NOVA SCOTIA
Environment

Comment Index

Sporting Mountain Quarry Expansion Project – Additional Information

Publication Date: October 21, 2022

Government

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Nova Scotia Mi'kmaq

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1	KMKNO	October 12, 2022

Public

Number	Source	Date Received

Fisheries and Oceans Canada
Pêches et Océans Canada

Bedford Institute of Oceanography
1 Challenger Drive
P.O. Box 1006, Station P510
Dartmouth, Nova Scotia B2Y 4A2

Date: September 22, 2022

To: Jeremy Higgins, Environmental Assessment Officer

From: Kelley Fraser, Hydro and Flows Unit, Regulatory Reviews Biologist, Fish and Fish Habitat Protection Program

Subject: Sporting Mountain Quarry Expansion EA Project – Additional Information Addendum

Dear Jeremy Higgins:

Fisheries and Oceans Canada (DFO), Fish and Fish Habitat Protection Program (FFHPP) received the Nova Scotia Environmental Assessment Addendum registration documents submitted for the Sporting Mountain Quarry Expansion Project in Richmond County, NS. The proposed Project is to expand an existing quarry from the current under 4 hectares (ha) to a total 9 ha (reduced from 10 ha), to continue to extract and supply aggregate for road and local construction projects. Quarry operations are anticipated to remain the same, with the full development of the quarry occurring over a 30+year period, depending on market demand.

The Project is located in a rural area of Cape Breton Island, Nova Scotia. The property is situated in Seaview, north of Morrison Road (PID 75044156) and currently consists of the access road, settling ponds, existing quarry, previously logged areas and forested lands. As mapped in the field by the proponent's consultants in July of 2019, the property features 11 wetlands and two unnamed watercourses (WC1 and WC2). WC1 and WC2 that originate from a wetland (Wetland 2) are found on the project property. The proponent has developed a revised expansion area and now Wetland 2 will be avoided (including a 30 m buffer).

DFO-FFHPP is responsible for administrating the fisheries protection provisions of the *Fisheries Act* (*FA*) and *Species at Risk Act* (*SARA*) for aquatic species at risk. The fisheries protection provisions of the *FA* includes: section 34.4 which prohibits the death of fish by means other than fishing; section 35 which prohibits the harmful alterations, disruption, or destruction (HADD) of fish habitat; and section 36.3 which prohibits the deposition of deleterious substances into water frequented by fish or in any place where it may enter such water. *SARA* prohibits: the killing, harming, harassment, possession, capturing, or taking of a species listed as extirpated, endangered, or threatened; the damage or destruction of a residence; or the destruction of any part of the critical habitat of such a listed species, unless authorized by the minister.

Canada

Below you will find the comments from DFO-FFHPP regarding the above mentioned project:

- If drainage ditches being used to redirect water from the quarry connect to WC1, the ditches will need to be designed to include barriers to fish passage to avoid the potential access and stranding of fishes in the drainage ditches following high flow events;
- Riparian boundaries should be established to ensure a vegetative buffer is present to filter runoff prior to encountering watercourses; and,
- Wetland areas considered contiguous to WC1 may provide direct *and indirect* benefits to fish and fish habitat. Consideration should be given to the benefits contiguous wetland areas have, the expected degree of impacts towards the contiguous wetlands, and measures to be implemented to mitigate any impacts to fish and fish habitat.

Should the EA be granted conditional approval, DFO will be requesting additional information be provided through the Nova Scotia of Environment Watercourse Alteration Approval process to determine if the project will result in the HADD to fish and fish habitat and require an authorization under the *FA*.

NOVA SCOTIA
Environment and Climate Change

Barrington Place
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Date: September 29, 2022

To: Jeremy Higgins, Environmental Assessment Officer

From: Senior Hydrogeologist, Sustainability and Applied Science Division

Reviewed by Elizabeth Kennedy, Director, Sustainability and Applied Science Division

Subject: **Sporting Mountain Quarry Expansion EA Additional Information, Richmond County, Nova Scotia**

Scope of review:

Environmental Assessment (EA) reviews from the NSE Sustainability and Applied Science Division Senior Hydrogeologist focus primarily on groundwater resources. This includes the potential for the proposed undertaking/project to adversely affect groundwater resources, including general groundwater quality, quantity, municipal water supplies, local water supply wells and groundwater contributions to stream baseflow, groundwater recharge and wetlands. The review is conducted of materials provided by the proponent during the EA registration and additional information request process including references to previously submitted material.

The Sporting Mountain Quarry Expansion EA Supplemental Information report was submitted by Nova Construction Co. Ltd on August 24, 2022 (as prepared by GHD consultants) to address the additional information requested by the Minister of ECC (August 25, 2020 Decision Letter to Nova Construction Co. Ltd.). The following only reviews the groundwater related information requested in Item 1 of the Decision Letter.

> *"1. In consultation with Nova Scotia Environment, Sustainability and Applied Science Division, provide additional details for the water resources assessment with accompanying discussion and analysis of potential effects to surface water resource quality and quantity, wetlands and groundwater quality and quantity, that includes the following:"*

The following is a bullet point summary of the details of requested additional information, related specifically to groundwater assessment (for full details refer to the Minster's Decision Letter):

- A detailed groundwater monitoring study to assess numerous hydrogeological data as listed
- Assessment of potential effects on water resources from excavating below the water table

- A wetland hydrology study in conjunction with the groundwater assessment work
- A water balance assessing all aspects of surface water and groundwater interactions at the site including quarry groundwater inflow and dewatering pumping conditions
- Details of the site water management plan including considerations for the potential impacts associated with planned operations and the potential need to manage groundwater inflows
- Assessment of potential impacts from discharges of excavation groundwater to surface water resources proposed mitigation measures and follow-up monitoring programs.

Technical Comments:

- **Groundwater monitoring study**

There is some good information received from the groundwater monitoring study. The data collected clearly demonstrates that the existing quarry and the proposed quarry expansion are far below the ambient water table for the area. The current quarry floor of about 140 mASL is about 18 metres below the water table and 10 metres below the upper quarry pond level when full (according to Figures 1 and 2 in the report). However, the study did not fully address the Minister's comments with respect to determining:

- Actual water table location – reliable water table wells should be screened across the water table in the shallow zone and not in deeper groundwater zones

- Vertical hydraulic gradients – this requires comparison between shallow and deep well piezometric conditions and was not done as there were no shallow wells installed

- Hydraulic conductivities for shallow and deep groundwater zones – only the deeper groundwater zone was done

- Monitoring for groundwater-surface water interactions in nearby watercourses – this would typically be assessed with shallow groundwater wells and was not done

As a result of some of the gaps in the response to the Minister's requested Additional Information, there does remain uncertainty related to defining important groundwater conditions. These uncertainties may be able to be addressed by site-specific approval terms conditions for operations.

- **Potential effects of excavating below the water table and wetland hydrology study**

The proponent has now demonstrated that the Sporting Mountain Quarry and proposed Expansion excavations are currently, and will continue to be, well below the water table (by up to 18 metres or so). In order to assess the potential effects of this on the

environment they have looked at several important aspects, although this may need to be further assessed and monitored.

Aspects looked at by GHD for the quarry expansion include:

- Estimating a gross radius of influence (ROI) on the surrounding ambient groundwater for a dewatered quarry excavation based on a rough empirical simplified formula and then altered to fit site assumptions

- Conducting a quarry dewatering exercise over a two-week period in May-June 2022 to determine dewatering rates needed as well as groundwater inflow rates into the dewatered excavation

- Groundwater water quality chemistry for the four installed monitoring wells and there can be an inference that dewatering water quality will be equivalent

- Installation of wetland piezometers and shallow wetland monitoring points in some locations to monitor wetland water conditions

Based on this information GHD concludes that “Based on these observations there will be no impact to any groundwater users and the potential impact to surface water will be insignificant.” (EA Supplemental p. 10).

There are some concerns with the information provided, including the following:

- Estimates for ROI in groundwater due to quarry dewatering are based on very rough science and may not be very accurate. More accurate calculations and methodologies could improve these estimates

- The quarry groundwater inflow rates following dewatering are not well justified and do not match the site data (hydraulic conductivities and water levels) very well

- The EARD report states that the quarry floor elevation will remain at 125 mASL, whereas as the EA Supplemental report indicates clearly the quarry floor at 140 mASL (Figures 1 and 2). This discrepancy is very large (15 metres) and the actual proposed quarry floor elevation should be stated clearly. It is not clear if this is a typo error, or a change in operational plans. This would have an effect on dewatering and the groundwater ROI

- Although wetland “shallow monitor wells – SMW” (maximum 1 metre depth) and piezometers (deeper than SMW?) were installed in three wetlands and it is stated that monitoring occurs, no monitoring data was provided to show conditions. At these locations the actual groundwater water table (which may be either independent of /or related to the wetland water conditions) was not assessed and additional monitoring installations may be needed

- The potential for water quality impacts due to discharge of groundwater chemical parameters into surface watercourses was not addressed

- **Water balance**

A preliminary water balance was provided in Appendix C. Looking at the groundwater components of this water balance there are a few components that have not been fully addressed.

  - The report states that “Due to the relatively shallow groundwater table observed at the site, minimal infiltration is expected through the quarry floor under dry conditions. An infiltration factor of 0.1 was applied to the quarry area in the operating conditions scenario.” (Appendix C, 2.3 Section Infiltration Factor). This does not make practical sense when the quarry floor is below the water table and the groundwater hydraulic flux is upward, recharging the quarry at the rates as stated by GHD subsequently in Section 2.4 Groundwater Contribution (20-30 Litres per minute)

  - Figure 4 of Appendix C provides an estimated Zone of Influence for the expanded quarry excavation dewatering. It should noted that this was not well rationalized with several assumptions being made and should be considered “conceptual”.

  - Groundwater components of the water balance resulting from the high (shallow) water table and quarry dewatering at depth are not well highlighted. For example although dewatering effects on WC1 are shown in the report, similar effects may occur on WC2 if the Zone of Influence is accurate. It is potentially the case that such effects would be mitigated by discharge from the quarry, however this is not stated or clearly expressed in the report. The main body (p. 14) reports “In operating conditions, groundwater will be drawn into the pit, resulting in a reduction in baseflow in the adjacent watercourses.”

  - A comparison of watercourse baseflow reductions to quarry groundwater inflow rates was not presented.

  - Similarly, it is not clear if any wetlands within the Zone of Influence shown will experience impacts to water levels as no data was shown for this

  - Refinements to the preliminary water balance would be necessary to address some of the points above and include more specifically groundwater inflow recharge into the quarry.

- **Site water management plan**

Details provided for the site water management plan provide a high level description of site water management. This plan considers that full dewatering is necessary for operations and that pumping would maintain the dewatered conditions for potential operations from April to November. Pumped groundwater inflow from the quarry would be directed to settling ponds in the northeast and southeast before being discharged to surface water in WC2.

- The site water management plan does not address the potential need for treatment of metals or other chemical parameters in groundwater prior to discharge to surface water. This is a gap that will need to be assessed and likely could be addressed as terms and conditions in an operating approval if approved.

- Given the quarry groundwater inflow rates provided of 21-30 litres/minute, this equates to the need for daily groundwater extractions during operations of 30,000-43,000 litres/day which is in excess of the *Activities Designation Regulations* Water Withdrawal approval trigger of 23,000 litres/day. Thus, an Approval for dewatering and maintaining the groundwater withdrawal during operations will likely be necessary.

- **Proposed mitigations and follow-up monitoring programs**

  Surface water monitoring/mitigation and groundwater monitoring general programs are included in the report.

  - As Nova Construction Co. Ltd. is proposing to discharge groundwater from the quarry dewatering into WC 2, appropriate water quality parameters should be included in the monitoring program that are similar to the Groundwater Monitoring program parameters (i.e full general chemistry, metals and BTEX-TPH

  - Mitigations that may need to take place should monitoring triggers or site compliance points be exceeded are not elaborated within the report. This could be addressed in terms and conditions for operations if approved.

  - NSECC should consider requirements for establishment of points of compliance and compliance criteria that must be met for the site and provide these under terms and conditions if approved.

Summary of Gaps/Risks			
Identify Gap/Risk	**Can it be addressed in another permit/approval or with a T&C?**	**Define/provide detail**	**Risk of gap and this approach?**
No true shallow water table wells	Yes, T&C	Install 2-3 additional water table monitoring wells near WC1 and WC2 for monitoring water levels (screened across the water table – see a hydrogeology text for definition).	Not understanding potential for impacts to surface water and ability to provide possible mitigations.
Dewatering water level effects on groundwater/surface water not well established	Yes, GW Withdrawal approval and IA T&C	Require additional analysis with accepted hydrogeological / geotechnical methods and calculations for better determining quarry excavation water effects on surrounding WC and WL features.	Unknown water level lowering impacts or excess pumping to surface watercourses WC 1 and 2 and wetlands (WL2).

Summary of Gaps/Risks			
Identify Gap/Risk	**Can it be addressed in another permit/approval or with a T&C?**	**Define/provide detail**	**Risk of gap and this approach?**
Water quality effects of discharging groundwater chemistry into surface water not assessed	Yes, T&C	Compare groundwater discharges to surface water criteria (CCME-FAL) and require discharge water quality monitoring from settling ponds along with potential mitigation measures for any exceedances.	Water quality impacts from pumping excavation dewatering groundwater into surface water.

Summary of Recommendations

The additional information provided by GHD on behalf of Nova Construction Co. Ltd has been reviewed with respect to the Minister of ECC's Decision letter requests. In general, information has been provided that greatly improves the understanding of the site with respect to groundwater, hydrogeology, the water table, dewatering conditions and potential effects on the environment.

Some additional requirements are recommended in order to provide a more complete and sustainable set of environmental protection measures for operations of the site as proposed.

Planning/Design Issues of Significant Importance

No significant planning or design issues are raised in this review from the additional information provided.

Operational Issues/Other Permitting Processes

The groundwater issues noted in this review are primarily operational in nature. They may be met appropriately as terms and conditions of an operation, if so approved.

Such issues/recommendations include:

- Installation of water table wells to assess shallow soil/bedrock conditions and dewatering adjacent to watercourses WC1 and WC2 (potentially at locations adjacent to MW 1, MW3 and MW4).

- Follow the *Activities Designation Regulations* Water Withdrawal approval process for dewatering planned greater than 23,000 litres/day. The Guide for Groundwater Withdrawal Approvals provides the requirements for the approval. In conjunction with this Guide, a hydrogeological study to better assess predicted drawdown effects and pumping rates would be necessary. More advanced additional drawdown analysis with accepted hydrogeological / geotechnical calculation

methods and calculations appropriate to quarry pit excavations would be expected for the submission.

- In the above submission, the dewatering effects on groundwater levels potentially affecting surface watercourses and wetlands should be better determined and presented. Both surface water data and wetland monitoring data should be assessed and presented. Monitoring programs should be set up to ensure any necessary mitigations for dewatering conditions during the quarry lifespan.

- Water quality monitoring conditions at surface water monitoring locations should include all groundwater monitoring quality parameters.

- Settling pond discharge locations should be included for the same water quality parameters as surface water and groundwater.

- Clarity should be provided with respect to stating the proposed base of excavated quarry floor elevation(s).

NOVA SCOTIA
Environment and Climate Change

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Date: October 1, 2022

To: Jeremy Higgins, Environmental Assessment Officer

From: Surface Water Quality Specialist, Water Resources Management Unit;

Subject: Sporting Mountain Quarry Expansion Project, Richmond **County, Nova Scotia**

Scope of review:
This review focuses on the surface water quality mandate.

Technical Comments:

The EA Supplemental Information document responds to requests for additional information identified in the Minister's Decision letter pursuant to the project EA Registration Document. These information requests were related to water resources and wildlife – Items 1 and 2, respectively.

Items 1(c) and 1 (g), and all aspects of Item 2, fall outside of the surface water quality mandate and is not considered in this review.

Items 1(a) and 1(d) required consideration for groundwater-surface water interactions. These considerations were only given in the context of item 1(c) and can not be considered complete. Consequently, the potential environmental effects of these interactions on nearby watercourses are unknown. Confirmation that there are no such interactions, or that the result of such interactions does not negatively impact receiving watercourses (i.e., WC-2), would allow the risks of potential adverse effects to be mitigated.

The addendum did not clearly identify whether excavation is occurring or is proposed to occur within 1m of the measured maximum annual water level. In addition, the document did not provide an assessment of potential effects to water resources if this is the case – the assessment provided was limited to the effects of quarry dewatering. As a result, the potential impacts of quarry excavation on water resources are not fully known. Confirmation that excavation does not occur within 1m of the maximum annual water level, and is not proposed to do so, would mitigate potential adverse effects. If excavation does or is proposed to occur within this range, then clarification that the existing assessment meets this requirement would adequately mitigate against this risk.

<u>Site water management plan</u>
The addendum indicated that there are four planned project phases and provided general considerations for water management during the operating and dormant phases. These considerations included the development and use of sediment ponds,

dewatering and quarry pit flooding. No details were provided regarding site shut-down and start-up, the location or design of drainage ditches, the anticipated volume of groundwater to be dewatered from the quarry during the operating conditions, the design and construction of sediment ponds to accommodate groundwater pumped from the quarry floor in addition to surface runoff, or associated pumping requirements associated with quarry dewatering and/or storm events. Further, standard volumetric considerations for sediment pond design, such as a 1:100 year design storm event and the possibility of additional precipitation volume predicted by climate change, were not addressed. In the absence of these details, there is insufficient evidence that site water management will effectively protect against adverse impacts to on-site and downstream surface water resources. This risk may be mitigated by designing sediment ponds to accommodate groundwater pumped from the quarry floor in addition to normal surface water flows inclusive of storm events and contingencies for precipitation increases owing to climate change.

Pumping and blasting impacts to surface water quality

The proponent indicated that all surface water runoff and groundwater inflow collected in the quarry will be directed to sediment ponds 2 and 3, which will reduce the concentration of TSS to within acceptable limits. The proponent further indicated that settling ponds will reduce the concentration of any metals constituent that may be present prior to discharge. No assessment was made of the potential for presence and concentration of metal or other chemical constituents that could be deposited into the sediment ponds, the expected reduction in metal or other contaminant concentrations due to the effective operation of sediment ponds, or whether their final concentration at discharge meets or exceeds the limits for metals identified in Canadian environmental quality guidelines for the protection of aquatic life. The risk of surface water contamination via this pathway could potentially be addressed by adding metal and other chemical treatment technologies to sediment ponds 2 and 3. The scale of these technologies could be adjusted based on an assessment of potential contamination of receiving watercourses from concentrations of chemical and metal substances measured in groundwater samples. Associated monitoring provisions are identified in the mitigation and monitoring section below.

The addendum identified that residues produced from blasting have the potential to result in increased levels of nitrate and nitrite within site discharge. The assessment that previous blast impacts had negligible impacts on nitrate and nitrite concentrations on water quality samples from SP-1 discharge is sufficient evidence that blasting impacts will likely have no impacts on WC-2 downstream of sediment ponds 2 and 3. It is recommended that, if this EA addendum is approved, a blast management plan, inclusive of reagent storage, handling, and spill prevention, shall be prepared and approved by Department staff as part of an Industrial Approval process.

Surface water mitigation and monitoring

The proponent outlined a site water management plan to direct all surface water away from disturbed surfaces, and to direct all surface water contacting disturbed surfaces towards sediment ponds for retention and treatment prior to discharge. The proponent identified that this plan would be accomplished through dewatering (pumping) the quarry to the sediment ponds, along with drainage ditches and swales, re-vegetated slopes, and engineered spillways to direct sediment pond discharge to receiving

watercourses. The addendum proposed five surface water monitoring locations with associated rationale, parameters and frequency. The parameters and frequency proposed for surface monitoring stations SW-1, SW-2, and SP-1 are acceptable. The parameters proposed for sediment ponds 2 & 3, however, do not account for the potential for contaminants that may be introduced to the surface water environment from groundwater to be pumped from the quarry floor. To mitigate against the risk of surface water contamination via this pathway, it is recommended that, if this EA addendum is approved, that a surface water monitoring plan will require monitoring for RCAP-MS and BTEX-TPH at these sediment ponds, at the same (quarterly) frequency as required of other parameters.

Summary of Recommendations: (provide in non-technical language)

1. Confirmation that there are no groundwater–surface water interactions, or that the result of potential groundwater-surface water interactions will not negatively affect the receiving watercourses from the proposed activities, will support mitigation of the risks of such interaction.

2. Confirmation that excavation does not occur within 1m of the maximum annual water level, and is not proposed to do so, would mitigate potential adverse effects. If excavation does or is proposed to occur within this range, then clarification that the existing assessment meets this requirement would mitigate against this risk.

3. Designing sediment ponds to accommodate groundwater pumped from the quarry floor in addition to normal surface water flows inclusive of storm events and contingencies for precipitation increases owing to climate change, will mitigate the risk that they are not sized for all design flows and that they may not reduce the concentration of contaminants below compliance discharge levels.

4. Designing, constructing, and operating treatment systems for potential metal and chemical contaminants at sediment ponds 2 and 3 would mitigate against the risk of surface water contamination from constituents associated with groundwater pumped from the quarry floor. The requirement for these systems may be limited or eliminated by a detailed assessment of the potential for surface water contamination by local groundwater constituents.

5. For blasting plans, the proponent will be expected to submit design details at the industrial approval stage, inclusive of reagent storage, handling, and spill prevention.

6. The proponent will be expected to submit a surface water quality monitoring program at the industrial approval stage, inclusive of RCAP-MS and BTEX-TPH at sediment ponds 2 and 3 at the same frequency as other monitoring parameters at these locations.

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NOVA SCOTIA
Natural Resources and Renewables

Date: October 1, 2022

To: Jeremy Higgins, Environmental Assessment Officer

From: Elizabeth Walsh, Regional Biologist, Regional Services; **Sign-off by**

Manager/Director (, Regional Resource Manager, NRR)

Subject: EA Addendum (Additional Information Request) Review, **Sporting Mountain Quarry Expansion, Richmond County, Nova Scotia**

Scope of review:
This review focuses on the following mandate: species at risk mitigation and monitoring plans, review of addendum to quarry expansion layout based on concerns associated with the biodiversity in the project scope. The review of the additional information is to determine if the proposed mitigation measures are sufficient for species and habitats identified in the EA Addendum. The information provided below is meant to supplement the actions outlined in the EA Submission documents.

Technical Comments:

The documents provided within the additional information requested for Canada lynx, at-risk lichen and concerns associated with maintaining the health and function of Wetland 2 due to the documented presence of species at risk, have been addressed within this addendum. Both the lichen management plan and Canada lynx monitoring plans were developed in consultation with NRR Wildlife Division and Regional Biologist and implemented the concerns addressed in earlier versions. Additionally, the amendment of the quarry expansion layout areas to appropriately buffer wetland 2 and maintain the integrity of existing lynx buffer areas and habitat for Canada Warbler and to ensure that the quarry keeps within the area of existing disturbance adequately addresses the concerns as identified from the original EA registration documents.

However, there are still some concerns to be addressed, remaining from the original comments providing by NRR from the initial EA registration documents. Please refer to the Summary of Recommendations, as these concerns can be addressed through the creation of a Wildlife Management Plan for the proposed expansion project.

Summary of Recommendations: (provide in non-technical language)

The department offers the following recommendations for consideration as conditions for project approval:

1) The proponent will provide the Department's Wildlife Division, with GIS shapefiles showing the location of:
- all flora and fauna surveys
- all S1, S2, S3 species recorded in surveys
- all species listed under NS Endangered Species Act and SARA recorded in the project area.

2) ***Wildlife Management Plan***

The proposed mitigation measures in relation to flora and fauna and Species-at-Risk (SAR) lack clarity. A Wildlife Management Plan must be developed as outlined below to clearly frame mitigation measures for biodiversity, wildlife, and species-at-risk. Preparation of a Wildlife Management Plan (WMP) is required to clearly outline the mitigation measures to protect flora and fauna listed as sensitive or at risk. **The WMP must be developed in consultation with Department of Natural Resources and Renewables and be approved by the Department and NSECC before any work commences at the site.** The WMP should include:

a) Effective management responses and procedures for what to do when a species at risk or species of conservation interest (SOCI) is found within the approved operational area.
b) Establish a clear communications procedure for reporting observations of SAR and SOCI species and unexpected observations on site to project managers and to Wildlife Division and Regional Biologist, Department of Natural Resources and Renewables (NRR).
c) Clearly outline the mitigation measures and the timing window for clearing to protect all species of migratory, SOCI (S1, S2 and S3) and SAR birds, their nests and eggs for species recorded on site or within potential habitat on site. Generally clearing should be avoided from April 10 to August 31 for passerines. However, mitigation to avoid the raptor and owl breeding and nesting seasons, which occur earlier, should also be addressed. It is the responsibility of the proponent to ensure compliance with federal and provincial legislation and regulations regarding resident, migratory and at-risk bird species and their habitats (e.g., *Species at Risk Act, Migratory Birds Convention Act, Fisheries Act, NS Endangered Species Act, NS Wildlife Act*, and their regulations).
d) The WMP should include mitigation measures and management actions should an individual snapping or wood turtle or their nests be found on site. Although these species have a limited potential to occur on site, both are attracted to quarries for nesting and thus quarry operations pose key threats for these species during nesting season.
e) Provide a clear procedure to avoid creating nesting habitat for Bank Swallows and Common Nighthawks and an approach for inspecting, and protecting nests, should they be encountered during operations.
f) A clear approach for providing training and identification information in the form of photos and descriptions of SAR species and sensitive habitat features (e.g.,

raptor nests) to personnel working on site and the procedures to follow should SOCI or SAR species be encountered on site (For example, Common Nighthawk nests are difficult to find due to their ability to blend into the substrate. The WMP must provide detail on how the proponent will ensure that site personnel are adequately trained on identification and behaviours to look for in order to ensure incidental take of nests is avoided. Procedures to follow should a nest be found would include actions such as halting work, establishing a buffer setback, and notification and consultation with NRR.

g) A plan for providing human-wildlife conflict training to avoid bear and coyote interactions and measures to be taken should an encounter occur. The plan should include measures to mitigate attracting other nuisance wildlife to the site.
h) A plan to ensure wildlife cannot become trapped within the quarry pit and measures for monitoring and mitigation should entrapment occur.
i) Approaches to monitor and control the incursion of invasive species of plants within the operational areas approved for this project. The proponent should undertake periodic inventory of the approved area every three years to identify any new non-native plants within the Project Footprint (i.e., not reported in the baseline vegetation survey). If any new non-native species are found, the proponent must report these to NRR and consult on any corrective actions required
j) Vegetation in sensitive habitats (i.e., wetlands) should be monitored on an annual basis. If there is a change in the plant community structure that is attributable to the extraction, including any increases in invasive plant species, the proponent will undertake corrective actions in consultation with NRR and NSECC.
k) Plans for mitigating light pollution that could impact migratory birds, including long-distance migratory shorebirds, songbirds, Common Nighthawks, bats, or waterfowl on the adjacent coastline. This may include a reduction in lighting during key spring and fall migration periods.
l) The WMP should provide detail on the proposed duration of the quarry expansion and how the proponent will address changes to species-at-risk listings over time. Additional biodiversity and species-at-risk surveys may be required periodically to ensure no impacts to SAR or biodiversity under revised and updated legislation.
m) Plans for restoring former operational areas through recontouring and revegetation with native species
n) The WMP should include the monitoring plan for Canada Lynx, as developed in consultation with NRR.

IMPORTANT:

- **Always provide a response back to the EA Branch, even if it is simply to confirm that there is "no comment."**

- **The comments will be published on the EA website on decision day (privacy review is NOT conducted on comments from government).**

A) Guiding questions for Technical Comments:

- *Does the EA registration document (including Appendices) provide adequate information to identify the potential environmental effects; therefore, the required mitigation measures? Explain.*
- *Can the potentially significant adverse effects/environmental effects be identified? Explain.*
- *Are the proposed mitigation measures / controls sufficient to address the potential environmental effects? Explain.*
- *Would the Generic EA Mitigations (see attached for reference) address remaining effects?*[1]
- *If there are information gaps, are there any suggested site/project specific mitigations that would allow risks to be mitigated?*
- *Are there any potential positive environmental effects? Explain.*
- *Does the project trigger any environmental approval / permit (Provincial or Federal) other than the EA Approval – which one(s), and what outstanding information and / or conditions could be considered as part of these?*

Risk Assessment			
Identify Gap/Risk	Can it be addressed in another permit/approval or with a T&C?	Define/provide detail	Risk of this approach?

B) Guiding questions for Summary of Recommendations:

- *Describe what outstanding information and/or conditions (if any) can be considered as a part of other approvals / permits required for the project.*
- *If required, provide any suggested site/project specific mitigations that could be included in terms and conditions that would allow risks to be mitigated.*
- *Identify* specific outstanding information needed to address high risk environmental effects (if any) that cannot be mitigated.

1 *To be provided, as available, based on the nature/type of project being evaluated.*

NOVA SCOTIA

aSustainability and Applied Science

MEMORANDUM

To: **Jeremy Higgins, EA Branch**

From: **Water Resources Engineer, Water Resource Management Unit, Sustainability and Applied Science Division**

CC: **Elizabeth Kennedy, Director, Water Branch**

Date: **Oct 1, 2022**

Subject: **Sporting Mountain Quarry EA Addendum Review Comments**

Scope of review:

The scope of this Environmental Assessment review from the NSECC Sustainability and Applied Science Division Water Resources Engineer is to assess the potential environmental impacts and proposed mitigations of the proposed undertaking on surface water quantity and management. While comments may also include considerations for impacts on general surface water quality, groundwater, freshwater fish habitat, and wetlands, appropriate technical specialists for these areas should be consulted for specific review and comment.

Documents reviewed:

The documents outlined below formed the basis for this EA review, and is referred to as the 'the submission' through the rest of this memorandum:

- Sporting Mountain Quarry Expansion – EA Supplemental Information, dated August 24, 2022, and accessed from https://novascotia.ca/nse/ea/Sporting-Mountain-Quarry-Expansion-Project/default.asp

Review re: Sporting Mountain Quarry Expansion EA document:

General:

- Operations are currently under an Industrial Approval for a quarry less than 4 ha

- Proposing to expand the existing quarry from <4 ha to <9 ha, reduced from what was proposed in original EA Registration Document (EARD)
- Both watercourses identified in the study area (WC1 and WC2) have been reported as first-order, intermittent watercourses

Decision Letter 1a): *"A groundwater monitoring study completed for all phases of the project using an industry-standard permanent monitoring well network established to assess the water table location, vertical and horizontal hydraulic gradients, hydraulic conductivities for shallow and deep groundwater flow regimes, groundwater flow directions, baseline water quality and to monitor for downgradient water quality and quantity effects, including effects of groundwater recharge and groundwater-surface water interactions on nearby watercourses and wetlands."*

Response:

- "In May 2022, Nova initiated a program to pump the standing water from the quarry…Except for the period from noon on May 24th to noon on May 26th, when the pump was shut down for maintenance, Nova pumped water continuously from the quarry until June 1, 2022. The water level in the quarry decreased from approximately 152 m AMSL prior to the dewatering to approximately 142 m on June 1, 2022." (pg 9)
    - To note – quarry depth currently 10 m. Original EARD outlined a potential max quarry depth of approximately 32 m.

Decision Letter 1d): *"Water balances developed to represent all the planned phases of the project, including appropriate considerations for quarry floor infiltration, groundwater-surface water interactions, groundwater inflows into the existing quarry, and with consideration of the results of the groundwater monitoring study."*

Response:

- "In operating conditions, groundwater will be drawn into the pit, resulting in a reduction in baseflow in the adjacent watercourses." (pg 14)
- "Baseflow volume reductions in the watercourses adjacent to the pit were determined using the average estimated groundwater inflow rate to the pit and the zone of influence of the expanded pit on the surrounding water table. A pit inflow rate of 21 L/min was determined from the groundwater monitoring program. The average annual pit inflow rate is estimated to increase to 30 L/min when the quarry is at full development." (pg 15)
    - What is the determination of 30 L/min based on? According to elevations provided in the original EARD, the maximum quarry depth was approximately 32 m, which is much deeper than what is shown in the cross-sections in Figure 4 and 5 – is this still the case, and how has this been considered in this determination?
- "Four site conditions were analyzed, including: baseline conditions, operating conditions, dormant conditions, and reclamation conditions. Baseline conditions consider the site topography prior to extraction of the existing quarry. Operating conditions consider the quarry at full development and are expected to occur at approximately 30 years. Runoff in operating conditions will be discharged to two settling ponds located northeast and southeast of the quarry before entering WC2." (App C, pg 1)
- "The quarry floor was assumed to be dry during operating conditions." (App C, pg 1)
    - It is unclear what this assumption means from the perspective of the water balance – from review of Appendix 1 of Appendix C, it appears that it has been assumed that there will be no groundwater pumping taking place in July and August – is this correct? If yes, what is the justification for this assumption? This conflicts with the other information re:

groundwater levels provided within the submission, as well as other statements provided, such as the following: “Water collected in the quarry under operating conditions will be pumped to two settling ponds located northeast and southeast of the quarry extents before entering WC2.” (pg 15)

- “It should be noted the drainage in operating, dormant, and reclamation conditions is expected to remain constant. During operating, dormant, and reclamation conditions, water which falls on the quarry will be discharged to WC1.” (App C, pg 3)
    - This statement conflicts with information provided elsewhere in the submission, such as “Water collected in the quarry under operating conditions will be pumped to two settling ponds located northeast and southeast of the quarry extents before entering WC2.” (pg 15)? Assuming the statement in App C quoted above is a typo.
- “During baseline conditions the watersheds in the project site were determined to be hilly land (0.1 infiltration factor) with a combination of cultivated land (0.1) and woodland (0.2). Soil in the area is described in the Soil Survey of Cape Breton Island as having good drainage (Nova Scotia, 1981). Due to the relatively shallow groundwater table observed at the site, minimal infiltration is expected through the quarry floor under dry conditions. An infiltration factor of 0.1 was applied to the quarry area in the operating conditions scenario.” (App C, pg 3)
    - This justification is difficult to understand and accept – I read this to say that baseline and operating conditions will have similar infiltration losses, even though operating conditions represent altered conditions where infiltration is expected to occur below the water table and undisturbed conditions would have soil with good drainage?
- “In operating conditions there will be a 29.81 percent increase in streamflow at the WC2-US assessment point. In dormant and reclamation conditions there will be a 27.03 percent increase in streamflow compared to baseline conditions. These increase in streamflow are attributed to the overflow/pumped water from the expanded pit via the northeast settling pond that is outside of the baseline WC2-US catchment. WC2 at the WC2-DS assessment point will experience an increase in streamflow of 13.36 percent under operating conditions due to groundwater inflows to the quarry discharged at the southeast settling pond.” (pg 5)
- “There will be a reduction in streamflow in WC2 when the quarry is dormant or in reclamation and the pit is filling with water.” (App C, pg 6)
    - This is not assessed or quantified anywhere in the submission. According to drainage areas stated in the submission and the proposed size of the quarry, the WC2 drainage area will be reduced by in the range of 50% during the filling period. The magnitude and length of this reduction has not been assessed, and any impacts associated with this are currently unclear. The original submission outlined a maximum quarry depth of approximately 32 m – it is unclear if this is still what is proposed. If yes, this could represent a significant volume to be filled after operations every year, and a disruption to local drainage patterns that is currently not assessed in the submission.
- From a review of Attachment 1 within Appendix C, it is unclear if the water balance is consistent with statements outlined in the rest of the submission. On page 15, it is stated that “The quarry will be completely dewatered prior to Project operations and will be allowed to flood following the end of operations.” If this is the case, why are there increases in monthly streamflow values during the fall/winter/spring months? This would seem to indicate that pumping was occurring all year, instead of what is reported in page 15 and otherwise? Please clarify, as this point is

necessary to understand how the settling ponds will be designed and operated, and whether that approach is feasible as a mitigation.

Decision Letter 1e): *"Additional details regarding the site water management plan for all the planned phases of the project, with the intent of clearly outlining what is proposed and the effectiveness of the proposed actions in mitigating impacts and alterations to nearby water resources. Details are to include, but not be limited to: considerations for the potential impacts associated with planned operations (e.g., times of site shut-down and restart, pumping requirements on site), plans/figures that provide sufficient detail to illustrate what is being proposed (e.g., sediment control ponds, drainage ditches) and provide confidence in their feasibility and effectiveness, and details that consider the results of the assessments (e.g., potential need to manage groundwater inflows)."*

Response:

- "Under operating conditions, the quarry will be completely dewatered to allow for Project activities to occur within the quarry footprint. Water collected in the quarry under operating conditions will be pumped to two settling ponds located northeast and southeast of the quarry extents before entering WC2. Project operations are driven by market demand which could be seasonal on an annual basis; however, blast and crush operations have been occurring every 2-3 years between April and November. The quarry will be completely dewatered prior to Project operations and will be allowed to flood following the end of operations." (pg 15)
    - The information in the above does not appear to align with what was completed in the water balance (see comments on 1d) above).
- "Impacts to WC2 resulting from increases in streamflow will be mitigated through use of the northeast and southeast settling ponds. Instantaneous peak flows will be attenuated as water is discharged more gradually through the pond outlets."
- "The northeast and southeast settling ponds will be constructed according to the Nova Scotia Erosion and Sediment Control Handbook (Nova Scotia Department of Environment, 1988). According to the handbook, the volume of a settling pond must be at least 190 cubic metres (m3) for every hectare under development. The drainage areas supplying runoff to the northeast and southeast settling ponds are approximately 1.9 ha and 5.4 ha, respectively. Therefore, the minimum settling pond volume required by the handbook is 361 m3 for the northeast pond and 1,331 m3 for the southeast pond once the quarry is fully extracted. Detailed design of the settling ponds and overflow channels will be completed as part of the IA application." (pg 15)
    - Through review of the submission, the objectives of the 'settling ponds' is unclear, and the design criteria stated is likely not applicable. As outlined in the quoted sections above, the intent is for groundwater collected in the quarry pit to be pumped to settling ponds prior to being discharged in order to attenuate peak flows. The handbook describes guidance for settling ponds that are receiving runoff from disturbed areas, and does not consider any additional inflows, like the ones described in the first quote above. My original EARD comments that "How would the need to pump to the settling ponds be considered in the operation of the sediment ponds and their design criteria?" remain outstanding, and the submission does not adequately address the contents of 1e) of the decision letter, specifically "*provide sufficient detail to illustrate what is being proposed (e.g., sediment control ponds, drainage ditches) and provide confidence in their feasibility and effectiveness, and details that consider the results of the assessments (e.g., potential need to manage groundwater inflows)"*

Decision Letter 1f): *"An assessment of potential impacts to surface water quality and fish and fish habitat related to any active pumping used as a part of water management for the project and residual blasting contamination. This assessment is to consider the results of the other assessments (e.g., potential impacts associated with discharges of groundwater to surface water resources)."*

Response:

- "Surface water runoff and groundwater inflow collected in the quarry will be directed to two settling ponds located northeast and southeast of the quarry, as presented in Figure 3 of the water balance analysis memorandum (Appendix C). The two settling ponds will serve to minimize the concentration of total suspended solids (TSS) to within acceptable limits and will consequently reduce the concentration of any metals constituent that may be present, prior to discharge to the surrounding environment." (pg 16)
    - Noting this quote from the report here to further highlight that the settling ponds are the proposed mitigation for surface water quality, and the need for these ponds to be effectively designed as such.

Decision Letter 1g): *""Additional baseline fish and fish habitat studies and assessment as appropriate, based on the results of the assessments."*

Response:

- "A monitoring program will be developed to detect potential changes to fish habitat. One aspect of this monitoring program will be to ensure water temperatures within the stream, which may potentially be buffered by groundwater discharge, are not significantly impacted by water table drawdown into the empty pit (and therefore potentially impacting temperature sensitive species like trout). If impacts are detected through monitoring, appropriate measures can be applied to mitigate the effects." (pg 19)
- "As previously noted, the channel of WC2 begins within the Study Area and shortly thereafter disperses into a swamp to the east of the Study Area." (pg 19)
- Unmitigated, WC2 may experience a permanent increase in streamflow to approximately 150 m of potential fish habitat, which is the length of the predicted watercourse upstream of WC2-DS. Downstream of WC2-DS, the WBA shows that predicted stream flows within the watercourse increase during operations but return to baseline conditions during dormant and reclamation periods." (pg 20)
- "These permanent and temporary increases in streamflow along the predicted length of WC2 exceed the DFO (2013) thresholds for 10 out of 12 months of the year, with no changes predicted during operating conditions at either POI during July and August. It is anticipated that these increases could have detectable, negative effects on fish and fish habitat within WC2. For example, increased streamflow may cause changes in channel morphology and deposition of eroded material, which may reduce the availability of suitable habitats. However, it should also be noted that an increase in streamflow may improve fish habitat in this intermittent watercourse by improving passage and access to habitat within the watercourse." (pg 20)
    - See my comments on 1d) above – the justification for July and August having no changes is currently not clearly supported
- "Impacts to WC2 resulting from increases in streamflow will be mitigated through use of the northeast and southeast settling ponds. Instantaneous peak flows will be attenuated as water is

held and then discharged more gradually through the pond outlets. The settling ponds will be sized to ensure that these predicted flow increases are mitigated. A monitoring plan will be implemented to ensure that this mitigation strategy is effective. To support the proposed monitoring plan, WC2 will be assessed downgradient of the off-site swamp to confirm that a channel exists, and if so what fish and/or fish habitat it may support." (pg 20)

- See comments on 1e) above – the proposed approach to sediment ponds is not appropriate, as currently stated

Decision Letter 1h): *""Additional baseline fish and fish habitat studies and assessment as appropriate, based on the results of the assessments."*

Response:

- "Drainage ditches and swales will be utilized to the greatest extent practicable to divert surface water away from disturbed surfaces. Any surface water that comes into contact with disturbed areas will be directed to either the quarry pit or settling ponds. Dewatering will occur through pumping to the surrounding settling ponds, as they are developed. The settling ponds will also capture surface flow and allow for suspended sediment to settle out of the water column. Spill ways will be constructed in the settling ponds to allow treated water to return to the surrounding environment. No direct linkage, other than overland flow, exists or will be developed between the settling pond and the surrounding waterbodies. Stream flow will be monitored during quarry operations to ensure that adequate water quantity is available to nearby watercourses as compared to baseline flow." (pg 21)
    - Table 13 does not outline any water quantity monitoring to support the above quote.

Conclusions & Recommendations:

The description of the methodology used to assess potential impacts to surface water quantity provided in the submission currently requires clarification, with conflicting information, gaps, and a reliance on high-level justifications that make it difficult to have a clear picture of the plans for operations, potential for adverse effects and the effectiveness of the proposed mitigations. Considering the questions that remain, the potential impacts to WC2 are currently at risk of being underestimated.

- In comments on the original EARD, I asked "How would the need to pump to the settling ponds be considered in the operation of the sediment ponds and their design criteria?" This question remains outstanding – the 'settling ponds' are described as being the mitigation solution for several of the potential impacts highlighted in the submission, including water quality and fish and fish habitat, including through the management of groundwater pumping volumes from the quarry pit. The design reference that is highlighted as support for the design of these ponds is not relevant or appropriate to be used for the currently stated settling pond uses, there is a lack of clarity between the water balance and the main submission on how these ponds will be operated, and it is unclear whether there is a clear and feasible path towards designing ponds that will represent effective mitigation for the various VECs that are currently proposed to rely on them.
    - If the project is approved, a clear, well-justified approach to pond design and operation (by a qualified professional engineer) is required to be submitted for review and

approval by the Department prior to any construction activities taking place, including (but not limited to) the following:
    - How the design has considered the mitigation of the predicted increases in flows to WC2, supported by results from an updated water balance that considers and clarifies the comments provided in this document, and with considerations for the uncertainty in anticipated groundwater quantities to be managed;
    - How the design has considered the mitigation of impacts to water quality;
    - How the ponds will be operated to meet these objectives, with explicit considerations for the periods of anticipated quarry pit flooding and pumping.
  - Additionally, assessment of reductions of flow to WC2 during the periods of pit filling over the year (along with proposed mitigations to address impacts that may be identified, as necessary) is required to be submitted for review and approval by the Department prior to any construction activities taking place
  - In consideration of the questions above and the potential impacts to the natural flow in WC2 that have been highlighted, a detailed surface water monitoring program is required to support on-going evaluation of the mitigations in place for the proposed works from a surface water quality and quantity perspective. This plan is to include, but not be limited to, the characterization of quarry lake/settling pond and receiving water quality to support further assessment of the impacts associated with pumping activities, details surrounding the proposed monitoring outlined in quotes provided in 1g) and 1h) above, and whatever else is needed to support evaluating the effectiveness of the mitigations proposed and of whether WC2 should be considered for a watercourse alteration approval. This plan is to be submitted to NSECC for review and approval prior to construction activities, including clearing, grubbing, and stripping, take place.
- A detailed site surface water management plan is to be developed by a qualified professional engineer with the intent of minimizing impacts and alterations to nearby surface water resources. This plan should include considerations for diversions of upstream areas around quarry footprints and minimizing changes to contributing drainage areas for the surrounding surface water resources.
- A detailed sediment and erosion control plan is to be developed by a qualified professional and is required to be submitted as part of any industrial approval application for NSE review and approval prior to construction activities, including clearing, grubbing, and stripping, take place.

NOVA SCOTIA
Environment and Climate Change

Barrington Place
1903 Barrington Street
Suite 2085
Halifax, Nova Scotia
Canada B3J 2P8

Date: September 28th, 2022

To: Jeremy Higgins, Environmental Assessment Officer

From: Wetland and Water Resources Specialist, Water Resources Management Unit

Subject: Sporting Mountain Quarry Expansion, Richmond County, Nova Scotia

Scope of review:

The following review of the Sporting Mountain Quarry Expansion – EA Supplemental Information Document (GHD, 2022) is specific to the mandate of the NSECC Wetlands Program within the Sustainability and Applied Sciences (SAS) division. The scope of this review is to assess the potential environmental impacts to wetlands and assure appropriate mitigation measures are proposed. The recommendations provided below are meant to supplement actions outlined in the EA Supplemental Information Document.

Documents Reviewed:

GHD. 2022. *Sporting Mountain Quarry Expansion – EA Supplemental Information. Nova Construction Company Limited.*

General Comments:

The proponent is proposing to maintain a 30 m buffer from WL 2 and is identified as a Wetland of Special Significance (WSS) and is known to support Canada warbler (*Cardellina canadensis*). A wetland monitoring program for WL 2 has also been implemented, however, results of the baseline monitoring are not provided in this submission. WL11 is also identified as a WSS and is known to support blue felt lichen (*Pectenia plumbea*) and is over 300 m from the Revised Expansion Area, and no impacts are anticipated. The avoidance of identified WSS is consistent with the *Nova Scotia Wetland Conservation Policy.*

There is a discrepancy between what wetlands are proposed to be altered by the Project. In Figure 4, Appendix C of the submission, the expanded area partially alters WL7. However, Figure 6 – Figure 12 shows a different area extent and WL7 is entirely altered. Furthermore, it appears WL1 is partially altered, however, in Figure 4, Appendix C, this wetland is avoided.

The information provided in request 1b does not sufficiently provide an analysis on the potential adverse indirect effects to wetlands within the Groundwater Zone of Influence both within and adjacent to the Study Area. It is uncertain to what degree, changes in hydrology will occur, notably in WSS WL2. Based on NSECC Wetland Inventory and Wet Area Mapping (WAM), there are wetlands outside the Study Area and within the

Groundwater Zone of Influence. Field delineated wetlands that are within the Groundwater Zone of Influence, include WL1, WL2, WL4, WL5, WL6, WL7, WL 8, as well as potential wetlands outside the Study Area identified by aerial imagery and WAM. These wetlands may have potential to be indirectly impacted by the quarry activities and may result in hydrological changes, vegetation community shifts and changes in overall wetland function.

The Study Area is an inadequate spatial boundary to evaluate the indirect effects to wetlands and should at a minimum, encompass the extent of the Groundwater Zone of Influence. If land access to adjacent properties is not allowed, then a desktop review of potential impacts to wetlands could have been developed to estimate effects to wetlands.

Conclusions and Recommendations:

Beyond the estimates of wetland area removal, there is insufficient information provided in the EA Supplemental Information Document to predict whether indirect adverse environmental effects on wetland function will occur to wetlands within the Groundwater Zone of Influence. A series of recommendations are provided below:

Planning/Design Issues:

- It is recommended that all wetlands identified within the Groundwater Zone of Influence within the Study Area that are not anticipated to be removed, are to be monitored to determine changes in wetland hydrology, vegetation, and function. In addition to WL2, which is currently being monitored, monitored wetlands should include: WL1, WL4, WL5, WL6, and WL8. The monitoring plan will include:
    - The installation of shallow monitoring wells and piezometers, vegetation plots and general observations of the wetland condition.
    - Baseline monitoring is to occur prior to commencement of construction and post-construction monitoring will occur concurrently with the monitoring of WL2.
- If this project is approved, it is recommended that the proponent prepare and submit a Wetland Monitoring Plan for NSECC's review and acceptance and will be implemented prior to construction of the Project. The monitoring plan, at minimum, will include the key monitoring components listed above. This plan will be developed in consultation with the NSECC Wetland and Water Resources Specialist.

Operational Issues/Other Permitting Processes:

- Alteration/removal of all wetlands are subject to the NSE Wetland Alteration Approval Process.

From:	MacNeil, Malcolm D
To:	Higgins, Jeremy W
Cc:	Jeyakumar, Lordwin; Campbell, Ian M; Mabee, Korey William; Keats, Paul J
Subject:	RE: Sporting Mountain Quarry Expansion - Additional Information Registration - Comments due October 1, 2022
Date:	October 4, 2022 8:48:09 AM
Attachments:	image001.png

Hi Jeremy,

We have no comments on the additional information provided by Nova for the Sporting Mountain Quarry Expansion.

We discussed the submission with SAS and it was our understanding that SAS would be providing comments. We had nothing further to add.

Bye for now,

Malcolm

From: Higgins, Jeremy W <Jeremy.Higgins@novascotia.ca>
Sent: October 4, 2022 8:32 AM
To: Jeyakumar, Lordwin <Lordwin.Jeyakumar@novascotia.ca>; Campbell, Ian M <Ian.Campbell@novascotia.ca>; Mabee, Korey William <Korey.Mabee@novascotia.ca>; MacNeil, Malcolm D <Malcolm.MacNeil@novascotia.ca>; Keats, Paul J <Paul.Keats@novascotia.ca>
Subject: FW: Sporting Mountain Quarry Expansion - Additional Information Registration - Comments due October 1, 2022

Hi folks,
I just wanted to confirm that I have not received comments from the ICE team on the additional information registered by Nova Construction on the Sporting Mountain Quarry Expansion. I would ask that if this is the case, to kindly respond indicating that you have no comments, otherwise, I would appreciate receiving any comments as quickly as possible. Please let me know if you wish to meet to discuss further.
Thanks,
Jeremy

From: Higgins, Jeremy W
Sent: September 28, 2022 10:47 AM
To: BIODIVERSITY <BIODIVERSITY@novascotia.ca>; Hurlburt, Donna D <Donna.Hurlburt@novascotia.ca>; Crewe, Tara <Tara.Crewe@novascotia.ca>; Power, Terrance <Terrance.Power@novascotia.ca>; Greenwood, Mark <Mark.Greenwood@novascotia.ca>; Deacoff, Cameron J <Cameron.Deacoff@novascotia.ca>; Xie, Jun <Jun.Xie@novascotia.ca>; Check, Gordon G <Gordon.Check@novascotia.ca>; Dulmage, Marina Lorna <Marina.Dulmage@novascotia.ca>; 'ReferralsMaritimes@dfo-mpo.gc.ca' <ReferralsMaritimes@dfo-mpo.gc.ca>; Jeyakumar, Lordwin <Lordwin.Jeyakumar@novascotia.ca>; Mabee, Korey William <Korey.Mabee@novascotia.ca>; Campbell, Ian M <Ian.Campbell@novascotia.ca>; Burgess, Annamarie

<Annamarie.Burgess@novascotia.ca>; McGarrigle, Mark <Mark.McGarrigle@novascotia.ca>
Cc: Mosher, Elaine <Elaine.Mosher@novascotia.ca>; Keats, Paul J <Paul.Keats@novascotia.ca>; MacNeil, Malcolm D <Malcolm.MacNeil@novascotia.ca>; Petrie, Bob D <Bob.Petrie@novascotia.ca>
Subject: RE: Sporting Mountain Quarry Expansion - Additional Information Registration - Comments due October 1, 2022

Hi Everyone,

A reminder that comments on the Sporting Mountain Quarry Expansion addendum are on **Saturday, October 1, 2022**. The Minister will be required to make a decision on the project on or before October 21, 2022.
Thank you to those who have already provided comment.

Hope everyone has recovered from Fiona.

Jeremy

From: Higgins, Jeremy W
Sent: September 15, 2022 10:02 AM
To: BIODIVERSITY <BIODIVERSITY@novascotia.ca>; Hurlburt, Donna D <Donna.Hurlburt@novascotia.ca>; Crewe, Tara <Tara.Crewe@novascotia.ca>; Power, Terrance <Terrance.Power@novascotia.ca>; Greenwood, Mark <Mark.Greenwood@novascotia.ca>; Deacoff, Cameron J <Cameron.Deacoff@novascotia.ca>; Xie, Jun <Jun.Xie@novascotia.ca>; Check, Gordon G <Gordon.Check@novascotia.ca>; Dulmage, Marina Lorna <Marina.Dulmage@novascotia.ca>; 'ReferralsMaritimes@dfo-mpo.gc.ca' <ReferralsMaritimes@dfo-mpo.gc.ca>; Jeyakumar, Lordwin <Lordwin.Jeyakumar@novascotia.ca>; Mabee, Korey William <Korey.Mabee@novascotia.ca>; Campbell, Ian M <Ian.Campbell@novascotia.ca>; Burgess, Annamarie <Annamarie.Burgess@novascotia.ca>; McGarrigle, Mark <Mark.McGarrigle@novascotia.ca>
Cc: Mosher, Elaine <Elaine.Mosher@novascotia.ca>; Keats, Paul J <Paul.Keats@novascotia.ca>; MacNeil, Malcolm D <Malcolm.MacNeil@novascotia.ca>; Petrie, Bob D <Bob.Petrie@novascotia.ca>
Subject: RE: Sporting Mountain Quarry Expansion - Additional Information Registration - Comments due October 1, 2022

Hi Everyone,

Just a friendly reminder that comments on the additional information addendum to the EA Registration Document are due by **October 1, 2022.**

Regards,
Jeremy

NOVA SCOTIA
Jeremy W. Higgins
Environmental Assessment Officer

Environment and Climate Change

1903 Barrington St.
Suite 2085
Halifax, NS, B3J 2P8

Policy, Planning and Environmental Assessment

902-233-4477

Jeremy.Higgins@novascotia.ca

From: Higgins, Jeremy W
Sent: August 26, 2022 3:53 PM
To: BIODIVERSITY <BIODIVERSITY@novascotia.ca>; Hurlburt, Donna D <Donna.Hurlburt@novascotia.ca>; Crewe, Tara <Tara.Crewe@novascotia.ca>; Power, Terrance <Terrance.Power@novascotia.ca>; Greenwood, Mark <Mark.Greenwood@novascotia.ca>; Deacoff, Cameron J <Cameron.Deacoff@novascotia.ca>; Xie, Jun <Jun.Xie@novascotia.ca>; Check, Gordon G <Gordon.Check@novascotia.ca>; Dulmage, Marina Lorna <Marina.Dulmage@novascotia.ca>; 'ReferralsMaritimes@dfo-mpo.gc.ca' <ReferralsMaritimes@dfo-mpo.gc.ca>; Jeyakumar, Lordwin <Lordwin.Jeyakumar@novascotia.ca>; Mabee, Korey William <Korey.Mabee@novascotia.ca>; Campbell, Ian M <Ian.Campbell@novascotia.ca>; Burgess, Annamarie <Annamarie.Burgess@novascotia.ca>; McGarrigle, Mark <Mark.McGarrigle@novascotia.ca>
Cc: Mosher, Elaine <Elaine.Mosher@novascotia.ca>; Keats, Paul J <Paul.Keats@novascotia.ca>; MacNeil, Malcolm D <Malcolm.MacNeil@novascotia.ca>; Rocard, Jennifer Marie <Jennifer.Rocard@novascotia.ca>; Petrie, Bob D <Bob.Petrie@novascotia.ca>
Subject: Sporting Mountain Quarry Expansion - Additional Information Registration - Comments due October 1, 2022

Hello everyone,

This is to advise that on September 1, 2022, Nova Construction Co Ltd will register the **Additional Information Addendum** for the Sporting Mountain Quarry Expansion Project for environmental assessment (EA), in accordance with Part IV of the Environment Act.

The purpose of the proposed undertaking is to extend the existing 4.0 hectare quarry footprint to 10.0 hectares to continue operations at the quarry in order to meet local and regional aggregate demand. The Project is located on PID 75044156, owned by Nova Construction Co. Ltd., on Morrison Road in Richmond County, Nova Scotia. Operations of the expanded quarry footprint are anticipated to commence in 2020, pending regulatory approvals. The planned production rate is up to 30,000 tonnes per year, unchanged from current production. The extractable reserves in the Project footprint are estimated to last at least 30+ years depending on market demand.

BACKGROUD - On July 6, 2020, Nova Construction Co. Ltd. registered the proposed Project for environmental assessment. The Minister determined on August 25, 2020, that additional information regarding water resources and wildlife and wildlife habitat was required. **The Proponent must provide information regarding the potential for impacts of the project on water resources**

and wildlife and wildlife habitat. The EA Branch is requesting comments on the Additional Information Addendum only.

The Addendum documents are attached.

Please let me know if you have trouble accessing the document. These documents will also be posted on our website (https://www.novascotia.ca/nse/ea/projects.asp) on September 1, 2022.

Comments on the Additional Information Addendum must be provided by **October 1, 2022**. Comments are requested to be provided via e-mail if possible. If there are no comments, please reply indicating so. **Ensuring a clear, consistent and predictable review of EA projects is key to clarifying and streamlining the EA process. We have developed the attached template to support you, in your role as reviewer, to help achieve this goal, and includes guiding questions to support reviewers in completing the template, requests a summary of comments be provided, and requests sign off by Managers/Directors (for provincial departments) prior to submission of final comments to the EA Branch.**

On or before **October 21, 2022**, the Minister of Environment and Climate Change will decide if the project can be granted conditional environmental assessment approval. **Your comments on the Addendum will be published on our EA website on the decision day.**

If you have any questions, please do not hesitate to contact me.
Jeremy

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Environment and Climate Change

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Jeremy W. Higgins
Environmental Assessment Officer

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Kwilmu'kw Maw-klusuaqn Negotiation Office
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Our Rights. Our Future.

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www.mikmaqrights.com

October 12, 2022

Jeremy Higgins
Environmental Assessment Officer
Environmental Assessment Branch
Nova Scotia Environment and Climate Change
Email: Jeremy.higgins@novascotia.ca

RE: Continuing Consultation on the Sporting Mountain Quarry Expansion Project – Nova Construction Co. Ltd.

Mr. Higgins,

I write to acknowledge receipt of your letter dated September 1, 2022, with respect to continued consultation under the *Terms of Reference for a Mi'kmaq-Nova Scotia-Canada Consultation Process* (ToR) as ratified on August 31, 2010, on the above noted project.

Additional IR request

- With WL2 not being included in the development plan, what monitoring will be included to ensure its protection?
- It is suggested that continuous monitoring of the wetlands occur rather than every 3 years.
- Monthly sampling is suggested at SP-1, SP-2, SP-3, SW-1 and SW-3 when discharging.

EA Registration Document

It should be noted that according to the Environmental Assessment Registration Document (EARD) for Sporting Mountain Quarry Expansion Seaview Richmond County Nova Scotia completed by Nova Construction Co. Ltd., that studies were completed in 2019 and may no longer be valid for our purposes, further, the EARD for this location appears to be heavily reliant on GIS and other data bases which may use out of date information. Because of this, the review of this document is solely that of the information provided in this document and may not be fully complete without additional information.

4.5 Decommissioning and Reclamation

Has the proponent considered Traditional Indigenous Knowledge when developing the Reclamation Plan?

6.2 Dust Mitigation

Please provide thresholds that define 'periods of heavy activity', 'dry or windy periods' at which spray will be used to reduce dust. What monitoring is planned for dust particulate? What are the proposed monitoring locations?

6.4 Noise

Will additional noise monitoring locations be established with the expansion? If so, where are the proposed locations? It is suggested that a noise monitoring location be placed near the bat hibernaculum.

6.7 Habitat assessment

According to the Sporting Mountain Quarry Expansion EARD, a desktop review revealed 11 wetlands and 2 watercourses. Additionally, this section states that habitat had been altered through forest management and is mostly consistent with that of a Spruce-Hemlock Forest. The EARD does not provide a vegetative inventory. Given the presence of disturbance and location proximity to that of other known wisqoq (black ash) sites, we ask that a fully vegetative study be completed prior to any degradation of the project area.

Spruce budworm and Spruce Pine beetle are looming threats to the forests in Unama'ki, with this knowledge we ask that additional work to develop a cumulative impacts study, inclusive of human disturbance and natural disturbance future and past, be considered moving forward noting the proximity of this project area to wetlands and watercourses. This will aid in the assurance of protection of those watercourses and water tables considering the intrusive nature of quarry expansions.

6.7.2 Potential Effects. Proposed Mitigation, Monitoring and Follow up

It is unclear how restoration would occur after work is completed thus, we are requesting more information on this.

6.8 Vegetation

Again, this study is incomplete given the lack of vegetation information and it is unclear what species may be present. As indicated in the 6.7 Habitat assessment review, it is anticipated that important cultural species such as wisqoq may be present on site. We would expect that a comprehensive vegetative study be completed prior to habitat degradation of the project area.

6.8.2 Potential Effects, Proposed Mitigation, Monitoring and Follow-up

States that site reclamation will return the area to a condition that is consistent with the natural surroundings. It is unclear how this work would be conducted, or how often monitoring of the site would occur. We are requesting more information.

6.9 Lichens

This section speaks to lichens. Within the project area six priority lichens were identified. These include:

- Boreal Felt lichen (SAR)
- Frosted Glass Lichen
- Fringe Lichen
- Powered Fringe Lichen
- Slender Monk's Hood Lichen;
- and Corrugated Shingles Lichen.

The importance of lichens to our environment can not be limited to just one value. Lichen's in general have the ability to provide us with very valuable information about our surrounding environment. I.e.: Some lichens can only be present in areas of low pollution, others can inhabit areas of moderate to high pollution converting that atmosphere into a healthier, more sustainable one. Lichens also hold a strong value within the Mi'kmaw nation in Nova Scotia. Through research, multiple words have been identified in the Mi'kmaw language to reference lichens proving their importance to Nova Scotia Mi'kmaq. Further, traditional use of various lichens has been documented and noted to medicinal and ceremonial. The mitigation efforts as outlined by this Environmental Assessment Registration Document in 6.9.2 Potential Effects, Proposed Mitigation, Monitoring and Follow-up can not guarantee appropriate protection and preservation of these sensitive species. Further habitat degradation of a site that houses these important and non-mobile species is not acceptable.

6. 10 Wildlife

States that the species Canada Lynx was identified as being present on the site. Given the Species at Risk status of Canada Lynx in Nova Scotia, it can not be acceptable to alter niche habitats for species at risk. However, if this project is allowed to proceed edging/feathering should be done if project is allotted to proceed to allow for habitat for Snowshoe Hares and their counter part (Canada Lynx) to thrive. Edging/ feathering optimizing biodiversity providing a safe environment for Snowshoe Hares to forage and Canada Lynx to hunt.

6.15 Mi'kmaq Ecological Knowledge Study (MEKS)

Without a comprehensive vegetative inventory, we are unable to determine the full impacts to Mi'kmaq ecological uses. However, because a Mi'kmaq Ecological Knowledge Study was completed and traditional use species were identified, we are asking that community are given adequate opportunity to harvest onsite those vegetations identified.

The Mi'kmaw Nation in Nova Scotia has a general interest in all lands and resources in Nova Scotia as the Mi'kmaq have never surrendered, ceded, or sold the Aboriginal Title to any of its

lands in Nova Scotia. The Mi'kmaq have a Title claim to all of Nova Scotia and as co-owners of the land and its resources it is expected that any potential impacts to Rights and Title shall be addressed.

Yours in Recognition of Mi'kmaw Rights and Title,

Director of Consultation
Kwilmu'kw Maw-Klusuaqn Negotiation Office

c.c.:
Consultation Advisor, Nova Scotia Office of L'Nu Affairs
Catherine Bell, Engagement Officer, Department of Fisheries and Oceans Canada