lifespan of the Feed-in-Tariff (FIT) Contract and beyond.</p>
Drinking Water/Human Health	<p>Water quality has been studied thoroughly. No impact on drinking water quality is expected. We would refer you to the Hutchinson "Baseline Water Quality and Fish Tissue Mercury" report in Annex IV of the final ER. The study establishes a current condition (baseline) water quality assessment and involves future monitoring to measure any changes that may occur. The Water Quality baseline studies have been carried out in compliance with regulatory guidance provided during the EA process. Further, as noted above, a comprehensive monitoring program and adaptive management strategy is in place to ensure modeling results are confirmed and environmental commitments are met.</p>

ORA Concern	Xeneca Overview Response
Fish Contamination	<p>This issue has been studied thoroughly in the Hutchinson "Baseline Water Quality and Fish Tissue Mercury" report in Annex IV of the ER. The study establishes a current condition (baseline) water quality assessment and involves future monitoring to measure any changes that may occur. The assessment also looks at potential changes to methyl mercury levels, the conditions that may cause those changes to occur and the long-term effects. (Please also see response to comment on methyl mercury). Consideration was also given to the potential for sediment contaminated by historic mining activity to become disturbed and available to fish. The studies concluded that the project would result in minimal sediment disturbance at the construction site and no sediment disturbance upstream or downstream. Strict sediment control measures are proposed to mitigate the potential for any sediment release during construction. In addition, the dam location was moved 255 meters upstream early in the EA process to a location that has a bedrock substrate and little sediment.</p>
Recreational Fishing	<p>The fish habitat compensation plan will ensure that required habitat components will be maintained to support game fish. The primary objective of the plan is to maintain spawning habitat for Walleye and Lake Sturgeon, as well as sucker species. As a secondary objective, the compensation habitat will serve to maintain fast-water benthic invertebrate production to the extent possible. Furthermore, the operating plan outlines specific operating parameters that will be used during the Northern Pike, Walleye and Lake Sturgeon spawning period each spring, which will ensure there are no impacts on the spawning success of these species. Monitoring of the compensation habitat and the downstream fish community will help to determine whether objectives are being met or if impacts are occurring, and contingency measures will be implemented as required. In addition, the proponent has been working with the United Walleye Club of Ontario on a fish hatchery initiative to enhance the fishery in the area.</p>